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## Psychological Influences on Financial Regulation and Policy

David Hirshleifer

Siew Hong Teoh

David Hirshleifer is the Merage Chair of Business Growth and Professor of Finance at the Paul Merage School of Business, University of California, Irvine, CA 92697-3125, 949-824-9955, mmatlock@uci.edu.

Siew Hong Teoh is Dean's Professor of Accounting at the Paul Merage School of Business, University of California, Irvine, CA 92697-3125, 949-824-9952, mmatlock@uci.edu.

David Hirshleifer joined the Merage School after serving as Kurtz Chair at Ohio State University, Waterman Professor at the University of Michigan, and as a tenured faculty member at UCLA. His recent research explores psychology and securities markets, managerial decision biases, social interactions and markets, and how firms exploit market inefficiency. Other research areas include corporate finance, fads and fashions in economic decisions, and the psychology of regulation. His research has been profiled in international news media, and has won several awards, including the Smith-Breeden Award for outstanding paper in the *Journal of Finance*. Professor Hirshleifer has served as a consultant for securities and money management firms; as editor of the Review of Financial Studies; as associate editor of the Journal of Finance; in editorial positions at several other finance, economics, and strategy journals; and as director of the American Finance Association and the Western Finance Association.

Siew Hong Teoh has published widely in leading journals in Accounting, Finance, and Economics. Her work on earnings management has been profiled in international news media and congressional testimonies, and is widely cited by scholars in accounting and finance for the important finding that the market seems not to efficiently impound management's actions into security prices. She received the Moskowitz Prize for best paper on socially responsible investing from the Social Investment Forum, and was nominated for the Brattle Prize at the *Journal of Finance*. Her research is listed in the *JFE* All Star Papers, and in the top 300 most cited papers in Finance 2000-2006. Her recent research concerns psychological influences on accounting information in capital markets, analysts' forecasts of earnings, and on how investors exploit market inefficiency. She previously served on the faculties at UCLA, University of Michigan, and The Ohio State University.

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## **Abstract**

We review how financial regulation and accounting rules result in part from psychological bias on the part of political participants (such as voters, politicians, regulators and media commentators) and of the 'designers' of the accounting system (the abovementioned parties, and managers, auditors, and users). Some key elements of the psychological attraction approach to regulation are limited attention, omission bias, in-group bias, fairness and reciprocity norms, overconfidence, and mood effects. Regulatory outcomes are influenced by the way that individuals with psychological biases interact, resulting in attention cascades and in regulatory ideologies that exploit psychological susceptibilities. Several stylized facts about financial regulation and accounting flow from this approach. For accounting it helps explain conservatism, aggregation, the use of historical costs, and a downside focus in risk disclosures. It also explains informal shifts in reporting and disclosure regulation and policy that parallel fluctuations in the economy and the stock market.

## INTRODUCTION

We review here psychological influences on accounting and financial rules and regulation. Behavioral accounting and finance has mainly taken regulatory structures as given, and the applications to regulation have mainly been along normative lines— examining how to protect naïve investors (e.g., Hodder, Koonce, and McAnally 2001, Kachelmeier and King 2002, and Sunstein and Thaler 2003), often under the implicit assumption of benevolent and rational regulators (Waymire and Basu 2008). As for positive research on accounting and financial regulation, following the public choice research program in economics, the focus has been mainly on the interactions of *rational* selfish pressure groups and political participants (e.g., Watts and Zimmerman 1979, Kroszner and Stratmann 1998, Rajan and Zingales 2003, and Benmelech and Moskowitz 2007). There is therefore little consideration of how psychological bias of policymakers and firm stakeholders affect the development of reporting and disclosure rules.

