Behavioral economics

This is a very rough and preliminary shallow investigation about the history of behavioral economics and the factors accounting for its success. In its current incomplete form, it mostly consists of relevant quotes and scattered notes that I accumulated while conducting my research. My original plan was to turn this material into a proper write up, but I was told by various people who read the draft that this may not be necessary, since the quotes as arranged in the document "speak for themselves". So I'm not planning to do any further work on this for the time being, other than to potentially address comments.

What is behavioral economics?

Preliminaries

- 'Behavioral economics' "refers to the attempt to increase the explanatory and predictive power of economic theory by providing it with more psychologically plausible foundations." (Angner & Loewenstein 2012: 642)

- "Behavioral economists do not deny that there may be much to learn from sociology, anthropology, and other neighboring fields. However, most of the work characterized as behavioral economics these days...is inspired by psychology. A separate subfield that draws on sociology, and which is sometimes referred to as "socioeconomics," has coalesced around a different set of researchers and journals." (Angner & Loewenstein 2012: 624)
- “Behavioral economists embrace the core principles of modern economics—*optimization* and *equilibrium*—and wish to develop and refine those ideas to make them more *empirically* accurate.” (Laibson & List 2015: 389)
- "the development of behavioral economics in important respects parallels the development of cognitive science." (Angner & Loewenstein 2012: 642)
    - Parallels
        - Repudiation of positivist methodology.
        - Interdisciplinary approach.
        - Highly influential.
    - "The field is misnamed—it should have been called cognitive economics. We weren't brave enough." (Wanner, quoted in Lambert 2006: 52)

History

The basic history seems to be roughly this (adapted from Camerer & Loewenstein 2004):

- The classical economists, such as Smith, Bentham and Edgeworth, had a very sophisticated understanding of human psychology.
- By contrast, the neoclassical economists thought that psychology should be expunged from economics, and replace it with the idealized notion of *homo economicus*.

    - This distaste with psychology was the result of rejection of psychological hedonism.
    - The expunging of psychology from economics happened slowly; it was complete only by the middle of the 20th century.
- Since the 1950s, a number of authors expressed dissatisfaction with the neoclassical approach and emphasized the importance of psychological measures. These criticisms, while not completely ignored, didn't alter the fundamental direction of economics.

The three core distinctive features of behavioral economics are (1) the use of empirical methods to test mainstream economics assumptions, (2) the use of formal methods to develop more accurate models in light of these empirical findings, and (3) the application of these models to issues of public policy (see Angner & Loewenstein 2012: 641, Thaler 2015: 307).

Examples of assumptions that were tested and falsified include (Rabin 2002: 660):

- People are Bayesian information processors.
- People have well-defined and stable preferences.
- People maximize their expected utility.
- People exponentially discount future well-being.
- People are self-interested, narrowly defined.
- People have preferences over final outcomes, not changes.
- People have only "instrumental"/functional taste for beliefs and information.

Six principles of behavioral economics (Laibson & List 2015):

1. People try to choose the best feasible option, but they sometimes don't succeed.
    a. "People *try* to make the optimal choice—they are optimizers—but they sometimes make mistakes." (386)

2. People care (in part) about how their circumstances compare to reference points.
    a. "It matters whether a person is losing or gaining relative to their reference point. Losses get far more weight than gains, which is called *loss aversion*." (386)
3. People have self-control problems.
    a. "In a traditional economic model there is no gap between a person's good intentions and their actions. By contrast, in the model of *present bias*, people *plan* to work hard... and then renege at the last second." (387)
4. Although we mostly care about our own material payoffs, we also care about the actions, intentions, and payoffs of others, even people outside our family.
    a. These 'social preferences' come in many systematic forms, especially negative reciprocity, behindness aversion, and social pressure." (387)
5. Sometimes market exchange makes psychological factors cease to matter, but many psychological factors matter even in markets.
    a. "The dot-com bubble, which peaked in 2000, illustrates this point." (388)
6. In theory, limiting people's choices could partially protect them from their behavioral biases, but in practice, heavy-handed paternalism has a mixed track record and is often unpopular.
    a. "To illustrate the tendency for governments to make mistakes, consider the extremely optimistic forecasts held by both the Allies and the Central Powers at the beginning of WWI." (388)

Why is the history of behavioral economics important?

The history of behavioral economics is important for a number of reasons:

- Behavioral economics is an example of a new academic field succeeding.
    - Relevance for EA: we can learn how to make global priorities research succeed in academia generally and in economics specifically.

- Behavioral economics is an example of one academic discipline (psychology) influencing another (economics).
    - Relevance for EA: we can learn how to use one discipline to influence another generally, and how to use philosophy to influence economics specifically.
- Behavioral economics is an example of an academic discipline influencing policy.
    - Relevance for EA: we can learn how to turn published findings into policy prescriptions.
- Behavioral economics is an example of philanthropic field building.
    - Relevance for EA: we can learn how to use funding to influence the speed and direction of EA academic research.

In addition to these "substantive" reasons, there's a "methodological" reason for studying the history of behavioral economics: as we will see, in the 1950s there was an attempt to provide economics with more plausible psychological foundations. This movement, sometimes referred to as the 'old behavioral economics', was largely a failure. As such, it serves as a sort of natural control group to test hypotheses about the success of the 'new' behavioral economics.

How influential was behavioral economics?

- It influenced economics.
    - "As recently as 15 years ago [i.e. the early 1990s], the sub-discipline called behavioral economics...was a marginal, exotic endeavor. Today, behavioral economics is a young, robust, burgeoning sector in mainstream economics, and can claim a Nobel Prize, a critical mass of empirical research, and a history of upending the neoclassical theories that dominated the discipline for so long." (Lambert 2006)
    - "While still controversial, behavioral economics is on the verge of "going mainstream", especially in top departments in the U.S. The number of recent hirings, tenurings, conferences, etc., based on

behavioral-economic research reflects its growing acceptance." (Rabin 2002: 657)

- "In its relatively short lifetime, behavioral economics has influenced a wide range of subtopics of economics and allied fields, such as behavioral law and economics to behavioral finance, behavioral development economics, behavioral public finance, behavioral game theory, and behavioral macroeconomics." (Angnar & Loewenstein 2012: 679)
- "Although behavioral economics has enjoyed much more rapid progress and gained more respectability in economics than appeared possible fifteen years ago, it is still a minority approach and its influence on most fields of economics is negligible. Many economists believe that it is a passing fad, and some hope that it will be. The future may prove them right. But many bright young economists are now betting their careers on the expectation that the current trend will last. And such expectations have a way of being self-fulfilling." (Kahneman 2002)
- "Behavioral economics has never been stronger; it has become almost impossible to do applied economics without learning some empirical psychology." (Caplan, The myth of the rational voter, xi)
- "Behavioural economics is a hot topic. Behavioural economics research is regularly featured in the top academic journals in economics and science. It has a high profile on social media, and journalists regularly write about the new books and research emerging in the field. Governments and other policy-makers, from all over the world, are embedding insights from behavoural economics into their policy designs, as, increasingly, are more mainstream economists when designing their models." (Baddeley 2017: 1).
- In one of its surveys, the IGM Economic Experts Panel (a group of eminent academic economists) found that 60% of panelists ‘Strongly agree’ and 33% ‘Agree’ with the claim that behavioral economics has

generated insights that "predict several important types of observed market outcomes that fully-rational economic models do not."[1]

- It influenced policy.
- See key events in timeline.
- Citation counts (Laibson & Zeckhauser 1998)
- Kahneman only psychologist to ever receive a Nobel Memorial prize in economics.

What were the factors behind the success of behavioral economics?

The success of behavioral economics appears to be explained by a number of different causes and background conditions. Below, I list the factors that strike me as the most important.

Background conditions

Psychology had been expunged from economics.

