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Edward L. Glaeser

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Harvard University
Cambridge, Massachusetts

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Psychology and the Market

by

Edward L. Glaeser*

Harvard University and NBER

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Abstract

Prospect theory, loss aversion, mental accounts, hyperbolic discounting, cues, and the endowment effect can all be seen as examples of situationalism—the view that people isolate decisions and overweight immediate aspects of the situation relative to longer term concerns. But outside of the laboratory, emotionally-powerful situational factors—frames, social influence, mental accounts—are almost always endogenous and often the result of self-interested entrepreneurs. As such, laboratory work and, indeed, psychology more generally, gives us little guidance as to market outcomes. Economics provides a stronger basis for understanding the supply of emotionally-relevant situational variables. Paradoxically, the rise of situationalism actually increases the relative importance of economics.

* I am particularly grateful for conversations with Gary Becker, Daniel Benjamin, Drew Fudenberg, David Laibson, Richard Posner, Jesse Shapiro, Andrei Shleifer and Richard Zeckhauser. Paul Romer particularly influenced my thinking in this area.

I. Introduction

The relationship between economics and other social sciences is schizophrenic. Economists who work on politics or sociology are exporters who use economic tools to analyze traditional topics of these sister disciplines. Conversely, economists who work on psychology are importers. Behavioral economists use insights from psychology to improve our understanding of the traditional topics of economics. This one-sided interaction with psychology is only appropriate if economics is so weak that we need psychology to reconstruct our discipline and if our tools have little to say about psychological phenomena.

Both of these statements are false. Economics is neither so weak nor psychology so strong that economists should content themselves with applying psychology to economic problems. Economics has as much to give to psychology as psychology has given to economics.

Over the past two decades, predictions that came from the convenient assumptions of powerfully rational cognition and simple preferences have been challenged by an increasingly large number of facts. The unifying thread of much of behavioral economics is situationalism—the idea that decisions are made based on very local influences, not long-run well-being (Ross and Nisbett, 1991). Prospect theory (Kahneman and Tversky, 1979) tells us that people put enormous weight even when those reference points are quite arbitrary and ephemeral. Mental accounting (Thaler, 1985) tells us that people often make decisions ignoring events and consequences outside of a particular narrow domain. Hyperbolic discounters place an exceptional weight on the present and cue-theory emphasizes ephemeral situational forces. People display negative altruism in ultimatum games based on a modest, situational cue.

While situationalism requires economics to change and grow, it does not challenge the core of the discipline. Bayes' rule and perfect cognition do not lie at the heart of our

discipline; neither Adam Smith nor Alfred Marshall ever thought humans were all that perfect. The heart of economics is the principle that people respond to incentives. The central tool that enables economists to understand market-wide phenomena is our concept of an equilibrium in which returns are equalized across activities. Psychology is not going to argue that human beings don't respond to incentives, nor is it going to suggest that risk-free opportunities for profit will be ubiquitous.

If anything, situationalism creates more of a problem for psychology than for economics. In the real world, situations are man-made. To understand heterogeneity across time and space, psychologists need theories that explain how exogenous variables shift the supply of cues, framing and other situational factors. For example, psychology tells us that people form beliefs in large part by listening to people around them, so it isn't a surprise that cognitive errors can propagate and persist. But psychology doesn't help us to understand the exogenous factors that lead to different errors in different times and places. No laboratory based science is going to explain why anti-Semitism exploded in 19th century Germany but not in 19th century Italy.

If we combine economic insights about the understanding of the supply of influence and psychological insights about the impact of that influence, then we have a chance to understand equilibrium outcomes. For example, social psychologists document that people respond angrily to attacks against themselves and to stories about attacks against seemingly innocent victims. These stories can produce hate. Economics helps us to craft an equilibrium model of supply of hate-fulfilling stories. An economic model of hate (as in Glaeser, 2002) can use the economic focus on incentives and equilibrium to create predictions about where we should expect to see outbreaks of hatred.

In Section III, I discuss the application of economics to the psychological phenomena of widespread cognitive errors. These mistaken beliefs abound. 88 percent of Pakistanis and 76 percent of Moroccans believe that the Arab terrorists did not destroy the World

Trade Center.¹ 75 percent of the Northern Irish and 71 percent of Americans believe in the existence of the Devil, while only 33 percent of the English, 19 percent of the French and 11 percent of Danes think that there is some sort of Mephistopheles. Either the Irish or the Danes are wrong.