Economists have, until recently, neglected how irrationality on the part of participants in the *political process* affects financial regulation (e.g., the survey of Klapper and Zaidi 2005 does not mention this topic). An extensive survey of the law and economics field barely mentions psychology (McNollgast 2007), and an overview of regulation by a leading behavioral economist does not cover the psychological approach (Shleifer 2005, p. 446). Despite a rich body of research by scholars in other fields on the effects of psychological biases on political judgments and decisions (e.g., Baron 1998, 2009), only recently have economists focused attention on the implications for accounting and financial regulation (e.g., Daniel, Hirshleifer, and Teoh 2002, McCaffery and Slemrod (2006), Hirshleifer 2008, Hirshleifer and Teoh forthcoming).

Recent progress is being made on applying psychology to law and politics; see, e.g., Kuran and Sunstein (1999), Caplan (2001), Murphy and Shleifer (2004), and Jolls, Sunstein, and Thaler (2006, Section III). Caplan (2007) provides evidence of voter irrationality, and

documents a set of voter political biases. Our topic here goes beyond voters, since regulation and accounting policy are also influenced by the biases of commentators and regulators. Also, importantly, rather than directly proposing forms of political bias, we discuss how ideas from psychology and other fields can improve our understanding of political decision-making and regulation.

Such an analysis recognizes that the designers of accounting and financial policy — regulators, politicians, voters, and users—are subject to systematic biases. Hirshleifer (2008) and Hirshleifer and Teoh (forthcoming) call this approach the *psychological attraction approach* to regulation, accounting policy, and political economy more generally, because certain beliefs about regulation and accounting are especially good at exploiting psychological biases to attract attention and support.

An early initial step toward incorporating psychology into the study of politics was the notion that voters are rationally ignorant about political matters (Downs 1957). However, the ‘rational’ part of this theory implies no systematic *bias*. The theory therefore does not explain why voters would make mistaken decisions repeatedly over long periods, such as approving protectionism and farm subsidies. Even an ignorant individual, if rational, understands that pressure groups have an incentive to manipulate available information to promote their favored policies.

We will further argue that how issues are presented to the public—emotional catchphrases and positioning—is crucial. Such effects are also precluded in a rational setting. Economists have often been puzzled about why policies they have identified as inefficient persist. Ignorance (lack of information) does not explain why bad policies are adopted just when public discourse focuses sharply on them. The psychological attraction approach suggests studying what kinds of information are salient and alluring to voters and policymakers, and the social contagion of ideas about public policy. We review here some psychological and social forces that underlie accounting and financial regulation.

Our primary focus will be on limited attention, omission bias, in-group bias, fairness and reciprocity norms, overconfidence, mood effects and attention cascades, and cultural evolution of ideology. This list includes both individual biases and social processes that amplify them.

## **LIMITED ATTENTION**

Since people have limited attention, the attractiveness of economic policies depends not just on the costs and benefits they confer on different parties, but also on the salience of these effects. People are more tolerant of hidden taxes than transparent ones (McCaffery and Baron 2006). Withholding, by reducing the salience of income taxes paid, make higher tax levels tolerable to citizens. Limited attention also creates misperceptions about the progressivity of income taxation (Baron and McCaffery 2006). As a result of attention effects, political battles are often waged by framing debates with sound bites to capture public attention and to make positions plausible, understandable, and memorable.

Psychological research has studied what makes stimuli easy to encode and retrieve. Attention is drawn to *salient* stimuli that contrast with other stimuli in the environment, and to *vivid* stimuli, such as stories about personal experiences, and emotionally arousing information (Nisbett and Ross 1980, p. 45). People are more willing to expend resources to save the lives of identified individuals than statistical lives, the identifiable victim effect (Small and Loewenstein 2003). As the famous Stalin quote goes, “The death of a single Russian soldier is a tragedy. A million deaths is a statistic.”

Regulatory debates are influenced heavily by unusual but heart-rending personal stories. For example, the Enron scandal, together with accounting fraud at WorldCom, helped set the stage for the Sarbanes-Oxley Act of 2002 (or SOX), a major change to U.S. reporting regulations. What made the episode so vivid was a narrative of evil perpetrated against innocent employees who had large fractions of their retirement assets invested in Enron stock. Management had promoted Enron stock as a retirement investment to employees while selling

their own shares. The motivation for SOX was more general than the protection of employees who invest in own-company stock, but there is some evidence of linkage (Hirshleifer 2008). The very name Enron became a symbol of outrageous greed; Enron, together with other accounting frauds caused a tidal wave of pressure for a regulatory response.

