Abstract: Behavioral economics has made its mark by bringing under intense scrutiny the limitations of individuals’ cognitive abilities. The conclusions of such inquiries call into question results from standard economic modeling dependent on assumptions of strong epistemic rationality. Most conspicuously, behavioral economists have introduced a host of new potential causes for market failures. F. A. Hayek likewise famously questioned the cognitive abilities of real world actors, but drew radically different conclusions. We argue that, for Hayek, market institutions rather than individual agents bear the primary cognitive burden in coordinating economic activity. Gaps in individual rationality thus fail to provide adequate grounds for positing market failures. Vernon Smith’s body of work, with its distinction between ecological and constructivist rationality, provides powerful support for the Hayekian position on which it draws its inspiration.
Introduction

G.K. Chesterton describes original sin as “the only part of Christian theology which can really be proved.” He goes on to mock those who deny its existence while clinging to a belief in God:

If it be true (as it certainly is) that a man can feel exquisite happiness in skinning a cat, then the religious philosopher can only draw one of two deductions. He must either deny the existence of God, as all atheists do; or he must deny the present union between God and man, as all Christians do. The new theologians seem to think it a highly rationalistic solution to deny the cat. (Chesterton 1908, Ch. II)

Chesterton’s argument is straightforward: given the obvious reality of evil in human affairs, the reasonable conclusion must be either that there is no supreme good (such as God) or that man is somehow separated from it. He claims that the new theology of his day is confused, positing a perfect good but denying what would explain the manifest gap between our experience and that ideal. The two intellectually serious alternatives, he argues, are atheism on the one hand or a theism that acknowledge sin on the other.

This essay argues that an analogous confusion grips much of the past century’s economics, and has generated a false conundrum that behavioral economics purports to solve. But whereas Chesterton was concerned with the problem of sin, the object of our inquiry is neither theological nor moral but epistemic.

Coordination was a central concern of classical economics. To what extent does the free play of market activity generate orderly outcomes? On the one hand, Adam Smith argued that the invisible hand of the market leads individuals effectively cooperate with unknown others. On the other hand, Marx and Malthus painted grim pictures of chaotic capitalist crises. Where Bastiat marveled that Paris gets fed, “without co-operative planning or mutual arrangements,” (Bastiat 1845, I.18.12) Marx averred that business cycles operate with ironclad regularity: “As the heavenly bodies, once thrown into a certain definite motion, always repeat this, so is it with social production as soon as it is once thrown into this movement of alternate expansion and contraction.” (Marx 1867, Ch. 25, Sec. 4)

Coordination means, for our purposes, that individuals’ decentralized decisions are compatible with or adjusted to the actions of others. Adam Smith’s invisible hand is the profession’s central metaphor about coordination. Discoordination could mean either the disruption of economic activity or merely unrealized gains from trade. But in the late 19th century and on through the 20th, the puzzle of coordination largely disappeared from theoretical economics. Coordination was taken to be automatic, largely implicitly and for analytic reasons. The result was the banishment of error from economic theory. Individual agents came to be depicted as “lightning calculators of pleasure and pain” (Veblen 1898, p. 389) capable of identifying and exploiting all possibilities for profit with no cognitive shortcuts or mnemonic devices necessary. Economists, just like Chesterton’s rationalistic new theologians, denied the cat.

For the past few decades, behavioral economists have been in the cat wrangling business. Taking the hyper-rational model of economic man as a point of reference, they have
identified a wide range of biases that put some distance between *homo economicus* and *homo sapiens*. On one level this a salutary and sorely need corrective. Just as Chesterton posits that any theology that would deny the obvious reality of evil is fundamentally flawed, any economics that would deny the existence of error is likewise distorted.

But there is a strong tendency in extant behavioral economics that we find troubling. In the mainstream economics behavioralists challenge, individual epistemic rationality does the heavy lifting in coordinating market activity. People are smart and figure out how to best organize economic endeavors. It is often asserted, then, that if *homo sapiens* is not as rational as *homo economicus*, markets must fail to generate order to some extent.

Part I of this essay situates behavioral economics in the market failure literature. Obviously this is but one side of behavioral economics, whose origins also closely connect with both experimental economics and economic psychology. Nonetheless, we argue that the idea of market failure is critical to the both the development and use of behavioral ideas. If markets work because hypothetical agents are smart, markets must fail because real people are stupid. This deployment of behavioral economics has become especially prominent in the wake of the “Great Recession” of 2008. Behavioral models are juxtaposed with those of hyper-rational agents which seem to rule out the possibility of such a crisis (c.f. Akerlof and Shiller 2009, De Grauwe 2010).