- "Viewed in historical perspective, behavioural economists are trying to reverse a fundamental shift in economics which took place from the beginning of the twentieth century: the 'Paretian turn'. This shift, initiated by Vilfredo Pareto and completed in the 1930s and 1940s by John Hicks, Roy Allen and Paul Samuelson, eliminated psychological concepts from economics by basing economic theory on principles of rational choice." (Bruni & Sugden 2007: 146)
- "Before the Paretian turn, neoclassical economics was based on what was then state-of-the-art research on the psychology of sensation... For the early neoclassical economists, economics rested on the fundamental assumption that individuals act on self-interest. Thus, Jevons describes his theory as 'the mechanics of utility and self-interest'; Edgeworth's 'economical calculus' begins with the famous declaration that 'The first

[1] http://www.igmchicago.org/surveys/behavioral-economics

principle of economics is that every agent is actuated only by self-interest... Given the assumption of self-interest, economic theories of behaviour were to be deduced from psychological laws about human wants, which in turn were understood in terms of the pursuit of pleasure and the avoidance of pain. Pleasure and pain were treated as sensation, of which the person who experiences them has direct knowledge. By introspection, and by the study of other people's reports of their introspections, an investigator could arrive at knowledge of the laws governing pleasure and pain. For the neoclassical economists, the most significant of these laws concerned the relationship between stimuli and sensations. In slightly different ways, these economists advanced the hypothesis that, as the amount of any stimulus increases, the increment of sensation produced by a given increment of stimulus falls. The law of diminishing marginal utility...was seen as a special case of this more general law of psychology." (Bruni & Sugden 2007: 147, 150)

    - I.e. increasing quantities of given physical inputs are needed to produce a given increase in phenomenal outputs—whether the output is pleasure, redness, etc.

- "Pareto... proposes that economic theories should be deduced from firmly established empirical propositions about choice rather than about sensation. '[T]his entire theory..rests on no more than a fact of experience, that is, on the determination of the quantities of goods which constitute combinations between which the individual is indifferent. The theory of economic science thus acquires the rigor of rational mechanics; it deduces its results from experience, without bringing in any metaphysical entity... I am not interested in the reason why man is indifferent between [one thing and another] I notice the pure and naked fact'." (Bruni & Sugden 2007: 155)

Economics started generating more testable predictions.

- The rapid acceptance of expected utility and discounted utility as models of human behavior generated precise falsifiable predictions, unlike generic utility analysis which had only vague implications. These predictions were then tested and falsified, yielding a growing body of anomalies that economists found increasingly hard to ignore.

The cognitive revolution strongly influenced many areas of social science.

- The cognitive revolution (1) made the study of internal psychological states scientifically respectable and (2) provided a growing body of insights that offered directions for an alternative theory. (1) played a destructive role, by undermining Friedman's influential view that economic theories should be assessed exclusively in terms of their predictive power about external behavior; while (2) played a constructive role, by offering an exciting alternative.

Mainstream economics encountered mathematical difficulties.

- "Whereas elegant mathematics had left little to no room for messy psychology, new space for psychological insights was created when mainstream economics encountered mathematical difficulties... Th[e] mathematical difficulties encountered by mainstream economics facilitated not only the incorporation of psychological insights in general, but also encouraged efforts to integrate some bounded rationality in particular into mainstream models." (Sent 2004: 751, 753)

Causes

Behavioral economics incorporated the theory and methods of neoclassical economics.

- "[Behavioral economics] is not only built on the premise that economic methods are great, but also that most mainstream economic assumptions are great. It does not abandon the correct insights of neoclassical economics, but supplements these insights with the insights to be had from realistic new assumptions." (Rabin 2002: 658-659)

- "The point is not to truly create a separate approach or field but, instead, to impose more psychological discipline on economic theorizing" (Camerer 1999a: 3)

Behavioral economics incorporated mainstream economic theory.

Behavioral economists didn't reject mainstream economics. Rather, mainstream economics was retained (1) as a normative ideal, (2) as the null hypothesis, and as (3) a special case.

- "this research is not an alternative to the economic research program into which we were all socialized in graduate school, but the natural continuation of this research program." (Rabin 2002: 659)
- "At the core of behavioral economics is the conviction that increasing the realism of the psychological underpinnings of economics analysis will improve economics on its own terms... This conviction does not imply a wholesale rejection of the neoclassical approach to economics... (Camerer & Loewenstein 2004: 3)
- “we like to emphasize that behavioral economics is a series of amendments to, not a rejection of, traditional economics... Both traditional and behavioral economists believe that (i) people *try* to choose their best feasible option (optimization); (ii) people *try* to choose their best feasible option when interacting with others (equilibrium); and (iii) models need to be tested with data (empiricism).” (Laibson & List 2015)

(1) As a normative ideal.

- Behavioral economists "criticize the orthodox theory of choice under uncertainty as a positive or descriptive theory of decision, not as normative or prescriptive one. In fact, behavioral economists for the most part have accepted the conception of rationality associated with neoclassical economics." (Anger & Loewenstein 2012: 668)
- "Kahneman and Tversky’s insights were opposite those of Simon in the sense that they started from the rationality assumption that has characterized mainstream economics and next analyzed departures from this yardstick, rather than developing an alternative one." (Sent 2005: 230)
- "In prospect theory, Kahneman and Tversky maintained utility maximizing and the other theories of rational decision making of the economists and mathematicians as the universal, normative benchmarks by which all decision making was to be judged." (Heukelom 2012: 265)
- "In the 1970s, cognitive psychologists began studying judgment and economic decision making. These studies took a different approach from the one Simon suggested. They took expected-utility maximization and Bayesian probability judgments as benchmarks, and used conformity or

deviation from these benchmarks as a way to theorize about cognitive mechanisms." (Camerer 1999: 1)

- "[Behavioral economics] maintained the framework of reasoning from a set of optimal or normative behavioral rules as commenced by von Neumann and Morgenstern (2004 [1944]) and Savage (1954), but rigorously separated the normative from the descriptive domain." (Heukelom 2015: 132)
- "Economic theory at that time, and for most economists today, uses one theory to serve both normative and descriptive purposes... Prospect theory sought to break from the traditional idea that a single theory of human behavior can be both normative and descriptive." (Thaler 2015: 27)
- "[expected utility theory] has been generally accepted as a normative model of rational choice" (Kahneman and Tversky, 1979, p. 263)
- "Kahneman and Tversky's approach differed in a subtle but fundamental way from, for instance, Simon's, the well-known critic of economics. Just as Kahneman and Tversky, Simon understood economics to have both normative and descriptive ambitions, but unlike Kahneman and Tversky, he considered economics to have embarked on the wrong track entirely. To Simon, the (what he understood to be) normative theory of neoclassical economics was too rigid by not allowing improvements of optimal behavior. Using this static normative theory as a description of actual human decision behavior was plainly absurd. Kahneman and Tversky were much less hostile. In fact, they were in favor of current practice in economics – after all, behavioral decision research and measurement theory were considered to be at least partly based on economics – and they only meant to suggest that a few adjustments be made to improve it. Thus, in the second sentence of the prospect theory article they argued that "[expected utility theory] has been generally accepted as a normative model of rational choice" (Kahneman and Tversky, 1979, p. 263) and left it undisputed in the rest of the article. Contrary to Simon, Kahneman and Tversky argued that there was nothing wrong with economists' theory of expected utility maximization. It was only that this was the normative theory, and not an accurate description of actually observed human behavior. Economists do not need to abandon the theory of expected utility maximization, but instead, they should seek a

proper descriptive counterpart to this normative theory. " (Heukelom 2015: 127)

- “Why did Tversky’s critiques stick while other non-rational models were being squeezed out of the economics profession? [...] Finally, Tversky has presented himself and his results in a winning style. [...] he was well equipped to engage the economics profession, since he understood our models, presented himself as a scientist rather than a preacher, and did not challenge the central normative judgments of the profession.” (Laibson & Zeckhauser 1998: 20)
- Note that the retention of neoclassical assumptions as normative ideals is not incidental, but essential, to Kahneman and Tversky's project. It is only by making these assumptions about human rationality that they were able to establish the existence of various human biases.