Spread widely over many unidentified shareholders, the costs of a financial regulation are often far less salient than the exceptional wrongdoings that incited it. In the Enron scandal, the stories of families losing their life savings were far more vivid than information about possible costs of disclosure regulation that SOX imposed upon general shareholders. Furthermore, management time and attention are intangible, which reduces salience of such costs in the minds of planners; critics have argued that proponents of SOX underestimated its damage to managerial focus.

Limited attention offers an additional possible explanation for the elemental fact of aggregation in accounting. Aggregation destroys information content, and with modern information technology, extensive disaggregation is feasible. However, aggregation makes reports comprehensible and succinct (Hirshleifer and Teoh 2009).

People dislike losses as measured relative to an arbitrary reference point (Kahneman and Tversky 1979). A reframing of a decision problem that switches from contemplated gains to losses or vice versa affects choices. A natural extension of this to the social sphere, which we call *loss salience*, suggests that we care more about the financial losses than the financial gains of others. Limited cognitive processing power helps explain our tendency to focus on gains or losses relative to reference points. So, loss aversion and loss salience probably derive from more fundamental sources, such as the tendency to make dichotomous evaluations as a cognitive short-cut (Hirshleifer 2001). The focus of individuals on losses is amplified at the social level to the extent that conversation or media reporting are biased toward transmitting adverse and emotionally charged news (Heath, Bell, and Sternberg 2001).

In expected utility theory, there is nothing special about gains or losses relative to an arbitrary benchmark, nor about losses that exceed some arbitrary cutoff. But risk perceptions focus upon the potential for loss among both analysts and investors (Koonce, McAnally, and Mercer 2005). In practice, financial risk analysis often focuses on bad-case or worst-case scenarios rather than variance or other risk measures that reflect the overall payoff distribution. Loss salience explains the appeal of the Value-at-Risk methodology for risk management, in which risk is measured by 'maximum possible loss.'

The term 'mental accounting' (Thaler 1985) describes a psychological phenomenon, the division of payoffs into separate accounts that are treated differently (despite the fungibility of money). As in prospect theory, gains or losses are measured relative to an arbitrary reference point such as historical purchase price. Mental accounting captures the fact that people view 'paper' gains or losses as less real or important than realized ones. Such profits are viewed as not mattering until the position is closed or some other trigger for reevaluation occurs---i.e., there is limited mental marking-to-market of unrealized profits. The same psychological forces may underlie the revenue recognition principle (Hirshleifer and Teoh 2009). Permitting recognition only when transactions are (virtually) completed feels natural and is psychologically attractive.

Loss aversion can help explain the emergence of conservatism as an accounting practice. Recognition of profits is delayed until they are certain, whereas losses are anticipated. Why do users and regulators find conservatism appealing? Recognition of profits or assets involves a forecast of the future. Users who find the prospect of being disappointed vividly unpleasant may perceive (rightly or wrongly) that conservatism reduces the likelihood of future disappointments (Hirshleifer and Teoh 2009). Refraining from recognizing a gain is not very painful today, but has the advantage of reducing the risk of a painful future loss. (Early recognition of losses feels bad, but at least is compensated by reducing the risk of future losses.)

## **OMISSION BIAS**

*Omission bias* is “the tendency to favor omissions (such as letting someone die) over otherwise equivalent commissions (such as killing someone actively)” (Ritov and Baron 1990). An example is recommending against vaccination of a child even when the reduction in likelihood of death from disease is much greater than the likelihood of death from vaccination.

Corporate hedging often causes an adverse ‘side effect’ (losses), which could be avoided by passively not hedging. Observers with omission bias will especially dislike such losses, and, therefore may perceive even a risk-reducing hedge strategy as risky. Even more simply, observers who do not understand the concept of hedging may hear about derivative losses and directly perceive them as risky.