The applications of economics to the formation of aggregate cognitive errors suggest a number of comparative statics. These errors will be more common when the costs of making mistakes to the individual are low. As a result, we should expect more error in the political arena (because no one's vote directly matters) than in the market arena (because making foolish purchases is at least somewhat costly). These errors will be more common when mistaken beliefs strongly complement supplier's returns. Mistaken beliefs will be more common when errors increase the current flow of utility. Thus, if people enjoy anticipating a rosy future, they should believe stories that make them overly optimistic and in particular, they should happily accept stories about a life after death.

Beliefs with strong complementarities across people will be particularly likely to spread. In other words, if a first believer gains by convincing a second believer, then this will make mistakes more likely to spread. The applications of the equilibrium concept to psychology suggests that access to consumers' attention and the ability to mislead them will tend to be offset by costly provision of services (such as entertainment) to consumers.

Finally, in Section IV, I turn to the normative implications of bringing psychology to economics and economics to psychology. The behavioral economists' most profound attack on the neoclassical paradigm is in the area of welfare economics, where the self-control literature suggests more freedom is not necessarily better (e.g. Phelps and Pollock, 1968, Laibson, 1997). Section IV argues that while the behavioral economists have ably illustrated the flaws inherent in consumer decisions, policy decisions require weighing the losses from error in the market with the losses from errors in the political

¹ These figures are not unusual for the Islamic world. 89 percent of Kuwaitis and 74 percent of Indonesians share this view according to Gallup polls taken in 2002.

sphere. After all, we don't have the option of a perfectly informed, social planner who maximizes our welfare. Psychological errors in the political market will tend to be far more severe than errors in the product market. As a result, increased psychological realism will probably tend to make us more, not less, wary of government intervention.

II. Situationalism and Economics

The thread that runs through much behavioral economics is that individuals often do a bad job maximizing their long-run welfare. In some papers, suboptimal behavior stems from limited powers of reasoning (e.g. Slovic, 1972, Tversky and Kahneman, 1974, Griffin and Tversky, 1992, Camerer, Ho and Chong, 2002). In other papers, extreme orientation towards the present causes people to neglect future well-being (Strotz, 1956, Laibson, 1997). The most subversive papers argue that decisions are so context dependent that we should treat preferences as either highly unstable or essentially nonexistent (e.g. Kahneman and Tversky, 1979, Thaler, 1985, Kahneman, Wakker and Sarin, 1997, Ariely, Loewenstein and Prelec, 2003).

If the first wave of behavioral economics attacked the view that people perfectly maximize their own well-being, the second wave has tried to replace the simple economic model of individual decision-making with an almost equally simple, but more empirically accurate alternative. This enterprise is stymied by what could be called Tolstoy's Corollary on Suboptimal Behavior: there is generally only one way to maximize correctly but there are an uncountable number of ways to screw up.² Current behavioral economics can be seen as a battle against Tolstoy's Corollary and an attempt to impose order on the tremendous variety of human error. Tolstoy's Corollary also means that while pre-behavioral economics could advance by incorporating increasingly powerful optimization techniques, post-behavioral economics will be less able to advance by borrowing mathematical tools and will require greater reliance on evidence.

² This is a natural implication of Tolstoy's famous line from *Anna Karenina*: "Happy families are all alike. Every unhappy family is unhappy in its own way."

Ross and Nisbett (1991) argue that the central lesson of a large body of psychological research is the importance of temporary, situational factors in decision-making. Likewise, one way to read much of behavioral economics is that the most common reason that people fail to maximize long-run welfare is that ephemeral aspects of the situation strongly influence decisions. Certainly the most important element in prospect theory (Kahneman and Tversky, 1979) is that people are extremely sensitive to an ultimately, fairly arbitrary reference point. Moreover, Rabin (2000) and Barberis, Huang and Thaler (2003) argue that the observed aversion towards small-value risky gambles is essentially incompatible with utility functions that are defined over long-run outcomes. The evidence seems to suggest that individuals treat each gamble as distinct and care about the attributes of the gamble, not the resulting wealth distribution.

Mental accounting (Thaler, 1985), which suggests that people compartmentalize and often treat decisions as separate from many related events, is also situationalist. Camerer, Babcock, Loewenstein and Thaler (1997) show that a short run situational factor, like today's income, appears to have stronger income effects on daily labor supply than more permanent income.³ The endowment effect (Thaler, 1994) is similarly situationalist and suggests that people care a great deal about keeping mugs, even when they have randomly received the mugs and have only owned those mugs for seconds. Cue theory (Laibson, 2001) explicitly models the impact of ephemeral factors with no long-run consequence. Even hyperbolic discounting can be understood as reflecting the overwhelming power of local factors. The penchant to be vengeful towards anonymous strangers (e.g. Fehr and Gächter, 2000) can also be seen as more evidence for the power of the situation. The well-studied impact of framing suggests that a minor change in the words that describe an experiment can significantly change the outcome of the experiment.