This form of argument is rather like Chesterton’s atheists appealing to skinned cats as proof of divine fictitiousness. Theories that contradict obvious features of the world are easy to challenge (though not always easy to unseat). But to cast doubt on a conclusion rather than a particular theory requires grappling with more serious theories that hold the same conclusion. Error is obvious. The relevant puzzle for economists is whether and under what conditions coordination is possible, not whether error exists.

Part II of this essay identifies in F. A. Hayek’s work an appreciation for this puzzle. Hayek is outspoken on the stark limitations of individual cognition. However, building on the work of Mises, he makes a powerful case that markets nonetheless effectively coordinate economic activity. Markets work because of market institutions—property, money prices, and profit and loss signals—not because individuals are lightning calculators. If Hayek is right, the existence of error does not tell us whether markets fail.

Part III summarizes the argument that understanding the nature of market coordination requires an epistemic and institutional turn in economics, rather than an exclusive focus on behavioral assumptions concerning our cognitive limits. We argue that the institutional analysis aspect of the argument concerning market coordination in the presence of imperfect individuals was clouded by the previous use of the simplifying behavioral assumptions that conflated rational action with correct action as if taken by agents with tremendous cognitive capacity. We thus explain how Hayekian economics steers a path clear of both neoclassical economics and modern behavioral economics by

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1 Fully aware that “rational” and “rationality” are contested terms, in this essay we use “rational” to mean epistemic rationality, especially of the strong neoclassical variety.
taking the epistemic and institutional turn that emphasizes the contextual nature of our knowledge and interactions.

I. Market Failure and Behavioral Economics

In the middle decades of the 20th century, Adam Smith’s invisible hand—the idea that markets coordinate economic activity such that the pursuit of individual interests promotes the broader interests of society—came to be interpreted in terms of the welfare properties of an equilibrium state (Lerner 1934b, p. 162). The invisible hand is said to be functioning when some market equilibrium corresponds to a Pareto efficient allocation. The properties of such correspondence were laid out over the course of the 1930s and 1940s: market prices would equal the marginal costs of production (Lerner 1934b, Lange 1942) and marginal rates of substitution would be equalized for both consumption and production decisions (Arrow 1939). This line of work culminated in Kenneth Arrow’s work establishing both the optimality (ibid.) and the existence (Arrow and Debreu, 1954) of a vector of prices that would clear markets in any number of goods. That is: for any number of goods traded produced and traded by any number of individuals, there is some set of prices at which all markets will clear and social welfare will be maximized.

The market failure literature springs from this intellectual milieu. Having established a powerful result in favor of the market as a form of economic organization, the economics profession spent the next few decades hunting for exceptions. This can partly be understood as a natural sociological response for any scientific community. One does not impress a Newtonian physicist by pointing out that gravity pulls apples towards the earth. Similarly, an economist looking to make his name would do better to find an exception to a general finding rather than a confirmation of it. But more concretely, the arguments of Arrow, Lange, Lerner, and others predicated the efficiency of markets on specific and rather strict conditions.

Francis Bator, in his classic programmatic statement on market failure, writes:

> It is the central theorem of modern welfare economics that under certain strong assumptions about technology, tastes, and producers’ motivations, the equilibrium conditions which characterize a system of competitive markets will exactly correspond to the requirements of Paretoian efficiency. (Bator 1958, p. 353)

This line of reasoning holds that the “regime of signals, rules and built-in sanctions which defines a price-market system” (ibid. p. 352) only functions within these narrow bounds. The analysis of markets’ efficiency, then, is bounded by familiar assumptions like convexity, the independence of tastes, infinite divisibility, and constant returns to scale.

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2 This interpretation continues to the present day, from economists both more (Landsburg 1993, Ch. 8) and less (Stiglitz 1991) friendly to markets.

3 Cowen (1998) collects the classic articles on the theory of market failure.
If and only if these conditions are upheld, do we reach the set of prices, wages, and rents that harmonizes the demands of Paretian efficiency with the decentralized decisions of market actors (*ibid.* pp. 354-55). Put concisely, “if prices are determined by market forces, they will not correspond to a Paretian maximum unless self-policing perfect competition obtains in all markets” (*ibid.* p. 354).

Much ink has been spilled elaborating on the possibilities for deviation from these conditions. By slackening any of them, markets fall short of their welfare maximum and thus are said to fail. Bator surveys these possibilities at length; if firms face external economies like increasing returns to scale, lumpy inputs (pp. 358-363), institutional or legal failures (pp. 364-365), technical limitations (pp. 365-369), or public good/bad ‘spillovers’ (pp. 369-372), prices fail to reconcile total welfare with decentralized decision making. The ‘invisible hand’ is nowhere to be found.