Similarly, omission bias can deter making purchases to diversify into seemingly risky assets, such as the Ghana stock market, or real estate. Buying into Ghana is a commission, making any resulting loss especially painful. There are other possible reasons for non-diversification, such as familiarity bias (Huberman 2001, Cao, Hirshleifer, Han, and Zhang 2007, Massa and Simonov 2006), and the isolation or focusing effect (or narrow framing; viewed in isolation, volatile assets seem risky; Barberis and Huang 2006).

Regulation by government or other institutions to protect unsophisticated investors from supposedly dangerous securities or asset classes can block risk-reducing diversification (Del Guercio 1996). Omission bias also helps explain pension rules in some time periods and countries limiting diversification into major asset classes such as the international sector, rules that limit trading of the stock of privately-held firms, and rules that limit participation in hedge funds to ‘qualified’ investors.

Omission bias provides an alternative explanation for historical cost accounting (Hirshleifer and Teoh 2009). Updating of the valuation of a previously-purchased asset is a commission, whereas sticking with the historical cost is passive. Either approach can fail ex post

as estimates of the payoffs the asset ultimately generates. But since marking-to-market is a commission, errors that result from doing so will seem especially blameworthy.

## **IN-GROUP BIAS**

People tend to prefer members of their own group to outsiders, a phenomenon called in-group bias (Brewer 1979) or parochialism (Schwartz-Shea and Simmons 1991, Baron 2001, 2009). The theory of kin selection (Hamilton 1964) provides an evolutionary basis for in-group bias and xenophobia

A further source of human conflict is self-serving attribution bias; in interactions with others, we think we are in the right and others in the wrong. This bias extends to group-serving interpretations as well (Taylor and Doria 1981), which contributes to group antagonisms. Self-censorship in conversation in order to conform to the group can further exacerbate xenophobia (Kuran 1995). There is evidence that such biases affect financial decisions; citizens of Europe have less trust for countries with different religions and lower genetic similarity, and lower trust is associated with less trade (especially in trust-intensive goods), portfolio investment, and direct investment (Guiso, Sapienza, and Zingales 2009). In part for patriotic reasons, many countries have government ownership of selected industries. Xenophobia also helps explain restrictions on foreign shareholding and control of domestic companies.

When things go wrong, people eagerly look for someone to blame. Blame is laid upon some visible, disliked, and relatively weak out-group, a phenomenon known as *scapegoating* (Aronson, Wilson, Akert 2006). This encourages regulation to prevent misconduct by the despised group.

In the case of Enron, a key forward-looking way to help subsequent investors was to encourage them to diversify out of own-company stock. Requiring greater disclosure from firms was hardly relevant for the aspect of the issue that captured public attention. However, it is much more intuitive to place the burden for change on future potential scoundrels than victims.

Much of the regulatory structure of U.S. stock markets was imposed following market downturns, such as the Securities Acts of 1933 and 1934, and the Sarbanes-Oxley legislation that followed the year 2000 high-tech collapse.

The explanation suggested by the psychological attraction approach is that people look for someone to blame, and then favor regulation to prevent such villains from committing similar acts in the future. Most scholars put more weight on a different kind of explanation---that bubbles develop spontaneously through a positive feedback process, as influenced by investor expectations and biases. However, such an account is too abstract and complex to appeal to non-specialists. People are also not especially eager to attribute their own losses to personal incompetence.

A far more satisfying explanation is that the crash was caused by misbehavior, especially by some unpopular group, such as the rich, lenders, bureaucrats, capitalists, foreigners, Jews, or speculators. Of course, in any financial market, examples of actual misbehavior can be found, which can add an air of plausibility to the villainy story regardless of whether misconduct played any significant role at the macro level. Another appealing feature of such explanations is that they suggest a simple cure---regulate to prevent the misbehavior.