The power of the situation probably stems from the emotional components of decision-making. Local stimuli trigger emotions and these emotions influence decisions (as in Romer, 2000). The impact of emotions is complex; emotions impact both beliefs and

³ Farber (2003) has recently challenged these results.

preferences. But the power of emotions does not mean that decisions are random. In the short run, people can overrule their emotional responses. In the long run, people can become adept at manipulating their own emotions (as in Laibsonian, 2001 cue-management). Furthermore, emotional responses themselves generally serve some evolutionary purpose and as such they are not random. Nonetheless, because emotions matter, decisions are influenced by short-run elements of a situation that influence emotions but that don't seem related to long-run well-being.

While it is incontrovertible that psychology challenges some cherished economic assumptions, it is less obvious that situationalism troubles the core pillars of economics. Economics can easily incorporate the key lessons of situations and, ultimately, economics will have much to say about how people will craft situations that impact themselves and others (see e.g. Mullainathan and Shleifer, 2003). As I will argue in the next section, it is psychology that is in trouble. The fact that psychology has come to emphasize the importance of endogenous, man-made situations actually confirms psychology's inability to explain differences in aggregate outcomes across space and time.

At its core, economics has two positive pillars and one normative prescription. The first positive tenet is the principle that people respond to incentives, or as Adam Smith wrote "it is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest." The second positive tenet is that in equilibrium returns are equalized across different activities, or that there is an absence of arbitrage. Adam Smith used this tenet as the basis of his seminal discussion of wage differences across occupations. The marriage of the equilibrium condition (which generates prices) and the incentive principle (which dictates the response to prices) provides economics with its ability to predict equilibrium quantities.

These tenets are modified, not destroyed, by the introduction of psychology in economics. Behavioral economists have emphasized that people respond to more than prices and that in some circumstances, people can't even figure out the real price of something. But this doesn't mean that incentives don't matter. Given that price effects

still work in birds and other species that are even less intellectually savvy than humans (see Herrnstein, 1997), there is no reason to suspect that greater attention to non-cognitive, situational factors will lead us away from the view that human beings respond to incentives.

The situationalist paradigm also requires modification, not destruction, of the equilibrium concept. The power of the local, situational factors means that some people will not be detached enough to respond to higher returns in one activity or asset. But just as not everyone is perfectly rational arbitrageur, not everyone is blind to arbitrage opportunities either. The most fascinating strain of work in behavioral economics has focused on mixed markets where there are both perfectly rational and irrational actors (Akerlof and Yellen, 1985, Russell and Thaler, 1985, and DeLong, Summers, Shleifer and Waldmann, 1990).⁴ The important question for economists is not whether consumers are rational as independent actors, but rather how heterogeneously rational consumers aggregate, especially when rational self-interested sellers are trying to exploit less than perfectly rational buyers (as in DellaVigna and Malmendier, 2002). These papers modify the existing paradigm, but the predictive power of these models still comes from the presence of some arbitrageurs.

Most importantly, psychology in general and situationalism in particular has challenged the third tenet of traditional economics: freedom is good or welfare increases with the size of an individual's choice set. If people don't maximize their welfare, then won't things be better if the government intervenes? Of course, this sentence critically assumes a degree of government benevolence that seems wholly at odds with the past four millennia of human experience. In Section IV of this paper, I will discuss more thoroughly the impact of psychology on normative economics. Introducing psychology should reduce our faith in private actors, but it must reduce our faith in governments as well, probably by a much greater degree.

⁴ Other papers on the interaction of perfectly and imperfectly rational actors in a market include Shleifer and Vishny (1997), Barberis, Shleifer and Vishny (1998), Barberis, Huang and Santos (2001) and Scheinkman and Xiong (2003).

III. The Potential Contributions of Economics to Psychology

Situationalism challenges economics, but it poses a much more critical problem for psychology. If psychology had produced the result that human beings make decisions based on immutable personality factors that are determined at birth, then economics would seem to have little to add. In that case, great advances in the social sciences would come from psychologists mapping and explaining the genetic roots of personality.