(2) As the null hypothesis.

So mainstream economics describes how people *ought* to behave. But, in addition, people generally aspire to act in accordance with this normative ideal. As Laibson & List 2015 write, “people *try* to make the optimal choice—they are optimizers—but they sometimes make mistakes.” (386)

- "The rational-agent model was our starting point and the main source of our null hypotheses." (Kahneman 2003: 1449)
- "It is important for our narrative concerning the nonmainstream roots of old behavioral economics and the mainstream ones of new behavioral economics to highlight that Kahneman and Tversky started from the rationality assumption that has characterized mainstream economics and next analyzed departures from this yardstick, as opposed to developing an alternative one." (Sent 2004:)
- The new behavioral economics grew out of behavioral decision research (BDR). "What truly distinguishes BDR from other approaches to human judgment and decision making... is that it studies judgment and decision making by taking as its starting point theories of rational choice. (Angner & Loewenstein 2012: 661)

- "rational choice theory gave birth to BDR by providing a "hard target"—a theory that...made clear and crisp predictions that could be explored in laboratory and other settings—for its researchers" (Angner & Loewenstein 2012: 662)

- "we do not need to throw away everything we know about how economies and markets work. Theories based on the assumption that everyone is an Econ should not be discarded. They remain useful as starting points for more realistic models. And in some special circumstances... models of Econs may provide a good approximation of what happens in the real world." (Thaler 2015: 7)

(3) As a special case.

- "I tend to view the study of behavioral extensions of these efficient market models as leading in a sense to the enhancement of the efficient market models. I could teach the efficient market models to my students with much more relish if I could describe them as extreme special cases before moving to the more realistic models." (Shiller, quoted in Thaler 2015: 168)

Behavioral economics incorporated the methods of neoclassical economics.

- "it should be pointed out that behavioral economics does not involve a complete rejection of neoclassical theory or methods. It is not just... that understanding the neoclassical background against which behavioral economics helps us better understand the latter. Behavioral economists...use experimental methods and mathematical modeling skills borrowed from neoclassical economics. They retain neoclassical theory as a normative ideal and source of null hypotheses. Moreover, very often, neoclassical theory is preserved as a special case of behavioral theories." (Angner & Loewenstein 2012: 680)

- "As psychologists, Tversky and Kahneman were well aware of psychological approaches to the study of human judgment and decision making. Yet, they had also mastered the formalism of economic theories of decision." (Angner & Loewenstein 2012: 662)

- "This sort of psychology provided a way to model bounded rationality which is more like standard economics than the more radical departure that Simon

had in mind. Much of behavioral economics consists of trying to incorporate this kind of psychology into economics." (Camerer 1999)

- "The findings of this research often consisted of psychological principles or constructs that could be expressed in simple formal terms, thus providing a way to model bounded rationality in terms familiar to economists." (Camerer 1999b, Camerer 1999a: 1)
- "prospect theory has an axiomatic underpinning" (Camerer 1999a: 2)
- "there was another way in which the impact of prospect theory depended crucially on the medium, as well as the message. Prospect theory was a formal theory, and its formal nature was the key to the impact it had in economics. Every discipline of social science, I believe, has some ritual tests of competence, which must be passed before a piece of work is considered worthy of attention... To serve this screening function efficiently, the competence tests usually focus on some aspect of form or method, and have little or nothing to do with substance. Prospect theory passed such a test in economics, and its observations became a legitimate (though optional) part of the scholarly discourse in that discipline. It is a strange and rather arbitrary process that selects some pieces of scientific writing for relatively enduring fame while committing most of what is published to almost immediate oblivion." (Kahneman 2002)

Behavioral economics offered evidence that was hard to dismiss.

- Stressed that the deviations between economic assumptions and observed behavior were not random but systematic, and hence could not be expected to “wash out” in the aggregate.
- Documented the existence of these deviations in a wide range of contexts.
- Documented these deviations using proper psychological studies, rather than anecdote or common sense.
- "Two research tools that have emerged over the past twenty-five years have greatly expanded economists' repertoire for learning about the world. The first is the use of randomized control trial experiments, long used in other scientific fields such as medicine... The second approach is to use either

naturally occurring experiments (such as when some people are enrolled in a program and others are not) or clever econometrics techniques that manage to detect the impact of treatments even though no one deliberately designed the situation for that purpose." (Thaler 2015: 8)

- "We published the article in Science because we thought that the prevalence of systematic biases in intuitive assessments and predictions could possibly be of interest to scholars outside psychology. This interest, however, could not be taken for granted, as I learned in an encounter with a well-known American philosopher at a party in Jerusalem. Mutual friends had encouraged us to talk about the research that Amos and I were doing, but almost as soon as I began my story he turned away, saying, "I am not interested in the psychology of stupidity... The Science article turned out to be a rarity: an empirical psychological article that (some) philosophers and (a few) economists could and did take seriously. What was it that made readers of the article more willing to listen than the philosopher at the party? I attribute the unusual attention at least as much to the medium as to the message. Amos and I had continued to practice the psychology of single questions, and the Science article—like others we wrote—incorporated questions that were cited verbatim in the text. These questions, I believe, personally engaged the readers and convinced them that we were concerned not with the stupidity of Joe Public but with a much more interesting issue: the susceptibility to erroneous intuitions of intelligent, sophisticated, and perceptive individuals such as themselves." (Kahneman 2002)
- "Economists do not put much stock in the answers to hypothetical questions... Economists say they care more about what people co as opposed to what they say they would do. Kahneman and Tversky were aware of the objections, undoubtedly raised by sceptical economists they had met, but they had little choice... In the published version of prospect theory, Amos and Danny included the following defense of their methods: "By default, the method of hypothetical choices emerges as the simplest procedure by which a large number of theoretical questions can be investigated. The use of the method relies on the assumption that people often know how they would behave in actual situations of choice, and on the further assumption that the subjects have no special reason to disguise their true preferences...." This

defense apparently satisfied the journal editor but remained a bugaboo among economists for years. Prospect theory gradually gained acceptance because it proved useful in explaining behavior in a variety of high-stakes settings where it was possible to observe actual choices, from individual investors to game show contestants." (Thaler 2015: 38)

    - Simon doesn't seem to have used this method, so this may be a further reason why the new behavioral economics triumphed.

- "the publication of Daniel Kahneman and Amos Tversky's paper 'Prospect Theory' in *Econometrica* in 1979 can be seen as a defining moment for behavioural economics. By presenting a body of experimental data which appeared to contradict conventional economic theories of decision making, and by proposing an alternative theory of non-rational behaviour based on psychological hypotheses, Kahneman and Tversky challenged the prevailing methodology of economics... Initially, many economists reacted to Kahneman and Tversky's work, and to behavioural economics more generally, by denying that there was any case to answer... But as experimental economics developed over the course of the 1980s and 1990s, the terms of debate gradually changed. Systematic violations of standard theory, such as the common consequence effect, the common ratio effect, the Ellsberg paradox, preference reversal, the endowment effect, the rejection of positive offers in ultimatum games and the choice of dominated strategies in public good games, were replicated in experiments which controlled for the factors that previously had been invoked in explaining anomalies as artefacts." (Bruni & Sugden 2007: 161)

- “Why did Tversky’s critiques stick while other non-rational models were being squeezed out of the economics profession? First, Tversky’s critiques were carefully validated experimentally. Concepts were often tested with a series of experiments and under a range of experimental conditions. [...] Tversky stated only what could be clearly and robustly demonstrated.” (Laibson & Zeckhauser 1998: 20)

Behavioral economics provided concrete, positive alternatives to the neoclassical models.