Market failure arguments thus follow a simple syllogism:

1) Markets maximize welfare under stringent conditions including perfect competition, an absence of externalities, constant returns to scale, etc.

2) One or more of those conditions do not hold in a given market.

3) That market thus fails to maximize welfare.⁴

Arrow’s famous treatment of the healthcare market, for example, follows this basic form. Arrow clearly asserts his standard: if “the actual market differs significantly from the competitive model, or if the assumptions of the two optimality theorems are not fulfilled, the separation of allocative and distributional procedures becomes, in most cases, impossible” (p. 943, Arrow). Arrow then outlines the three preconditions he considers for the healthcare market: the existence of competitive equilibrium, the marketability of all relevant goods and services, and non-increasing returns (p. 944). The remainder of his analysis is a detailed empirical description of the real-life conditions of the American medical care market (pp. 948-967).

Specifically, Arrow is concerned with the ways in which the real market deviates from these three strong assumptions. Unsurprisingly, “the operations of the actual medical-care market” fall short of “those of an ideal system in which not only the usual commodities and services but also insurance policies against all conceivable risks are available” (p. 958). The preconditions of perfect competition do not obtain, and therefore markets fail.

Bator goes so far as to claim that even the well-trodden exercises in market failure due to externalities, economies of scale, and the like might paint too rosy a picture of market efficiency:

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⁴ Though several decades old, the basic structure of these market failure arguments remains identical today. Virtually all contemporary economics textbooks take this approach to market failure (e.g. Mankiw 2008, p. 156).
Many things in the real world violate such correspondence [of market performance with maximum total welfare]: imperfect information, inertia and resistance to change, the infeasibility of costless lump-sum taxes, businessmen’s desire for a ‘quiet life,’ uncertainty and inconsistent expectations, the vagaries of aggregate demand etc. (p. 36).

Bator’s analysis is unconcerned with the troubles of non-stationary and thus uncertain, ‘real life’ economic activity. Nonetheless, the standard has been raised: the proper functioning of markets demands that these rigorous assumptions hold. But Bator’s choice of the ‘real-world’ conditions muddying economic analysis is telling: information deficiencies, stubborn resistance to change, the philosophical desire for the simple life, uncertainty, and inconsistency are all troubles plaguing man’s inner realm.

Alongside traditional assumptions about external factors such as technology or tastes in welfare economics, are epistemic assumptions about the knowledge and cognitive abilities of market actors. The rising field of behavioral economics has leaned on the epistemic requirements of market efficiency just as past economists leaned on the external requirements.

Behavioral economists have picked up where those like Bator or Arrow left off. The subject for their research is not – as Bator was quick to note – the lightning calculations of static *homo economicus*, but psychological man: the dynamic market actor rife with foibles, biases, worries, uncertainties, and blind spots. Renowned behavioral economist Richard Thaler summarizes the field’s challenge to standard economics as follows:

> The problem seems to be that while economists have gotten increasingly sophisticated and clever, consumers have remained decidedly human … at an NBER conference a couple years ago I explained the difference between my models and [neoclassicist] Robert Barro’s by saying that he assumes the agents in his model are as smart as he is, while I portray people as being as dumb as I am. Barro agreed with this assessment. (Thaler 1990, p. 203)

It’s easy to see how this shift in assumptions can be case in the paradigm of market failure economics. The basic market failure syllogism carries over wholesale:

1) Markets maximize welfare under stringent *epistemic* conditions including apt probability estimation, stability of preferences, an absence of framing effects or internalities, etc.

2) One or more of those conditions do not hold in a given market *because individuals are less than fully rational*.

3) That market thus fails to maximize welfare.

Dan Ariely’s *Predictably Irrational*—arguably the most popular treatment of behavioral economics—opens with a criticism of ‘invisible hand’ explanations on just these grounds:
In conventional economics, the assumption that we are all rational implies that, in everyday life, we compute the value of all the options we face and then follow the best possible path of action. What if we make a mistake and do something irrational? Here, too, traditional economics has an answer: "market forces" will sweep down on us and swiftly set us back on the path of righteousness and rationality. On the basis of these assumptions, in fact, generations of economists since Adam Smith have been able to develop far-reaching conclusions about everything from taxation and health-care policies to the pricing of goods and services.