But psychology has produced the opposite result— immutable personality characteristics are usually found to matter little, while minor changes in framing or social influence can deeply shade behavior. In the real world, framing and social influence are not determined by psychologist experimenters, but rather by other actors pursuing their own goals.⁵ People supply frames and social influence, which is lucky for economists, because economics has a long tradition of thinking about supply.

The psychological research on Nazi-like behavior illustrates how situationalism creates a need for economics. In the wake of World War II, a series of psychological experiments showed that normal Americans could be induced to act barbarically. Milgram (1963) documents that subjects were willing to follow orders from an authority figure to cause pain to an innocent bystander. Haney, Banks and Zimbardo (1973) show the readiness with which student subjects adopt the identity of sadistic guards. These experiments show the ease with which situation can influence behavior and they refute the view that Nazi-like behavior couldn't happen in America. But the experiments don't explain why Nazism, and its incumbent attitudes, occurred in Germany but not in the U.S. In Germany, Nazi-producing situations were supplied. In the U.S., they were not. The key empirical puzzle is understanding these cross-sectional differences in supply.

Similarly, social psychology has excelled in the study of prejudice at the individual level, but has failed to explain patterns of prejudice over time and space. Psychologists can

⁵ Romer (1996) represents a seminal paper in this area that continues to shape my understanding of the topic.

measure prejudice, and they have mapped the cognitive roots of discrimination and shown how prejudice can be increased or diminished in laboratory experiments. Like most other things, beliefs appear to be quite malleable and appropriately managed local influences can increase and reduce the degree of discrimination in particular settings. But does this really help us to understand why prejudice against minorities differs across time and space, or why Catholics are hated in some places, and Jews in others? Psychology describes the mental technology with which prejudice can be formed, but it does not explain how much that technology will actually be used in different settings.

More generally, the psychological focus on the situation makes it inherently a partial equilibrium science and means that psychology will always need economics, or some equivalent, to allow it to understand the world. Social psychology, which one might think is focused on using psychology to explain social outcomes, instead “studies the psychological processes that people have in common with one another that make them susceptible to social influence” (Aronson, Wilson and Ackert, 2002). But documenting the power of social influence tells us nothing about the supply of social influence and to understand the world, we need to understand both the supply and effect of social influence, situation and framing. To avoid the problem of infinite regress (the situation was supplied because the supplier was influenced by some other situation), models must be generated that link exogenous factors with supply. To provide a model that explains supply as the result of exogenous factors, we will almost surely be led back to simple economic reasoning that links supply to returns and returns to market structure.

One way to think about this seeming paradox—that it is through psychology’s insistence on the primacy of social influence that economics’ influence is assured—is that the great achievement of economics is understanding aggregation. Our discipline has always been about the wealth of nations, not individuals, and as psychologists are the first to emphasize, aggregates do not merely sum up individuals. Gustave LeBon (1895) wrote “the fact that [people] have been transformed into a group puts them in possession of a sort of collective mind which makes them feel, think, and act in a manner quite different from that in which each individual of them would feel, think, and act were he in a state of

isolation.” Psychology shows the crucial role of aggregation; economics itself has the tools with which to understand aggregation.

This leads to the role that economics can play in improving psychology. The economic approach to psychology might start with the vast psychological literature that documents the malleability of human perceptions and emotional states. The economics approach would then ask how, in equilibrium, those perceptions and states end up being manipulated. The incentive principle may be quite valuable, since incentives can be primitive, while situation and social influence seem generally endogenous. The equilibrium concept, where heterogeneous actors interact and create aggregate outcomes that are wildly different from the outcomes that would occur if people were in isolation, can serve as the starting point for understanding psychological aggregates. If psychology has improved economics by giving us a richer understanding of the individual, then perhaps economics can improve psychology by giving it a better understanding of the market.

I now turn to the formation of cognitive errors or mistaken beliefs. As mentioned above, 88 percent of Pakistanis and 76 percent of Moroccans believe that the Arab terrorists did not destroy the World Trade Center. 60 percent of Americans believe that the poor are lazy; only 26 percent of Europeans have this view. 60 percent of Europeans think that the poor are trapped, while only 29 percent of Americans share this view.⁶ The available evidence suggests that the poor in America work harder than many of the European poor and the exit rates out of poverty are higher in Europe than in the U.S. (Alesina and Glaeser, 2003).

Many psychological phenomena can be seen as examples of cognitive errors. Racial prejudice can be understood as statistical discrimination gone awry. Irrational hatred can be interpreted as the mistaken belief that someone is out to do you harm (Glaeser, 2002). Nationalism may be the mistaken view that your welfare is intrinsically bound up with

⁶ These facts come from the World Values Survey, various years, and details are in Alesina, Glaeser and Sacerdote (2002).

the success of your own country, particularly in the military sphere.⁷ Given the degree of conflict between religious beliefs, at least some of the major religions must be false, so the formation of at least some religious beliefs can be thought of as the formation of mistaken beliefs.