Before behavioral economics appeared in the economic scene, mainstream economists were generally dismissive of critiques of the neoclassical models,

because no concrete alternatives were explicitly offered and because there was no clear and simple way of revising these models to deal with the critiques. By contrast, behavioral economics was constructive: it allowed mainstream economists to take these problems seriously, by providing theories which could solve these problems. Seven examples, taken from Camerer 1999a:

1. Theories of reference-dependent preference and by theories of preference "Construction" as alternatives to utility maximization.
2. Prospect theory as an alternative to expected utility theory.
3. Theories with non-additive probability as alternatives to subjective expected utility theory.
4. Hyperbolic discounting as an alternative to discounted utility.
5. “Support theory” or formalizations of cognitive heuristics such as availability and representativeness as alternatives to Bayesian updating.
6. Theories of “social preference” as alternatives to theories of self-interest.
7. Theories of adaptive learning as alternatives to theories of equilibrium.

- "progress in this new field will depend on moving beyond laboratory demonstrations of the inaccuracy of the behavioral assumptions employed in economics and toward efforts to develop and test more behaviorally sophisticated economic theory." (advisory committee of the behavioral economics program, quoted in Heukelom 2012: 273)

- "They’d spend three years doing very little else but searching the theory for internal contradictions. “In those three years we did not discuss anything of genuine interest,” said Danny. Danny’s interest ended with the psychological insights; Amos was obsessed with the business of using the insights to create a structure. What Amos saw, perhaps more clearly than Danny, was that the only way to force the world to grapple with their insights into human nature was to embed them in a theory. That theory needed to explain and predict behavior better than existing theory, but it also needed to be expressed in symbolic logic. “What made the theory important and what made it viable were completely different,” said Danny, years later. “Science is a conversation and you have to compete for the right

to be heard. And the competition has its rules. And the rules, oddly enough, are that you are tested on formal theory." (Lewis 2016: ch. 11)

- “By the summer of 1973, Amos was searching for ways to undo the reigning theory of decision making, just as he and Danny had undone the idea that human judgment followed the precepts of statistical theory. On a trip to Europe with his friend Paul Slovic, he shared his latest thoughts about how to make room, in the world of decision theory, for a messier view of human nature. “Amos warns against pitting utility theory vs. an alternative model in a direct, head to head, empirical test,” Slovic relayed, in a letter to a colleague, in September 1973. “The problem is that utility theory is so general that it is hard to refute. Our strategy should be to take the offensive in building a case, not against utility theory, but for an alternative conception that brings man’s limitations in as a constraint.” (Lewis 2016: ch. 9)

- "Somehow, the economists felt that we are right and at the same time they wished we weren’t because the replacement of utility theory by the model we outlined would cause them no end of problems." (Paul Slovic, quoted in Lewis 2016: ch. 10)

- “Why did Tversky’s critiques stick while other non-rational models were being squeezed out of the economics profession? [...] Second, his critiques were accompanied by models that were relatively parsimonious—and hence, widely applicable. He showed that decision makers err, and he explained how to systematically predict their errors. Prospect theory provides a particularly strong case. The model has now been parametrized and calibrated, making it more competitive with standard mathematical models of economic behavior. [...] Tversky’s mathematical models make his experimental results, and particularly prospect theory, far more marketable to economists” (Laibson & Zeckhauser 1998: 20, 24)

Behavioral economics spoke a language that mainstream economists could understand.

- “[Kahneman and Tversky] are able and willing to address economists in standard economic language and venues.” (Rabin 1996: 111)

- "Tversky and Kahneman, as well as Thaler, brought this line of research to the attention of economists in part by speaking a language that economists already understood." (Angner & Loewenstein 2012: 668)
- “Why did Tversky’s critiques stick while other non-rational models were being squeezed out of the economics profession? [...] Third, Tversky mastered the relevant economics literature and employed the language of the profession in his writing.” (Laibson & Zeckhauser 1998: 20)

Behavioral economics was published in prestigious economics journals.

- Kahneman & Tversky's 'Prospect Theory' was published in *Econometrica* and remains one of the most cited papers in that journal.
- "We published the paper in *Econometrica*. The choice of venue turned out to be important; the identical paper, published in Psychological Review, would likely have had little impact on economics." (Kahneman 2002)
- "Kahneman and Tversky started this revolution in economics," says Straus professor of business administration Max Bazerman... That 1979 paper was written on the turf of economics, in the style of economists, and published in the toughest economic journal, Econometrica. The major points of prospect theory aren't hard to state in words. The math was added for acceptance, and that was important." (Lambert 2006)
- "it took Kahneman and Tversky some five years to get the article published in Econometrica and that the last four of these five years were used to tweak a for the most part finished argument to fit an economic audience." (Heukelom 2015: 119)
- "As was the case in our work on judgment, our central insights were acquired early and, as was the case in our work on judgment, we spent a vast amount of time and effort before publishing a paper [i.e. the Econometrica one] that summarized those insights." (Kahneman 2002)
- "We...spent about three years polishing [the Econometrica paper], until we were ready to submit the article for publication. Our effort during those years was divided between the tasks of exploring interesting implications of our theoretical formulation and developing answers to all plausible

objections. To amuse ourselves, we invented the specter of an ambitious graduate student looking for flaws, and we labored to make that student's task as thankless as possible." (Kahneman 2002)

- "its rhetoric was specifically designed to convince readers of Econometrica." (Haukelom 2012: 809)

Behavioral economics received early support from philanthropists.

- "The Behavioral Economics Program… ran from 1984 through 1992. The primary contribution of the Sloan and Russell Sage behavioral economics program were not the resources it provided, which were relatively modest. Instead, the program's contribution lay in nourishing what Richard Thaler (b. 1945) in the above quote aptly calls "a sense of mission." The behavioral economics program catalyzed in the researchers it supported a sense of contributing to a new direction of the economic discipline. Partly this reflected the common strategy of American foundations to pick an individual or small group of scientists and stick with them until scientific success had been achieved (Jones and Rahman 2009; Hauptmann 2006). In addition, it reflected the good luck of being at the right place at the right time. But, moreover, it was a consequence of the careful management of the program's director Eric Wanner (b. 1942)." (Heukelom 2012: 264)

- "The major catalyst of Kahneman and Tversky's work in economics was the behavioral economics program of the Sloan and Russell Sage Foundations." (Heukelom 2012: 266)

- "With the retrospective wisdom of the scientific achievement of Kahneman, Thaler, and behavioral economics, it is tempting to conclude that behavioral economics would have developed anyway, with or without the support of the Sloan and Russell Sage Foundations. But that would gloss over the efforts of Rees, Wanner, and the advisory committee to bring economists and psychologists together and to support the research that the more regular research funding institutes were unwilling to support. The careful balance between psychologists and economists Wanner maintained both in the advisory committee, in the list of researchers invited, and in the proposals granted ensured that neither one nor the other would feel dominated. Helped in part by his background in the interdisciplinary cognitive research

at Harvard University in the 1960s and helped also by his management of the Cognitive Science Series at Harvard University Press, Wanner created the conditions in which the interdisciplinary program of economists and psychologists could thrive." (Heukelom 2012: 281-282)

- "Rees and Wanner's strategy to pick a small group of researchers with potentially new and influential research and to stay with them until success had been achieved reflects a common strategy of postwar American foundations. It was among others laid down and perfected by Weaver, a precursor and example to Wanner at the Sloan Foundation. The goal of this strategy was to develop a social and behavioral science that could be employed as an agent of the desired societal changes the foundations wished to bring about." (Heukelom 2012: 282)

- "Russell Sage Foundation president Eric Wanner...helped fund research in behavioral economics since the mid-1980s and has been instrumental in the establishment of behavioral economics as an independent discipline." (Angner & Loewenstein 2012: 642)

- "the Russell Sage Foundation, which devotes itself to research in the social sciences, consistently supported behavioral economics, even when it was in the intellectual wilderness. Current Sage president Eric Wanner, whose doctorate is in social psychology, was running a program in cognitive science at the Alfred P. Sloan Foundation in 1984 when Sloan started a behavioral economics program as an application of cognitive science to the study of economic decision-making." (Lambert 2006)