But, as you will see in this book, we are really far less rational than standard economic theory assumes. Moreover, these irrational behaviors of ours are neither random nor senseless. They are systematic, and since we repeat them again and again, predictable. So, wouldn't it make sense to modify standard economics, to move it away from naïve psychology (which often fails the tests of reason, introspection, and—most important—empirical scrutiny)? This is exactly what the emerging field of behavioral economics, and this book as a small part of that enterprise, is trying to accomplish. (Ariely 2009, p. xx)

Thaler formalizes his own challenges to neoclassical rationality in similar terms:

Economists generally attribute considerable rationality to the agents in their models. The recent popularity of rational expectations models is more an example of a general tendency than a radical departure. Since rationality is simply assumed, there is little in the literature to suggest what would happen if some agents were not rational. This is surprising in light of the accumulating evidence that supports Herbert Simon’s view that man should be considered at most bounded rational… We show that the knee-jerk reaction of some economists that competition will render irrationality irrelevant is apt only in very special cases, probably rarely observed in the real world” (Russell and Thaler 1985, p. 1071, emphasis in original)

Thaler surveys the findings of economists and psychologists like Daniel Kahneman and Amos Tversky to demonstrate systematic deviations from standard maximization procedures. He calls these decisions ‘quasi-rational’, since they are non-rational by the standards of traditional decision theory but systematic in nature. From this, he shows formally that the existence of markets “is not sufficient to eliminate the effect of quasi-rational behavior” (Russell and Thaler 1985, p. 1075; see also Kahneman, Kvetsch and Thaler 1991). This leads to deviation from competitive equilibrium, with the attendant welfare losses.

The structural similarity between concrete and epistemic ‘market failure’ arguments seems to have been somewhat overlooked. Indeed, the index to the latest New Palgrave Dictionary of Economics: Behavioral and Experimental Economics (Durlauf and Bloom 2010) contains no entry for ‘market failure’. Nonetheless, the rhetorical and logical form of traditional market failure arguments finds an easy home in the normative work of behavioral economists.
Dan Ariely likewise uses the theories of behavioral ‘anchoring’ and ‘arbitrary coherence’ to undermine standard arguments for the efficiency of free exchange. He uses evidence from the pearl trade, Starbucks, the housing market and experimental work to argue that supply and demand is an oversimplification of behavioral reality (Ariely 2009, pp. 25-38). While standard economic analysis holds as basic verity that voluntary exchanges are mutually beneficial, Ariely argues that demand for goods and exchanges of them are based on memories and psychological anchors that are “not at all a reflection of our true preferences or our level of demand” (ibid. p. 48).

For Ariely, such deviations from the standards of neoclassical rationality substantially undermine the economic case for free markets:

If we can't rely on the market forces of supply and demand to set optimal market prices, and we can't count on free-market mechanisms to help us maximize our utility, then we may need to look elsewhere. This is especially the case with society's essentials, such as health care, medicine, water, electricity, education, and other critical resources. If you accept the premise that market forces and free markets will not always regulate the market for the best, then you may find yourself among those who believe that the government (we hope a reasonable and thoughtful government) must play a larger role in regulating some market activities, even if this limits free enterprise. Yes, a free market based on supply, demand, and no friction would be the ideal if we were truly rational. Yet when we are not rational but irrational, policies should take this important factor into account (ibid. p. 50, emphasis added)

Government intervention in response to behaviorally induced market failures is indeed the punch line of the behavioral economics literature according to Ariely, as he readily admits in an interview on the field as a whole:

Interviewer: The whole market is acting against us in a way, so who is going to help us make the right decisions?

Ariely: You can think about the market economy in this way – almost nobody wants you to do something that is good for you in the long term. The incentive of everybody else is to do something that is good for them in the short term. It’s important that we as individuals understand this, and that we as individuals demand something better. I also think it’s important that we have regulators that understand these problems, and can help us.

Interviewer: Ultimately, is that what we’re talking about here – government regulation?

Ariely: Yes, it is.

(Roell and Ariely 2011, p. 3)
II. Markets and Minds: Hayek’s Approach

“Before we can explain why people commit mistakes, we must first explain why they should ever be right.” F.A. Hayek, “Economics and Knowledge”

For market failure economists, a market equilibrium produced by informed and rational agents is the analytic and normative benchmark for evaluating how well markets function. Behavioral economists have often operated in exactly this paradigm, using shortfalls from the steep cognitive prerequisites of competitive equilibrium models as a reason for crying “market failure.” These departures from mythic neoclassical rationality are not merely the basis of policy recommendations, but the very motivating force for a significant portion of the behavioral economics research paradigm. Behavioral economics often just is the study of how real world rationality falls short of the analytic baseline of the neoclassical tradition.