Erroneous beliefs abound and in a sense this is a rebuke to the most conventional of economic views. After all, the usual economist's model of belief formation is that people follow Bayes' rule. It is hard to see how Bayesian updating can explain why Americans believe so strongly in the Devil. Psychology seems more realistic and tells us that people are very susceptible to influence and are likely to believe things that they are told.⁸ While this is surely true, it doesn't tell us what people will be told. For this we need a framework with both people who listen and people who supply tales of varying degrees of veracity.⁹

What do the incentive principle and the no arbitrage equilibrium predict about the level and form of false beliefs? An economic model of false beliefs would have a demand side, consumers who can be misled, and a supply-side, actors who stand to benefit by misleading the public. Ordinary consumers are subject to manipulation, but they also can take steps to correct their beliefs, either by acquiring better information or sometimes just by the costly process of thinking logically, before these beliefs become the basis for later actions. Suppliers can provide stories and images at a cost. The profits to suppliers will come through the consumers' decisions to buy their products or elect them to office. I now discuss the implications of this framework for the prevalence of false beliefs.

Implication # 1: False beliefs will be more common when making the right decision doesn't yield large benefits to individuals.

⁷ Nationalism can also be seen as the mistaken belief that members of your country are your family.

⁸ Asch (1955) is the classic psychological experiment documenting that people will regularly declare that a shorter line is longer if other people in the room declare this falsehood to be true.

⁹ Romer (1996) deeply influenced my understanding of this topic.

This obvious implication is a straightforward application of the incentive principle, and it will show up in many applications (e.g. Mullainathan and Shleifer, 2003). When people have the ability to correct their errors, they will spend more to correct these errors when the cost of these errors is higher. As such, errors should be particularly obvious in situations where the costs of screwing up to any individual consumer are small. In Glaeser (2002), this implication suggests hatred is harder to create in integrated communities or against large groups. Frequent interaction with a minority means that erroneously believing in the evils of that minority carry costs. In places like the Middle East where Americans are rare, hating Americans is pretty costless, at least to any one individual, so the incentive to gather correct information about Americans is low.

A natural implication of this claim is that we should expect to see much more error in the political sphere than in the economic sphere. For any one individual voter, the costs of political errors are trivial. When the only value of accuracy is that you vote a little more wisely, it is hard to imagine that people will work hard to undo misleading indoctrination. Indeed, errors such as beliefs about September 11 or income mobility really only matter for political decisions, so we shouldn't be surprised about the degree of error.¹⁰ As I will discuss in Section IV, this tendency for greater accuracy in commercial than in political decisions helps buttress the case for *laissez-faire*.

Implication # 2: Mistaken beliefs are more common when errors lead to large returns for information suppliers.

Again, this implication follows from the incentive principle.¹¹ We should expect to see a proliferation misleading signals and other cues when incorrect beliefs are complements to buying sellers' commodities or supporting politicians. The advertising industry is the most important economic example of these systematic attempts to mislead, where suppliers attempt to convince buyers that their products will yield remarkable benefits.

¹⁰ In principle, beliefs about income mobility might also matter for economic decisions (as in Benabou and Tirole, 2002), but there is ample evidence that suggests that people are capable of accurately ascertaining their own returns to effort even when they believe something totally different about society at large.

¹¹ Mullainathan and Shleifer (2003) also derive a variant on this comparative static. When consumers actually demand misleading stories, they are more likely to be supplied.

Of course, since error-based purchasing imposes costs on buyers, we should expect consumers to work to undo the misleading information. The battle for truth in consumer markets pits incentivized suppliers against incentivized consumers. Markets where the producers gain tremendously by being the top supplier, but consumers lose little if they choose the wrong start product (such as superstar-type markets), may be areas when we would expect errors to be common because the producers are better incentivized than consumers.

In the political market, suppliers are also much more incentivized than voters. The political entrepreneurs who supply erroneous beliefs receive large benefits from selling their ideas. Each individual pays little from accepting these beliefs at face value, so we should expect widespread error. For example, Alesina and Glaeser (2003) argue that the differing beliefs about income distribution between the U.S. and Europe are the result of politically inspired indoctrination. In both Europe and the U.S., political leaders on the left pushed a Marx-inspired ideology that emphasized class solidarity and the unfairness of the capitalist system. Leaders on the right emphasized economic opportunity and the laziness of the poor. These ideas were pushed on the political stump and in the classroom. The eventual difference in beliefs between Europe and the U.S. reflects not economic reality, but rather the political success of socialists in Europe and capitalists in the U.S.