- "Along the way, Eric Wanner of the Alfred P. Sloan Foundation and subsequently the Russell Sage Foundation played a critical role in funding these efforts... While at the Sloan Foundation, Eric Wanner, a psychologist, was eager to get economists and psychologists talking to one another. After he became president of the Russell Sage Foundation, Wanner continued supporting (new) behavioral economics. In 1986, Sage started a behavioral economics program jointly with the Sloan Foundation with the aim of strengthening the accuracy and empirical reach of economic theory by incorporating information from neighboring social science disciplines, especially psychology and sociology. Since 1992, the Sage Foundation has

supported two principal activities in behavioral economics—a series of workshops run by the National Bureau of Economic Research (NBER) and the Behavioral Economics Roundtable, a forum for discussing new ideas and encouraging younger social scientists to enter the field. Sage also sponsors the Summer Institute for Behavioral Economics, which is designed to introduce Ph.D. students and new junior faculty—also known as "campers"—to the methods and findings of behavioral economics. " (Sent 2004: 744)

    - "Summer programs for graduate students can be hugely influential. As a graduate student, Professor Wolfers attended a two-week program on behavioral economics funded by the Russell Sage Foundation. The young economists who attended this program, all of whom are now professors, were able to produce cutting-edge research much more rapidly as a result of attending the program. This was a highly cost-effective intervention" (Wolfers 2016)

- "Eric Wanner of the Sloan Foundation and subsequently the Russell Sage Foundation played a critical role identifying and then funding this new field." (Laibson & Zeckhauser 1998: 19)

- "In 1982, Amos and I attended a meeting of the Cognitive Science Society in Rochester, where we had a drink with Eric Wanner, a psychologist who was then vice-president of the Sloan Foundation. Eric told us that he was interested in promoting the integration of psychology and economics, and asked for our advice on ways to go about it. I have a clear memory of the answer we gave him. We thought that there was no way to "spend a lot of money honestly" on such a project, because interest in interdisciplinary work could not be coerced. We also thought that it was pointless to encourage psychologists to make themselves heard by economists, but that it could be useful to encourage and support the few economists who were interested in listening. Thaler's name surely came up. Soon after that conversation, Wanner became the president of the Russell Sage Foundation, and he brought the psychology/economics project with him." (Kahneman 2002)

- "Eric Wanner and the Russell Sage Foundation continued to support behavioral economics over the years. I was instrumental in the idea of using some of that support to set up a summer school for graduate students and young faculty in that field, and I helped Dick Thaler and Colin Camerer organize the first one, in 1994." (Kahneman 2002)

- "Here is the plan Eric [Wanner] devised. In 1992, the foundation formed a group of researchers called the Behavioral Economics Roundtable, gave them a modest budget, and tasked them with the goal of fostering growth in the field. The initial members of the roundtable were George Akerlof, Alan Blinder, Colin Camerer, Jon Elster, Danny Kahneman, George Loewenstein, Tom Schelling, Bob Schiller, Amos Tversky, and I, and within reason, we could spend the money we were given any way we wanted. The Roundtable members decided that the most useful way to spend our limited budget (which began at $100,000 per year) was to foster and encourage the entry of young scholars into the field. To do this, we organized two-week intensive training programs for graduate students to be held during the summer.... the primary accomplishment of the summer camps was to increase the likelihood that some of the best young graduate students in the world would seriously consider the idea of becoming behavioral economists, and then to provide them with a network of like-minded economists they could talk to... It is largely the research produced by those summer camp graduates that has turned behavioral economics from a quirky cult activity to a vibrant part of mainstream economics." (Thaler 2015: 181, 183, 184)

Summary of the activities of the Russell Sage Foundation:

- "During the first eight years of the program, the foundation made 60 research awards, hosted three groups of Visiting Scholars, and established several working groups: one in behavioral finance, one on time preference (or inter-temporal choice), and another on economic sociology. These early activities resulted in a number of influential books on behavioral economics published by the foundation, all of which remain key texts in the field today. " (Russell Sage Foundation 2017)

- "In 1992, the foundation launched the Behavioral Economics Roundtable, whose initial members were elected by participants in the program and

given foundation support to devise activities designed to advance this new interdisciplinary field. The results were so consistently successful that the Roundtable became the foundation's principal means of supporting behavioral economics until 2013. Made up of 28 prominent behavioral economists, including 7 Nobel Prize winners, the Roundtable sponsored three main activities: a small grants program for younger scholars undertaking behaviorally oriented research; a two-week summer workshop taught by Roundtable members for graduate students and junior faculty interested in entering this new interdisciplinary field; and a book series in a behavioral economics co-published by RSF and Princeton University Press." (Russell Sage Foundation 2017)

- Check whether these activities resemble those described by Muehlhauser in his study of philanthropic field building.
    - Muehlhauser's general takeaways:
        - "Most of the "obvious" methods for building up a young field have been tried, and those methods often work. For example, when trying to build up a young field of academic research, it often works to fund workshops, conferences, fellowships, courses, professorships, centers, requests for proposals, etc. Or when trying to build up a new advocacy community, it often works to fund student clubs, local gatherings, popular media, etc." (Muehlhauser 2017)
        - "Fields vary hugely along several dimensions, including (1) primary sources of funding (e.g. large philanthropists, many small donors, governments, companies), (2) whether engaged philanthropists were "active" or "passive" in their funding strategy, and (3) how much the growth of the field can be attributed to endogenous factors (e.g. explicit movement-building work) vs. exogenous factors (e.g. changing geopolitical conditions)." (Muehlhauser 2017)
    - Muehlhauser's specific takeaways:

- "The rise of bioethics seems to be a case study in the transfer of authority over a domain (medical ethics) from one group (doctors) to another (bioethicists), in large part due to the first group's relative neglect of that domain." (Muehlhauser 2017)
- "In the case of cryonics and molecular nanotechnology, plausibly growth-stunting adversarial dynamics arose between advocates of these young fields and the scientists in adjacent fields (cryobiology and chemistry, respectively). These adversarial dynamics seem to have arisen, in part, due to the young fields' early focus on popular outreach prior to doing much scientific or technical work, and their disparagement of those in adjacent fields." (Muehlhauser 2017)
- "The rise of neoliberalism is a victory for an explicit strategy of decades-long investment in the academic development and intellectual spreading of a particular set of ideas, though this model may not work as well when the ideas themselves don't happen to benefit a naturally well-resourced set of funders (large corporations and their wealthy owners, as in the case of neoliberalism)." (Muehlhauser 2017)
- "A small group of funders of the conservative legal movement managed to critique their own (joint) strategy, change course, and succeed as a result." (Muehlhauser 2017)
- "The rise of the environmental and animal advocacy movements contrast sharply with the cases above, both because they grew mostly via a large network of small funders rather than a small network of large funders, and because many of those movements' activities do not materially benefit any funder or political actor (e.g. in the case of wilderness preservation or campaigns against factory farming)." (Muehlhauser 2017)

Behavioral economics received early support from professional economists.

Behavioral economics was not only supported by philanthropists in the early stages; it was also supported by economists, notably Richard Thaler, through whom this new approach spread to others in the profession, such as Colin Camerer, Linda Babcock, Catherine Eckel, George Loewenstein and Matthew Rabin.