Hayek too contested the behavioral foundations of neoclassical economics. But Hayek was no behavioral economist, because he never took the perfect pre-coordination of competitive equilibrium to be the analytic baseline for economic inquiry. In fact, he goes so far as to argue that there is no economic problem in the pre-coordinated equilibrium world. Departures from a given outcome are no puzzle when the outcome is unobtainable. Rather, Hayek had a different puzzle in mind: “before we can explain why people commit mistakes, we must first explain why they should ever be right” (Hayek 1937, p. 34).

To understand how Hayek came to such a distinct vantage point, it is helpful to begin—as with most of his insights—with the socialist calculation debate. That debate was the crucible in which Hayek’s beliefs about the epistemics of markets were formed. Disputes about the comparative viability of private vs. public ownership go at least as far back as Plato and Aristotle. But such debates traditionally focused on questions of motivation or incentives. Systems are thought to stand or fall according to purity or selfishness of individual motivation.

Mises (1920), by contrast, shifts the argument in a fundamentally epistemic direction. He argues that, without market prices in the means of production, socialist planners would be unable to effectively coordinate an advanced division of labor. Exploiting the advantages of specialization requires knowledge of the opportunity costs of production. Market prices in producer goods facilitate acquiring such knowledge by enabling economic calculation. Without a common and cardinal denominator for heterogeneous capital goods there is no way to judge the relative cost of different production methods. Confronted with myriad combinatorial possibilities for different production methods across different goods, socialist planners would have no means of evaluating which resources should be used for which purposes.

The most forceful response to Mises’s argument was market socialism, whose appearance made the calculation debate into the fascinating historical episode that it is. Market socialists such as Oskar Lange (1936) and Abba Lerner (1934a) argued—from the perspective of neoclassical orthodoxy rather than Marxism or some other heterodox school—that socialist planners could effectively utilize fictitious “accounting prices” to
direct resources. They granted to Mises that prices were necessary for bare arithmetic calculation of the costs of production plans. They demurred, however, that prices need not arise from market exchange but could be set by a central planning board. Central planners would adjust those prices to shortages and surpluses as they manifested. Plant managers—the analog of capitalist entrepreneurs—would be instructed to act “as if” they were maximizing profits in a competitive market, mimicking the salutary qualities of a market competitive equilibrium.

The market socialist response is instructive on several margins. First, the emphasis of the market socialists—as with Arrow a few years later—is whether there exists some array of prices that would make all production and consumption plans possible, not the process out of which such coordination would arise. This fixed point serves as the baseline for gauging the performance of real-world economies. Second, it is by the cognitive prowess of the human mind that economic activity is coordinated. Again there is a parallel with Arrow’s model, in which individuals sign contracts to cover all possible states of the world (c.f. Arrow 1964). Whether by central planners or market agents, human cognition coordinates economic activity all the same.

Hayek’s seminal papers on the role of knowledge in economics (1937) and in the economy (1945) are essentially responses to the market socialists. The latter can be read as a response to the question: what makes market prices different from centrally planned prices? Hayek’s answer centers on the division of knowledge. Knowledge about the relative scarcities of the means of production is dispersed throughout the economy. This course of action is a problem of ignorance rather than one of raw intellectual ability, but the latter will constrain feasible solutions to the former. Effectively coordinating the dispersed knowledge of economic conditions requires a mechanism that agents with realistic cognitive abilities can utilize. Hayek argues that the free market price system allows individuals to utilize the dispersed knowledge about economic conditions without having to possess the knowledge themselves. Whereas collecting the knowledge centrally is impossible for several reasons, prices create a cognitive shortcut that makes detailed knowledge unnecessary in the first place.

For Hayek, market institutions—not individual human minds—bear most of the cognitive burden of coordinating economic activity. Those institutions are necessary in large part precisely because individuals have strictly limited cognitive capacity. From a Hayekian perspective, then, the simple behavioral syllogism concerning market failure moves far too quickly. That individuals make mistakes is insufficient to posit a coordination failure. Individual minds carry little cognitive weight in market activity in the first place. Without a serious investigation of the institutional coping mechanisms of real world

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5 Mises (1920, p.103) explicitly rules such a possibility out. The human mind, he argues, is not up to surveying and weighing all the different possibilities of production beyond the household level.

6 Lavoie (1985) characterizes the Mises-Hayek position as describing the “group intelligence” of market interaction rather than individual intelligence.
market agents, many if not most behavioral declarations of “market failure” must be deemed premature.