This implication is also helpful in understanding politicians' supply of hateful stories about minorities. Politicians will try to build hatred against minorities when those minorities stand to particularly lose from the politicians' policies. As such, anti-welfare politicians will build hatred against African-Americans because those African-Americans are disproportionately poor. Ethnic groups that are in the middle of the income distribution will not be targeted, because the politician doesn't build support by vilifying those groups. In Glaeser (2002), I argue that this logic can explain why anti-Semitism flourished in late 19th century Germany and Austria, but not in Italy and the United States.

Financial markets have some similarities to the political arena. As in the case of politics, there are highly incentivized suppliers who try to push their own worldview.

Kindleberger (1989, p. 35) describes the anatomy of a typical bubble “professional company promoters—many of them rogues interested only in quick profits—tempted a different class of investors, including ladies and clergymen.” Investors have a much stronger incentive than voters to figure out the truth, but this incentive is muted by the Keynesian beauty contest aspect of financial markets. This social aspect of asset markets implies that investors are as motivated to determine the beliefs of other investors as to assess the truth. As it can be more profitable to invest on a widely believed lie than on the truth, the incentives to learn the truth are muted.

Implication # 3: Consumers will be more likely to accept false beliefs when those beliefs make them happier.

Consumers may have an incentive to learn the truth, but if they enjoy anticipating a good future, then there is a reverse incentive to believe stories about future success. As such, consumers will tend to be over-optimistic (because they happily believe stories about their own future success) and there will be a steady demand for flattery. Consumers therefore face a tradeoff between the costs of erroneous decisions based on over-optimistic beliefs and the benefits of anticipating a rosy future. This force might predict that people who own assets currently are particularly likely to believe new rumors about the good prospects of those assets because these rumors confirm their own good judgment. Flattery is also an inherent element in the way that nationalism is sold.

Nowhere is the demand for pleasant stories more obvious than in religion. Many of the successful religions teach of a delightful post-death experience. Naturally, consumers find a belief in heaven more appealing than belief in mortality. Given how attractive it is to believe in an afterlife, and given that this belief need not carry any costs, it is actually a puzzle that anyone doubts the existence of heaven. If the costs of convincing people that an afterlife exists are sufficiently low, and if there is free entry in the religious marketplace, then atheism cannot be a market outcome. Given the existence of atheistic

consumers and given that people prefer to believe in eternal life relative to mortality (at least when that belief has no strings attached), then a new entrant should be able to earn positive rents by supplying a belief in heaven without any attendant moral strictures.

One answer to this puzzle is that suppliers of attractive beliefs about life after death end up acquiring some market power and then extract resources by tying access to heaven with behavior that benefits these suppliers. Individuals then need to choose between accepting the belief in heaven, with its accompanying moral obligations, and believing that existence ends at the grave. The absence of belief in an afterlife in some European countries can conceivably be explained by the lack of free entry in the religious market and anti-clerical indoctrination by politicians seeking to weaken the political power of the church.¹² Where there is free entry in the religion market, the equilibrium principle suggests that across religions, we should expect to see those religions that are most successful in convincing people that an afterlife exists are also those that extract the most resources from their adherents.

Implication #4: We should expect to see a proliferation of beliefs with strategic complementarities across people, i.e. beliefs that induce believers to convince others of the same belief.

This implication is variant on the fads literature (Bikchandani, Hirshleifer and Welch, 1992). The incentive principle predicts beliefs that create incentives for their own propagation will spread particularly rapidly. If a consumer that acquires a particular belief then has an incentive to indoctrinate his neighbor, then each new believer is also a new supplier. Believers become suppliers because the moral obligation to indoctrinate is part of the belief system. Indeed, we shouldn't be surprised that religious belief systems

¹² Glaeser and Sacerdote (2001) argue that anti-clerical indoctrination in Europe is the natural outcome of the political battles of the 19th century where leftists fought against a church-king alliance.

often depict missionary activity as a great good.¹³ Religions that don't advocate missionary activity are unlikely to survive in a free market.