- "Danny and Amos both saw that there was no point trying to infiltrate economics from psychology. The economists would just ignore intruders. What were needed were young economists with an interest in psychology." (Lewis 2016: ch. 14)

- "In the 1980s, Richard Thaler... began importing such psychological insights into economics, writing a regular feature called "Anomalies" in the *Journal of Economic Perspectives*... "Dick Thaler lived in an intellectual wilderness in the 1980s," says professor of economics David Laibson, one of Harvard's most prominent behavioral economists. "He championed these ideas that economists were deriding. But he stuck to it. Behavioral approaches were anathema in the 1980s, became popular in the 1990s, and now we're a fad, with lots of grad students coming on board. It's no longer an isolated band of beleaguered researchers fighting against the mainstream". As with most movements, there were early adopters. "In the 1980s the best economists in the world were seeing the evidence and adopting it [behavioral economics]," Bazerman says. "Mediocre economists follow slowly—they continued to ignore it so they could continue doing their work undisturbed." (Lambert 2006)

- "Although I do not wish to renounce any credit for my contribution, I should say that in my view the work of integration was actually done mostly by Thaler and the group of young economists that quickly began to form around him, starting with Colin Camerer and George Loewenstein, and followed by the likes of Mattew Rabin, David Laibson, Terry Odean, and Sendhil Mullainathan. Amos and I provided quite a few of the initial ideas that were eventually integrated into the thinking of some economists, and prospect theory undoubtedly afforded some legitimacy to the enterprise of drawing on psychology as a source of realistic assumptions about economic agents. But the founding text of behavioral economics was the first article in which Thaler (1980) presented a series of vignettes that challenged fundamental tenets of consumer theory. And the respectability that

behavioral economics now enjoys within the discipline was secured, I believe, by some important discoveries Dick made in what is now called behavioral finance, and by the series of "Anomalies" columns that he published in every issue of the Journal of Economic Perspectives from 1987 to 1990." (Kahneman 2002)

Behavioral economics was championed by academics with attractive social and intellectual traits.

- "While Amos was alive, a well-known joke among psychologists was that he made possible a one-item IQ test: the sooner you realized he was smarter than you, the smarter you were." (Thaler 2015: xii)
- "Amos Tversky [...] engaged and captured the friendship of the economics profession, a process made easier by his charm and extreme open-mindedness. Possessed of a brilliant mind, strong mathematical skills, and keen insights into economics, he was well equipped to challenge that discipline. [...] if he erred, it was in the modesty of his claims. [...] Though Tversky's results often questioned basic assumptions, he was neither a scold nor a proselytizer. He won adherents through the strength of his results, which were simply presented and whittled down to essentials." (Laibson & Zeckhauser 1998: 8)

Behavioral economists didn't always spell out the more controversial implications.

- "I realized only recently how fortunate we were not to have aimed deliberately at the large target we happened to hit. If we had intended the article as a challenge to the rational model, we would have written it differently, and the challenge would have been less effective... we offered a progress report on our study of judgment under uncertainty, which included much solid evidence. All inferences about human rationality were drawn by the readers themselves." (Kahneman 2002)

Testing the factors

- For the distinction between the 'old' and the 'new' behavioral economics, see Earl 1988; Sent 2004; Angner & Loewenstein 2012.

- The existence of two different “behavioral economics” makes it a particularly instructive case study, since the old behavioral economics can be regarded as the control group for testing hypotheses about the new behavioral economics. As Sent writes, "whereas old behavioral economics never really caught on, new behavioral economists are the rising stars of the profession. So what changed?" (2004: 750)
- Old behavioral economics
    - Consisted chiefly of four groups of researchers. "What these approaches shared was a dismissal of the mainstream focus on profit and utility maximization and equilibrium as well as an effort to develop an alternative… using insights from (cognitive) psychology" (Sent 2004: 741-2)
        - First group
            - Group of researchers at Carnegie focusing on bounded rationality, satisficing, and simulations.
            - Richard Cyert, James March, Herbert Simon.
            - Much of this work sponsored by the Ford Foundation and the Office of Naval Research.
        - Second group
            - Group of researchers at Michigan focusing on attitude research and psychological economics.
            - Led by George Katona.
        - Third group
            - Group of researchers at Oxford focusing on case studies, uncertainty and coordination.
            - P. W. S. Andrews, D. M. Lamberton, H. Malmgren, J. Marschak, G. B. Richardson, G. K. S. Shackle.
        - Fourth group

        - Group of researchers at Stirling focusing on eclecticism an integration.
        - Neil Kay, Brian Loasby, Richard Shaw, John Sutton, Andrew Tylecote, Peter Earl.
    - There wasn't much communication between the old and the new behavioral economics, or at least not between its respective foremost proponents: Simon and Kahneman & Tversky.
        - Simon "is not mentioned in Kahneman and Tversky's research of the early 1970s." (Haukelom 2012: 807)
        - Simon's 'Behavioral economics' entry in the 1987 *Palgrave Dictionary of Economics* doesn't cite Kahneman & Tversky.
        - Simon's autobiography, *Models of my life* (MIT Press, 1996), doesn't once mention either Kahneman or Tversky.
        - The case for regarding the old behavioral economics as a control group for the new would be weakened if the latter was just as a continuation of the former. The fact that there was little communication between the two dispels this potential objection.
    - Why did the old behavioral economics failed?
        - "Partly due to its explicit efforts to distance itself from the mainstream, old behavioral economics never caught on in economics "proper"." (Sent 2004: 742)
            - In the final pages of his autobiography, Herbert Simon poignantly notes that "My economist friends have long since given up on me, consigning me to psychology or some other distant wasteland." (385)
        - Simon's personal characteristics.
            - Simon was an eccentric figure, very different from Kahneman and Tversky. He strikes me as a kind of lone

contrarian with poor social skills, similar to Eric Drexler, and these similarities may explain why both largely failed to persuade their peers (Muehlhauser 2017).

- There appears to be a recurring discrepancy between the importance of Simon's contributions to various fields and the impact that he had on those fields, confirming the hypothesis that there's something about Simon that explains in part why the old behavioral economics didn't succeed. "This is symptomatic for Simon's relative lack of lasting impact on any of the disciplinary domains through which he passed during his career. For instance, despite his criticism of the theoretical outlook in political science and management theory, Simon has not contributed extensive empirical studies. Despite his pathbreaking work on the serial symbol-processing hypothesis in cognitive psychology and artificial intelligence, Simon's contributions are rather outdated in the face of the current focus on parallelism and connectionism." (Sent 2004: 750)
- "Starting off in political science and then moving through several disciplinary domains such as management theory, cognitive psychology, artificial intelligence, and economics, a historian might observe that Simon never quite finished what he started." (Sent 2005: 230)
- Simon is said to have been "fiercely anti-disciplinary" (Angner & Loewenstein 2012: 655) and is quoted as having said that "If you see any one of these disciplines dominating you... you

join the opposition and fight it for a while." (Augier & March 2004: 4)

        - "Traditional economists disliked or ignored Simon's research, and when he won the Nobel in 1978, many in the field were very unhappy about it." (Lambert 2006)

- The time wasn't right.

    - "Herbert Simon, who coined the term "bounded rationality" in the 1950s, thought theories of individuals in economics should resemble theories in cognitive psychology, which specify algorithms or detailed mechanisms by which decisions are reached. Economists never took up this suggestion with any vigor, perhaps because Simon's suggestion came just as economists were finding ways to characterize economic decisions and equilibria in unusually elegant mathematical terms. The elegant mathematics left no room for messier cognitive theories." (Camerer 1999a: 1)

- Unlike Kahneman & Tversky, Simon didn't emphasize that deviations from rationality were systematic rather than random.

    - "A forerunner of Kahneman and Tversky was Herbert Simon, a polymath academic who spent most of his career at Carnegie Mellon University. Simon was well known in nearly every field of social science, including economics, political science, artificial intelligence, and organizational theory, but most germane to this book, he wrote about what he called "bounded rationality" well before Kahneman and Tversky came along. In saying that people have bounded rationality, Simon meant that they lack the cognitive ability to solve complex problems, which is obviously true. Yet,

although he received a Nobel Prize in economics, unfortunately I think it is fair to say that he had little impact on the economics profession. I believe many economists ignored Simon because it was too easy to brush aside bounded rationality as a "true but unimportant" concept. Economists were fine with the idea that their models were imprecise and that the predictions of those models would contain error. In the statistical models used by economists, this is handled simply by adding what is called an "error term to the equation... as long as the errors are random—that is, the model's predictions are too high or too low with equal frequency—then all is well. The errors cancel each other out. This was economists' reasoning to justify why the errors produced by bounded rationality could safely be ignored. Kahneman and Tversky were waving a big red flag that said these errors were not random." (Thaler 2015: 23-24)

        - "But the new behavioral economics program was also understood to move beyond Simon's earlier criticisms of neoclassical economics, by focusing on the systematic distortions of Kahneman and Tversky rather than on the random limits on rational decision making of Simon." (Heukelom 2012: 273)

- 'Bounded rationality' didn't offer concrete predictions.