Vernon Smith’s extensive experimental research set out to test the “Hayek hypothesis” (Smith 1982)—that market institutions could coordinate the economic decisions of ignorant individuals—against the strong requirements of the neoclassical paradigm. Smith (2008, p. 102) frequently pits Hayek against Jevonsian and Walrasian treatments, in which market efficiency results if, and only if, the environment is characterized by large numbers of participants who possess complete information and treat price as a parameter. On the other hand, in Smith’s experiments the numbers were small, the participants lacked knowledge, and price was a variable of choice. However, even though the large number and price taking behavior conditions were absent, the market experiment resulted in the achievement of the competitive equilibrium after a few rounds of exchange. Smith’s work consistently bears out the poignancy of Hayek’s approach.

In his mature work, Smith distinguishes between ecological and constructivist rationality. Constructivist rationality treats the understanding of social systems as isomorphic to their design. There are indeed many designed features of the social world. The mistake of market failure theorists is to reduce the problem of economic organization to only one of constructivist rationality: to the extent that the behavior of market participants diverges from the prescriptions of good systems design, markets are said to fail. Ecological rationality, by contrast, deals with “adaptive human decision and with group processes of discovery in natural social environments” (ibid., p. 25). That is, ecological rationality involves both interpersonal interaction and the social environment, including institutions. Smith credits Hayek with insisting on the distinction between the two types of rationality (ibid.).

Beyond interactions between existing minds and existing market institutions, there is another dimension of ecological rationality: the habits of the mind itself. In Hayek’s philosophy of mind, rationality is as much a product of social evolution as of biological evolution. Institutions do not just interact with some latent epistemic powers but also shape those powers. Hayek explicitly applies this to entrepreneurs in the marketplace:

> Competition is as much a method for breeding certain types of mind as anything else: the very cast of thinking of the great entrepreneurs would not exist but for the environment in which they develop their gifts. The same innate capacity to think will take a wholly different turn according to the task it is set. (Hayek 1979, p. 76)

7 And we have not even addressed the problem of behavioral policy recommendations proffered on such grounds, which are likely made with even less rigor.

8 Mises anticipates this point decades earlier: “An entrepreneur deprived of his characteristic role in economic life ceases to be a business man. However much experience and routine he may bring to his new task he will still only be an official in it” (Mises 1922, p. 191).
This Hayekian contention likewise finds some support in the modern experimental literature. John List has conducted numerous field experiments in which he finds that expert traders do not suffer from some of the behavioral quirks of other experimental subjects (e.g., List 2006). Their experience has helped them overcome the biases novice traders. This is another important Hayekian point to keep in mind when judging the veracity of behavioral claims. Experiments performed on undergraduate students can be an invaluable source of comparative data about different rule regimes through careful use of treatments, and can illustrate the principles by which different markets might operate, as we argue below. But until one investigates the “cast of mind” of entrepreneurs in real market settings, positing a market failure is simply speculation.

Vernon Smith offers this summary:

We are left with Hayek’s critique [of equilibrium theory], his statement of the problem solved by decentralized pricing, and the experimental evidence supporting Hayekian efficiency in a wide variety of environments and institutions, but the theory showing how this works eludes articulation by means of the economist’s standard tool kit. (2008, 107)

We need a different tool kit.

**III. Ecological Rationality and Invisible Hands**

The central puzzle of political economy, for Hayek, is not whether errors can lead to discoordinated economic activity. They can. The reality of error stares any observer of the social world in the face whenever an enterprise goes under because an entrepreneur makes a bad guess. Entrepreneurial failures are like Chesterton’s skinned cats. Only a staunch prioritizing of the tools of economic modeling over the obvious features of the world could convince one that error is a puzzle. Hayek understands the real puzzle of economics to be how men—“in all their given variety and complexity, sometimes good and sometimes bad, sometimes intelligent and more often stupid” (Hayek 1948, p. 12)—produce economic order in the first place.

If social phenomena showed no order except insofar as they were consciously designed, there would indeed be no room for theoretical sciences of society and there would be, as is often argued, only problems of psychology. It is only insofar as some sort of order arises as a result of individual action but without being designed by any individual that a problem is raised which demands a theoretical explanation. (Hayek 1952, p. 69)

It is worthwhile to note the parallelism between economic theory and individual cognition common to both market socialists and contemporary mainstream models. Like Thaler’s characterization of Barro’s agents, Lange’s central planners use economic theory as a substitute for any interactive process of coordination. In both cases knowledge of the model corresponds to knowledge of what to do. It is no coincidence that the socialists in the calculation debate were the very thinkers who explicated the welfare properties of competitive market equilibrium. The hyper-rational models that behavioral economists
love to critique are, in fact, the “intellectual heirs” of Lange and Lerner’s models of central planning (De Grauwe 2010).