Believers can also become suppliers because their beliefs induce them to take actions which have high returns if others share their beliefs. For example, the value of a stock purchase increases if others also believe that a particular company is poised for economic greatness. Likewise, political beliefs also display these strategic complementarities. Once you believe that the Republicans are far better leaders than the Democrats, you have an incentive to induce your neighbors to believe the same thing, since the probability of the Republicans being in office is a function of the number of people who share your beliefs. Of course, in large markets, this incentive to indoctrinate will be weak.

This implication tells us that suppliers will craft beliefs that create incentives for indoctrination. It also tells us that we should expect widespread errors in situations where strategic complementarities in beliefs exist across people. Again this favors accuracy in consumer markets over political markets. In many cases, consumers who think a particular commodity is good have an incentive to discourage this belief in others because their demand will increase the price. As argued above, voters have an incentive to ensure that their neighbors share their beliefs.

Implication # 5: Activities which give access to consumers' attention will yield direct benefits to those consumers and will be costly to suppliers.

This implication follows from the equilibrium principle. Activities such as television, books and schools require consumers to passively intake broadcast stories and images. They create an opportunity for suppliers to mislead consumers, and as such they are valuable. In equilibrium, these opportunities to mislead must be just costly enough to suppliers to offset the benefits from forming beliefs. The natural form of the costs to

¹³ In some cases, indoctrination is emphasized but limited to a subset of the population. For example, for the past 1500 years, Judaism has eschewed general missionary activity, but has strongly emphasized the moral obligation of parents to rear their children as Jews.

suppliers will come in providing direct value to consumers in the form of entertainment or genuinely useful knowledge. This provision of direct value is needed to compensate consumers for the losses that they will expect to suffer from having their beliefs manipulated.

The most obvious application of this analysis is in broadcast television. In this case, an entire industry exists to provide entertainment for free. This entertainment is the cost born by suppliers for the opportunity to indoctrinate consumers. Standard economic logic would seem to suggest that consumer losses from advertising-created errors are offset by the benefits of free entertainment. Of course, in cases where consumers don't internalize all of the costs of their actions (such as in political decisions), the entertainment will only offset the expected loss to the individual consumer, but not to society as a whole.

Another example of this equilibrium implication is in the market for higher education. Private universities have a tremendous opportunity to indoctrinate their students and many do just that. Many graduates appear to believe that being a loyal alumnus (where loyalty is often defined through donations) is a positive moral good. Competition in this market ensures that universities pay for this opportunity to indoctrinate generally by providing students with skills and quality of life during their time of study. Indeed, in most elite universities the costs of providing education are much higher than tuition and are only offset by the ex post donations of students who believe that they have an ethical obligation to contribute to their alma mater.

IV. Normative Economics and Psychology

Behavioral economics has occasionally been seen as an excuse for paternalistic government intervention. After all, if humans don't maximize their welfare, then shouldn't the government maximize for them? Indeed, the literature on self-control and hyperbolic discounting (Strotz, 1956, Phelps and Pollak 1968, Thaler and Shefrin, 1981, Laibson, 1997, Gul and Pesendorfer, 2001) does challenge the idea that more choices are

preferred to less which is a direct attack on the third basic tenet of traditional economics. Situationalism implies that decisions are formed by ephemeral factors that have little to do with long-run well-being. Widespread cognitive errors also mean that private decision makers do a poor job at maximizing utility. Together these aspects of behavioral economics appear to challenge the heart of normative economics and the laissez-faire tradition.

It is true that if consumers reason poorly and don't maximize their welfare, then the basis of traditional welfare economics is in shambles. While the incentive principle and the no arbitrage equilibrium are likely to survive the integration of psychology, formal welfare economics certainly requires a major overhaul. But I have my doubts that this overhaul will ultimately cause us to be more enthusiastic about governmental intervention in the economy. It seems more likely that a proper appreciation of the limits of mankind will cause us to be increasingly scared of government intervention and increasingly ardent in our support for limits on government.

The real case for laissez-faire is not that the individual is perfect, but that the state will do worse than the private individual, and the strength of this case has always relied more on the fallibility of the state than on the perfection of markets. As an integral member of the Scottish enlightenment, Adam Smith's case for laissez-faire was grounded in the unarguable historical fact that governments often pursue policies that impoverish and slaughter their own citizenry. This is, after all, the central theme of Smith's Scottish historian contemporaries, David Hume and William Robertson. Human beings surely make mistakes about their own welfare, but the welfare losses created by these errors are surely second order relative to the welfare losses created by governments which not only make errors, but also pursue objectives far from welfare maximization. Individuals may procrastinate and foolishly invest, but they tend not to voluntarily enroll in concentration camps.