    - "With prospect theory, Kahneman and Tversky set out to offer an alternative to expected utility theory that had no pretense of being a useful guide to rational choice; instead, it would be a good prediction of the actual choices real people make... Although this seems like a logical step to take, it is not one that economists had ever really embraced. Simon had coined the term "bounded rationality," but had not done much fleshing

out of how boundedly rational people differ from fully rational ones." (Thaler 2015: 29)

        - "According to Simon, Wanner's new program took "too seriously the premises of contemporary economic methodology that theories ('models') come first and empirical work afterwards" (Simon's letter to Wanner, 6 January, 1986, RAC). In addition, Simon noted that following his own work of the late 1950s a "considerable body of empirical work" (ibid) had already been built. The problem was not that the empirical work was not there, but that economists had not noticed it, as "mainline economists continue to ignore vast bodies of relevant evidence in their preferred pursuit of armchair model building" (ibid)." (Heukelom 2012: 275-276)

- New behavioral economics
    - Distinctive features
        - Three phases (Angner & Loewenstein 2012: 641)
            - "The first phase, which we will argue began in 1980, involved identifying anomalies—commonly observed economic phenomena that were inconsistent with standard theory—and explaining them in relatively loose psychological terms."
            - "The second, which began approximately a decade later, incorporated behavioral assumptions into increasingly sophisticated, mathematically rigorous models of economic phenomena at both the micro and the macro levels."
            - "The third phase, once again unfolding approximately a decade later, has involved the systematic application of behavioral economics to issues of public policy."
        - Thaler also recognizes roughly those three phases (2015: 307)

        - "By the mid-1990s, behavioral economists had two primary goals. The first was empirical: finding and documenting anomalies, both in individual and firm behavior and in market prices. The second was developing theory. Economists were not going to take the field seriously until it had formal mathematical models that could incorporate the additional findings from psychology... But there was a third goal lurking in the background: could we use behavioral economics to make the world a better place?"

- Other things to consider
    - Check the degree to which behavioral economics relied on what Muehlhauser calls the "obvious" methods of building up a young field of research: "fund workshops, conferences, fellowships, courses, professorships, centers, requests for proposals, etc." (2017)
    - Consider how behavioral economics does along the dimensions Muehlhauser identifies: "(1) primary sources of funding (e.g. large philanthropists, many small donors, governments, companies), (2) whether engaged philanthropists were “active” or “passive” in their funding strategy, and (3) how much the growth of the field can be attributed to endogenous factors (e.g. explicit movement-building work) vs. exogenous factors (e.g. changing geopolitical conditions)." (2017)
    - Check to what extent did advocates of behavioral economics the opposite of cryonics advocates:
        - "In the case of cryonics and molecular nanotechnology, plausibly growth-stunting adversarial dynamics arose between advocates of these young fields and the scientists in adjacent fields (cryobiology and chemistry, respectively). These adversarial dynamics seem to have arisen, in part, due to the young fields’ early focus on popular outreach prior to doing much scientific or

technical work, and their disparagement of those in adjacent fields." (Muehlhauser 2017)

- Explore the parallels in the rise of the conservative legal movement and behavioral economics.
    - "A small group of funders of the conservative legal movement managed to critique their own (joint) strategy, change course, and succeed as a result" (Muehlhauser 2017)
    - Teles's book seems to be the canonical source.

Appendix: Timeline of key events in the history of behavioral economics

The timeline below is primarily based on Sent 2004, Bettany 2011 and Cartwright 2014.

- 1944. von Neumann & Morgenstern, *Theory of games and economic behavior*
- 1948. Chamberlin, 'An experimental imperfect market'.
- 1951. Savage, 'The theory of statistical decisions'
- 1953. Friedman, 'The methodology of positive economics'.
    - This highly influential paper argued that theories should be judged exclusively in terms of their predictive accuracy, irrespective of the plausibility of their assumptions. This insulated economics from the criticism that its assumptions were psychologically implausible.
- 1955. Simon, 'A behavioral model of rational choice'.
- 1961. Muth, 'Rational expectations and the theory of price movements'.
- 1962. Smith, 'An experimental study of competitive market behavior'.
- 1963. Samuelson, 'Risk and uncertainty: A fallacy of large numbers'
- 1963. Weintraub, 'On speculative prices and random walks'.

- 1964. Sharpe, 'Capital asset prices'.
- 1966. Fama & Blume, 'Filter rules and stock-market trading'.
- 1966. Niederhoffer, 'A new look at clustering of stock prices'.
- 1968. Phelps & Pollak, 'On second-best national saving and game-equilibrium growth'.
- 1970. Lichtenstein & Slovic, 'Reversals of preference between bids and choices in gambling decisions'.
- 1970. Stevenson & Bear, 'Commodity futures'.
- 1974. Easterlin, 'Does economic growth improve the human lot: some empirical evidence'.
- 1974. Tversky & Kahneman, 'Judgement under uncertainty'.
- 1974. Lease, Lewellen & Schlarbaum, 'The individual investor'.
- 1976. Cornell & Dietrich, 'The efficiency of the market for foreign exchange floating exchange rates'.
- 1976. Fishburn, 'Unbounded utility functions in expected utility theory'.
- 1977. Lease, Lewellen & Schlarbaum, 'Patterns of investment strategy and behavior among individual investors'.
- 1977. Miller, 'Risk, uncertainty, and divergence of opinion'.
- 1978. Cornell & Dietrich, 'The efficiency of the market for foreign exchange under floating exchange rates'.
- 1978. Herbert Simon wins Nobel Prize in economics "for his pioneering research into the decision-making process within economic organizations'.
- 1979. Kahneman & Tversky, 'Prospect theory: an analysis of decision making under risk'.
- 1980. Grether, 'Bayes rule as a descriptive model'.
- 1980. *Journal of Economic Behavior and Organization* launched.

- 1981. Kahneman & Tversky, 'The framing of decisions and the psychology of choice'.
- 1981. *Journal of Economic Psychology* launched.
- 1982. Society for the Advancement of Behavioral Economics founded.
- 1982. Guth, Schmittberger & Schwarze, 'An experimental analysis of ultimatum bargaining'.
- 1982. Reinganum, 'A direct test of Rolll's conjecture on the firm size effect'.
- 1982. Hsieh & Kulatilaka, 'Rational expectations and risk premia in forward markets'.
- 1982. Loomes & Sugden, 'Regret theory'.
- 1983. Thaler, 'Related disciplines'.
- 1983. Hepburn & Locksley, 'Subjective awareness of stereotyping'.
- 1984. Behavioral economics program launched.
- 1984. First Annual Conference on Behavioral Economics held.
- 1984. Hensher, 'Achieving representativeness of the observable component of the indirect utility function in logit choice models'.
- 1985. The Behavioral Foundations of Economic Theory conference held.
- 1985. Thaler, 'Mental accounting and consumer choice'.
- 1985. Schultz, 'Personal income taxes and the January effect'.
- 1985. De Bondt & Thaler, 'Does the market overreact?'
- 1985. Russell & Thaler, 'The relevance of quasi rationality in competitive markets'.
- 1986. Gilad & Kaish, *Handbook of behavioral economics*.
- 1986. Einhorn & Hogarth, 'Decision making under ambiguity'.
- 1986. Tversky & Kahneman, 'Rational choice and the framing of decisions.