Skepticism about claims of market failure is only the beginning of a Hayekian critique of behavioral economics. The centrality of the competitive market process to the substance of market decision-making raises the specter of a more fundamental divergence between Hayek and behavioral economists. Competition, as Hayek explains, is a discovery procedure (Hayek 1968). Economical options are not simply given to the human mind. They are discovered through a rivalrous process of experimentation about what consumers (ultimately) are willing to pay for and what the cheapest way is to provide it.

What is forgotten is that the method which under given conditions is the cheapest is a thing which has to be discovered, and to be discovered anew, sometimes almost from day to day, by the entrepreneur, and that, in spite of the strong inducement, it is by no means regularly the established entrepreneur, the man in charge of the existing plant, who will discover what is the best method. (Hayek 1948, p.196)

To presume that this knowledge could exist apart from the process—knowledge of what the competitive equilibrium price “should be”—is precisely Hayek’s complaint against the market socialists (Hayek 1937). When individuals can have such immense planning abilities, the question of whether to organize economic activity by a planning board or by market prices is largely moot.

It is odd indeed to base a theory of markets on an economic anthropology in which the difference between markets and central planning is largely nominal. Likewise, behavioral economics defines itself in terms of an odd task: critiquing human rationality by a constructivist standard. This is not odd not because the limits of rationality should not be explored. They should. It is odd because it focuses on the wrong type of rationality. Ecological rationality is what drives markets. To the extent that it defines market coordination in terms of a constructivist neoclassical baseline, behavioral economics—like the welfare economics of both competitive equilibrium and market failure—misses the point entirely. Error is obvious. The puzzle is whether and to what extent human interaction generates institutions that cope with those errors and allow coordination.

The fundamental problem with behavioral economics is that it takes the mistaken baseline of traditional welfare economics as a starting point and standard. This problem can plague even behavioral economics that does not posit market failures. The ultimate

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9 Mises again anticipates this argument, having addressed the possibility of market socialism in his 1922 book which expands on his 1920 article. He points out that the market socialist argument of mimicking the equilibrium price is a solution ex hypothesi, since the question is what the price is (Mises 1922, 120-21).

10 The question of incentives for production remains, of course. But, in the absence of knowledge problems, incentive problems can potentially be solved by a clever enough institutional design (Martin forthcoming).
mischief begins with the identification of the invisible hand with the idealized properties of a static state combined with modeling techniques that assume away the process by which such a state may be reached or approximated. Mises and Hayek see the invisible hand instead in the process through time by which actions come to be better coordinated. The invisible hand of the market does not hold market agents in place, but spurs them to acts of entrepreneurial discovery that constitute a process of social learning (Holcombe 1999).

While this is a peculiarly Hayekian—that is to say, Austrian—way of putting it, this approach to the invisible hand is shared by other economists. Alchian, for instance, argues against the proto-behavioral economists of his time that “profit maximization” was not a guiding principle in human behavior, but instead a resultant of the evolutionary survivorship principle within the competitive market economy (Alchian 1950). Like Hayek, Alchian recognizes that the performance of the economic system is the joint product of (1) the institutional rules that govern social interaction, (2) the market environment as characterized by tastes, technology and resource availability, and (3) the behavior of the individual participants within the economy. It is a mistake to load the explanatory burden on only the last these three.

In an attempt to isolate the contribution of the various components that contribute to market efficiency, Gode and Sunder (1993) constructed a computer model with zero intelligence agents who face a budget constraint. In the market simulation, the random plays of the agents are disciplined by the hard budget constraint and the efficient solution emerges relatively quickly. The system is intelligent even when the participants within the system are not, provided that they operating within a specified rule environment. They state the implication of this sort of evidence for our purposes quite clearly:

> Economic models assume utility-maximizing agents to derive market equilibria and their welfare implications. Since such maximization is not always consistent with direct observations of individual behavior, some social scientists doubt the validity of the market-level implications of models based on the maximization assumption. Our results suggest that such maximization at the individual level is unnecessary for the extraction of surplus in aggregate. Adam Smith’s invisible hand may be more powerful than some may have thought… (Gode and Sunder 1993, 135-1936)

It may be objected that both the agent-based models of Gode and Sunder as well as the experiments of Vernon Smith and John List likewise compare the performance of economic agents (whether human or automata) to the properties of competitive equilibrium. They do. But our point is not that such a point of comparison is useless. First and most directly, the work of these experiments can be read as an immanent critique. They accept the standard put forward by behavioral economists and show that cognitively limited agents can still reach it. But this points to a deeper issue.