The debate about government intervention requires understanding the relative losses from private folly and state malfeasance. Psychology has helped us to appropriately inflate our

estimates of the losses from private error. What does psychology tell us that we should expect from the political sector? Even without considering the market for political power, we should expect our leaders to be subject to the same biases and emotional handicaps as citizens. Indeed, individuals who choose to go into politics may be particularly prone to over optimism and are likely to be fairly aggressive. Both political villains (Hitler, Stalin, Mao) and heroes (Winston Churchill, Teddy Roosevelt) of the 20th century are hardly models of clear thinking and emotional balance.

In the monarchical era of Smith and Hume, no one was confused into thinking that political leaders were likely to maximize the public welfare. However, the advent of democracy led many to believe that we could trust our governments. Indeed, a large rational choice literature tends to suggest that people will choose political leaders who serve their interests and will vote for laws that match their interests. A worldview that assumes that people are perfectly rational in the political sphere, but wildly irrational in the economic sphere, might indeed lead one to believe that aggressive government policies are likely to help us overcome our psychological flaws.

But of course, such a worldview is inconsistent and wrong. As I have argued above, it seems far more likely that people will be easily misled in the political arena, where no one voter's actions matters, than in the economic world, where consumer choices directly impact consumer welfare. It is not hard to find cases where socially disastrous policies have received fervent and widespread popular support. While Hitler never received a popular majority during the Weimar elections, the Nazis and the Communists together managed to get an overwhelming majority of support. There was strong popular support in both France and Germany for entry into World War I. Thucydides describes the popular enthusiasm in both Athens and Sparta for beginning the mutually destructive Peloponnesian war. If voters were so rational, then a variant of Aumann's agreeing to disagree theorem would surely imply that people on both sides can't favor warfare. Support from both sides suggests a lack of logical thinking.

The American political market has probably produced fewer disasters than any comparable state over a 200 year period, but this is surely because of a constitution rife with checks and balances to the unfettered power of the voter, not because of any perfection in the American voter. Indeed, American voters seem as prone to emotion and bias as voters anywhere. Issues like abortion, prayer in schools, and the war on drugs often dominate political discourse, even when the political office in question will have practically no ability to influence policies on these topics. Attacks on Mitt Romney during the recent Massachusetts Gubernatorial campaign focused on his alleged anti-choice beliefs, despite the fact that the governor in the profoundly democratic state of Massachusetts in a country where *Roe v. Wade* is the law of the land has almost no ability whatsoever to influence abortion availability.¹⁴

The U.S. is not unusual in the dominance of emotionally salient issues that are ultimately irrelevant to the conduct of policy. During the recent Iraq war, political debate in Spain centered entirely on the evil of American aggression despite the fact that by that time there was absolutely nothing that any Spanish leader could do to change the course of the conflict. Perhaps most absurdly, numerous small cities (such as Cambridge) fervently debated and enacted laws declaring themselves to be nuclear-free zones, as if these laws would have any effect on the prevalence of nuclear weaponry. These are only recent examples of the widespread presence of emotion and erroneous beliefs in the political market.

We do not yet have the tools to incorporate psychology fully into welfare economics. But this incorporation cannot be one-sided. We cannot admit the manifold errors that human beings make in their private lives and then assume that the state will get things right. As the incentives to fight bias are so much stronger in private decisions than in political acts, I suspect that incorporating psychology into welfare economics will only buttress the traditional economists' belief in limited government.

¹⁴ The situation is only made more absurd by the fact that his opponent, Shannon O'Brien, was a protégé of House Speaker Thomas Finneran who is far more actively pro-life than Romney.

V. Conclusion

The complementarities between psychology and economics are considerable. Insights from psychology have certainly challenged traditional welfare economics. While behavioral economics has not pushed us to drop our conventional ideas about what constitutes an equilibrium, it has changed our understanding of what a no-arbitrage equilibrium implies, especially in the field of finance. And while behavioral economics has not yet argued that incentives don't matter, it has argued that many things are at least as important as conventional financial incentives.

But while the bulk of behavioral economics has so far focused on the gains to economics from incorporating some psychology, there are also large gains to psychology from incorporating some economics, especially when it comes to explaining large-scale phenomena. Society-wide psychological phenomena such as prejudice and nationalism cannot be understood without recognizing that they come about through the interaction of strategic actors who push beliefs on the citizenry as a whole. In a sense, there is a supply of beliefs that interacts with consumers who essentially "demand" these thoughts. To understand the equilibrium of the market for beliefs, and to understand differences across societies, the traditional economic focus on incentives and no-arbitrage equilibrium seems to offer promise.

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