## **FAIRNESS AND RECIPROCITY NORMS**

Three important norms of behavior are reciprocity, equality, and charity. Reciprocity, or fair exchange, requires no taking without giving. Equality requires equal division of resources. Charity requires acting to relieve hardship of others. Furthermore, hardship is often identified with recent losses, rather than a low level of wealth per se. We therefore see outpourings of sympathy for people whose houses are damaged during natural disasters in priority over hungry people who can't afford a house. These norms have a basis in evolved human psychology, but are also culturally spread and enforced.

The charity norm condemns sellers who charge high prices, and lenders who charge high interest rates, to the poor or recently distressed. This motivates price controls in general, and usury laws in particular. In either case mutually beneficial transactions are blocked. For example, usury laws prevent the poor and distressed from obtaining loans, and price gouging regulation creates shortages of essential goods in times of disaster. One of the roles of regulation is to prevent fraud, which is often committed against the poor and distressed. However, regulation based on the charity norm is not designed solely to prevent fraud, and is inefficient; usury rules are not the only way to help the poor and insure against hardship.

The equal division norm is reflected in progressive income taxes and the tendency of individuals to share equally in experiments on resource transfer games (Camerer and Thaler 1995, Hoffman et al 1998). Envy and the salience of the equality norm are intensified when a group is doing poorly, which helps explain rage against rich CEOs who lay off blue collar workers. Outrage at high executive compensation is expressed regularly; regulation in the U.S. includes corporate taxation of executive salaries greater than \$1 million and of course the progressive income tax.

Experiments on the 'trust game' show that there is much more trust and reciprocation than is predicted by the rational egoistic model, with reciprocation mediated by the release of the neuroactive hormone oxytocin (Zak, Kurzban, and Matzner 2004). McAdams and Rasmusen (2006) discuss evidence that reciprocity norms (specifically, promise-keeping norms) are important for market exchange. The norm of reciprocity also requires the punishment of violators. A readiness to succumb to uncontrollable rage has strategic value as a means of commitment (Hirshleifer 1987, Frank 1988, Nesse 2001). But the exercise of outrage can impose heavy social costs, as with 'jackpot' litigation awards by U.S. juries against corporate wrongdoers.

Reciprocity norms contribute to hatred of speculators and lenders. People have trouble grasping that intermediating activities add value. For example, when a resource is shifted

across locations or over time, it still seems like the 'same' product, which suggests it should have the same price. Middlemen are often viewed as parasites. For example, in the medieval concept of the just price, price should be equal to the cost to the seller (Southern 1968, p. 376). In consequence, merchants are often accused of price gouging. This is in part because the costs incurred by middlemen are not salient to buyers.

The notion that middlemen, speculators, and lenders provide little real value goes back at least to the Middle Ages. The norm of equality creates an immediate case against lenders, who are rich enough to lend and therefore ought to help those who are poorer out of generosity. Denigrating lenders also helps preserve a poor lender's self-esteem if he decides not to repay. When a client is poor or recently distressed, the charity norm also condemns high product prices and interest rates.

Naïve economic analysis, together with the reciprocity norm, underlies a case against usury. A zero interest rate seems fair to someone who neglects the fact that the same amount of money is worth a different amount at different dates. This confusion influenced medieval Christian views on usury. A dislike of deviations from customary or 'reference prices' provide a further possible source of modern usury legislation and opposition to price gouging (Jolls, Sunstein, and Thaler 1998, p. 1511-12).

The social benefits to speculative activity as identified by economists (e.g., Hirshleifer 1971), are not popularly understood. The public perception is that speculators profit at the expense of others. Some apparent costs to society of speculation are salient. Speculators profit from extreme movements in commodity prices that are associated with hardship for either producers (such as farmers) or consumers. This and the high activity of speculators when securities fluctuate sharply often lead to the conclusion that speculators have manipulated the market for their own ends. This is especially the case for short sellers, as bearers of ill tidings about price. Of course, manipulation often occurs, and matters. But psychological forces cause great overestimation of its importance.