Experimental evidence can fail to replicate the subtle and tacit dimensions of market institutions that enable coordination in real-world exchange. They can identify what Hayek calls “explanations of the principle” by which a spontaneous order operates, but that is different from empirical evidence about the properties of this or that order.
Likewise, experiments can illuminate comparative features of different institutional regimes through careful treatments. But in themselves they cannot demonstrate the applicability of those institutional properties to real market institutions.

Hayek’s economics begins with the question of how man could ever be right. The analysis above suggests that answering this question requires delving into the institutionally embedded process of market exchange rather than into abstract models of individual cognition. If what we seek is a benchmark—whether normative or positive—for evaluating real world economies, it is a serious mistake to omit those very institutions. Perfect cognition renders institutions superfluous for coordination, so they were assumed away by several generations of economists. It is all the more important, then, that they be taken seriously when examining the importance of imperfect cognition.

Conclusion

Behavioral economics positions itself strangely. On the one hand, it sets out to critique the hyper-rational model of standard economics. On the other hand, it often fails to get far beyond that model as both an analytic and normative benchmark. Reference to the standard model, as we have said, is perfectly reasonable in the case of an imminent critique. But behavioral economics tends not to stray too far off the mainstream farm. It says that man is not rational in the way that standard models depict, but insists that he should be. Indeed, the core concept of irrationality is at its heart a critique. The behavioral economist constructs lists of “biases,” implying that these are unfortunate exceptions the general rule of hyper-rationality (c.f. Ariely 2009, p. xviii).

It is especially troubling that behavioral economists are wont to suggest policy measures to correct these “market failures.” This normative project moves far too quickly. To be really convincing, policy proposal based on behavioral market failures would require a comparative analysis of how markets and civil on the one hand and government on the other cope with behavioral biases. Policy makers—like central planners—cannot be exempted from our understanding of the limits of human cognition. That policy measures are suggested in the absence of such analysis should make us suspicious.

Behind behavioral claims of “market failure” ultimately lies a critique of others’ behavior by the cannons of constructivist rationality. For instance, Laux (2000) explicitly models even smoking addiction as a market failure. By modeling a single human being as several different individuals over time, the costs of smoking are depicted as not internalized – because of cognitive failures associated with addiction – and therefore cause intrapersonal externalities. Laux writes of this behavioral modeling: “this market failure can be thought of as an intrapersonal or addiction externality … by far the largest societal costs of smoking are the costs that smoking imposes on smokers themselves” (ibid. p 422). Is the language of market failure simply being used to reconstruct others’ behavior according to a predetermined standard? It is hard to avoid that impression.

We prefer an alternative: that economic science and policy discussions alike give way to human nature rather than the other way around. There is little to commend any attempt to remake ourselves in the image of *homo economicus.* Among a laundry list of other psychoses (c.f. McCloskey 2006), *homo economicus* omits that aspect of our nature most
central to the Hayekian project: learning and discovery. As G. L. S. Shackle put it: “So far as men are concerned, being consists in continual and endless fresh knowing” (1972:156). Or as James Buchanan (1979, pp. 93-112) has put it, man is an imagining being. We construct ourselves through time and can envision being different than we currently are. Dogs don’t think this way, but human beings do. We can strive to become better than we currently are. This is how we acquire moral character, how in the process of investing in becoming someone different we acquire knowledge and wisdom. The model of man postulated in the subjectivist economics of Hayek leaves behind the ‘constructivist rationality’ idea of modeled perfection; the determinant model of programmed choice is rejected and instead the imaginative quest for betterment with all its stumbles and falls is embraced.

This bumbling and erring individual striving to discovery the person he wants to become interacts with other similar creatures within the market place. Buchanan states in a classic paper that extends several Hayekian themes about the exchange order:

A market is not competitive by assumption or by construction. A market becomes competitive, and competitive rules come to be established as institutions emerge to place limits on individual behavior patterns. It is this becoming process, brought about by the continuous pressure of human behavior in exchange, that is the central part of our discipline, if we have one, not the dry rot of postulated perfection. A solution to a general-equilibrium set of equations is not predetermined by exogenously determined rules. A general solution, if there is one, emerges as a result of a whole network of evolving exchanges, bargains, trades, side payments, agreements, contracts which, finally at some point, ceases to renew itself. At each stage in this evolution toward solution there are gains to be made, there are exchanges possible, and this being true, the direction of movement is modified. (Buchanan 1979, p. 29)

The system evolves toward a solution, even while the individuals who make up the system of still struggling to discover who it is that they want to be, how they would become that person if they could, and how they are going to embrace the exciting and unending quest of becoming that is the essence of human life.

References