- 1986. Sweeney, 'Beating the foreign exchange market'.
- 1986. Black, 'Noise'.
- 1986. Campbell, 'Rationality and utility from the standpoint of evolutionary biology'.
- 1986. Gould, 'Is the rational expectations hypothesis enough?
- 1986. Kleidon, 'Anomalies in financial economics'.
- 1987. Green & Kagel, *Advances in behavioral economics*.
- 1987. Atchison, Butler & Simonds, 'Nonsynchronous security trading and market index autocorrelation'.
- 1987. Akerlof & Yellen, 'Rational models of irrational behavior'.
- 1987. Jones, Pearce & Wilson, 'Can tax-loss selling explain the January effect?
- 1987. De Bondt & Thaler, 'Further evidence on investor overreaction and stock market seasonality'.
- 1988. Earl, *Behavioral economics*.
- 1988. Smith, Suchanek & Williams, 'Bubbles, crashes and endogenous expectations in experimental spot asset markets'.
- 1988. Sweeney, 'Some new filter rule tests'.
- 1988. Conrad & Kaul, 'Time-variation in expected returns'.
- 1988. Nejat, 'The January effect and aggregate insider trading'.
- 1988. Trueman, 'A theory of noise trading in securities markets'.
- 1988. Fama & French, 'Permanent and temporary components of stock prices'.
- 1988. Gandar, 'Testing rationality in the point spread betting market'.
- 1988. Conrad and kaul, 'Mean reversion in short-horizon expected returns'.

- 1988. Coxand & Epstein, 'Preference reversals without the independence axiom'.
- 1992. Behavioral economics program terminated.
- 1992. Behavioral Economics Roundtable created.
- 1993. Gode & Sunder, 'Allocative efficiency of markets with zero-intelligence traders: markets as a partial substitute for individual rationality'.
- 1993. Rabin, 'Incorporating fairness into game theory and economics'.
- 1994. Harsanyi, Nash & Selten win Nobel Prize in economics 'for their pioneering analysis of equilibria in the theory of non-cooperative games'.
- 1995. Kagel & Roth, *Handbook of experimental economics*.
- 1998. Rabin, 'Psychology and economics'.
    - "Because psychology systematically explores human judgment, behavior, and well-being, it can teach us important facts about how humans differ from the way they are traditionally described by economists." (11)
- 1999. Andrei Shleifer receives John Bates Clark medal for his work in behavioral finance.
- 2000. Matthew Rabin awarded MacArthur Fellowship.
- 2001. Rabin receives John Bates Clark medal for his work in behavioral economics.
- 2001. Akerlof, Spence and Stiglitz win Nobel Prize in economics for their work in behavioral macroeconomics.
- 2002. Kahneman and Smith win Nobel Prize in economics "for having integrated insights from psychological research into economic science" and "for having established laboratory experiments as a tool in empirical economic analysis", respectively.

- 2003. Sendhil Mullainathan awarded MacArthur Fellowship for his work in behavioral economics.
- 2004. Henrich et al, *Foundations of Human Sociality*.
- 2004. Camerer, Loewenstein & Rabin, *Advances in Behavioral Economics*.
- 2005. Aumann, Schelling win Nobel Prize in economics.
- 2009. Elinor Ostrom wins Nobel Prize in economics "For her analysis of economic governance, especially the commons."
- 2009. Thaler & Sunstein, *Nudge*.
- 2012. Alvin Roth wins Nobel Prize in economics "for the theory of stable allocations and the practice of market design."
- 2013. Robert Shiller wins Nobel Prize in economics.
- 2015. Thaler, *Misbehaving*.

Bibliography

The publications I have found most valuable are singled out with a star (★).

★ Angner & Loewenstein (2012) Behavioral economics

An overview of behavioral economics, covering the nature and origins of behavioral economics as a field, its main results and their interpretation, the methods used by its practitioners, its relationship to traditional economics as well as to other emerging subdisciplines, and some of its philosophical and methodological underpinnings.

Baddeley (2017) *Behavioral economics: a very short introduction*

A basic introduction.

Bettany (2011) A history of behavioural finance in published research: 1944 - 1988

A timeline of key publications in the field.

Bruni & Sugden (2007) The road not taken: How psychology was removed from economics, and how it might be brought back

Traces the history of Pareto's attempt to expunge psychology from economics and the behavioral economists' more recent attempts to reintroduce it.

Camerer (1999a) Behavioral economics

A very short introduction to behavioral economics.

Camerer (1999b) Behavioral economics

Another introduction.

Camerer & Loewenstein (2004) Behavioral economics: past, present, future

An introduction to the approach and methods of behavioral economics, and to some of its main findings, applications and promising new directions. Has a brief section on 'the historical context of behavioral economics' (pp. 5-7)

Cartwright (2014) Behavioral economics timeline

A timeline of key events.

Geiger (2016) Behavioural economics and economic policy: a comparative study of recent trends

Geiger (2017) The rise of behavioral economics: a quantitative assessment

Uses bibliometrics to quantify the influence of behavioral economics.

Gino (2017) The rise of behavioral economics and its influence on organizations

A brief overview of behavioral economics and its influence.

Hargreaves Heap & Parikh (2005) The diffusion of ideas in the academy: a quantitative illustration from economics

Documents the rise of experimental methods in economics since the 1980s, as measured by page counts in leading econ journals.

Hargreaves Heap (2013) What is the meaning of behavioral economics?

See section 6 on 'The profession of economics' (pp. 996-998).

Heukelom (2012) Three explanations for the Kahneman-Tversky programme of the 1970s

Argues that Kahneman and Tversky were successful because they confined their criticism to positive economic theory while accepting its normative validity;

because they employed clever experiments unavailable to earlier experimental psychologists; and because they used examples with high intuitive appeal. Section 5 (pp. 814-822) is particularly useful.

Heukelom (2013) A sense of mission: The Alfred P. Sloan Sand Russell Sage Foundations Behavioral Economics Program, 1984-1992

A detailed account of the role played by the Sloan and Sage Foundations in the emergence of behavioral economics as an academic subdiscipline.

Heukelom (2015) *Behavioral economics: a history*

See ch. , sect. 5 ('Explaining the success of the Kahneman-Tversky perspective'). Based on Heukelom 2012.

Hogarth & Reder (1986) *Rational choice: the contrast between economics and psychology*

A seminal anthology.

Hosseini (2003) The arrival of behavioral economics: from Michigan, or the Carnegie School in the 1950s and the early 1960s?

Kahneman (2002) Autobiography

An autobiographical essay Kahneman wrote upon receiving the Nobel Memorial Prize in Economics.

Laibson & List (2015) Principles of (behavioral) economics

Introduces six modular principles that can be used to teach behavioral economics.

Laibson & Zeckhauser (1998) Amos Tversky and the ascent of behavioral economics

An overview of Tversky's contributions to economics and an attempt to quantify their impact using citation analysis.

Lambert (2006) The marketplace of perceptions

Popular article.

Lewis (2017) *The undoing project*

A well-written popular account of the friendship between Kahneman and Tversky.

Miłaszewicz (2016) Origins of experimental economics

Muehlhauser (2017) Some case studies in early field growth

Mullainathan & Thaler (2000) Behavioral economics

Rabin (2002) A perspective on psychology and economics
An overview of the main developments in behavioral economics and its reception among professional economists.

Rehman (2017) Historical context of behavioral economics
Very muddled. Not recommended.

Roth (1995) Introduction to experimental economics

Russell Sage Foundation (2017) History of the behavioral economics program
A brief account of the role played by the Russell Sage Foundation in growing the field of behavioral economics.

★ Sent (2004) Behavioural economics: how psychology made its (limited) way back into economics
An account of how behavioral economics became mainstream. Very useful.

Sent (2005) Simplifying Herbert Simon

Simon (1987) Behavioural economics.
An entry in the leading reference work in economics by one of the foremost representatives of the "old behavioral economics".

★ Thaler (2015) *Misbehaving: the making of behavioral economics*
A popular history of behavioral economics by one of its leading figures.

Wikipedia (2017) Behavioral economics
Basic introduction.

Wolfers (2016) A conversation with Justin Wolfers

A GiveWell conversation between Alexander Berger and Justin Wolfers about opportunities for philanthropy in macroeconomics.