Security regulations in many countries that are designed to limit speculation include higher taxation of short-term capital gains, securities transaction taxes, and restrictions or bans on short-selling. Hatred of speculators also tarnishes perceptions of derivatives. The perception that derivatives are mainly vehicles for gambling and manipulation makes them attractive targets for regulation.

## **OVERCONFIDENCE**

We have high regard for people who energetically attack the challenges they face. But it is not always valid to extend this regard to attackers of society's problems, because it is hard to make good decisions on behalf of millions of interacting strangers with diverse preferences and information. The invisible hand (Smith 1776) or spontaneous order Hayek (1978) achieves functional results that a central planner can never understand in full detail.

Market institutions and technical solutions develop by accumulating creative solutions to problems. These solutions are often carefully designed, but often (as in biological evolution) are random trials that happened to work. However, the human mind is not designed to think about social equilibria in terms of evolutionary processes. It is much easier to think of effects as resulting from the intentional actions of specific individuals within simple models of the world. People have engaged in commerce for millennia, yet the concept of the invisible hand was not developed until the 18<sup>th</sup> century. Hence, the perennial appeal of efficiency-reducing market interventions.

Unlike free action at the personal level, market failure is a prerequisite for coercive intervention to be useful. This makes value-increasing interventions scarcer for governments. A failure to grasp the idea of the invisible hand, together with general attentional constraints, makes regulatory solutions to perceived problems immediately alluring. People want government to solve problems even when intervention will create net harm. Political entrepreneurs who propose plausible-sounding solutions have a ready audience.

*Overconfidence* is the belief that one's personal qualities are better than they really are. Overconfident policy analysts tend to assume that a perceived social problem has not been addressed by the market, and fix easily on proposed solutions. Hirshleifer and Teoh (2009) refer to this consequence of overconfidence as *intervention bias*. If on average over the distribution for potential remedies the mean improvement is negative, overconfidence leads too often to adoption. Over time this results in too many regulations, because there are many potential regulations to consider (see Hirshleifer 2008).

Even economists who understand the *general* notion of spontaneous order do not always internalize fully, in specific contexts, the full functionality of market institutions. A possible illustration is provided by transactions taxes in asset markets to limit speculation. Deliberately suppressing liquidity initially seems counterintuitive. Nevertheless, securities transactions taxes designed to suppress speculation are prevalent internationally. They have also been proposed in the U.S. both in broad-based forms, and targeted at derivative securities (Hakkio 1994). Proponents have included leading economists such as John Maynard Keynes and James Tobin. Following the 1987 stock market crash, support was provided by luminaries such as Joseph Stiglitz and Lawrence Summers (Stiglitz 1989, Summers and Summers 1989).

We focus on arguments for transactions taxes based upon the claim that excessive speculation leads to overreactions, excess volatility, and capital misallocation. What is usually absent from the analysis of securities transactions taxes is how *markets* might be able to address excessive trading (Hirshleifer 2008). There are many possible mechanisms, mutual fund loads and closed-ending of funds are obvious examples. The policies of security exchanges influence liquidity through numerous means. Firms can choose illiquidity by remaining privately held or by going private. Some public firms, such as Warren Buffett's Berkshire Hathaway, don't split their stocks, resulting in high stock prices which reduce trading. Firms also influence their liquidity through the choice of which exchange to list on, and through disclosure policies.

The fact that there are many avenues for internalizing the externalities of excessive trading does not show that such externality problems are largely eliminated. But the neglect of such avenues in academic discussions suggests a lack of awareness of the *possibility* that the potential social costs of irrational speculative trading could, at least in part, be addressed by market adaptations.

Another possible example of overconfidence is the tendency of public officials or commentators to think they know how to manage market fluctuations helpfully through various policy instruments. An overconfident regulator may think he can assess fundamental value better than the aggregate of thousands or millions of individuals participating in markets, including professionals who devote their lives to valuation. The illusion of control, an aspect of overconfidence, tempts observers to think that they know how to avert bubbles and crashes. After a crash, commentators condemn existing regulation and regulators as inadequate, and call for more active intervention.

Calls by market observers to limit managerial earnings forecasts ('guidance') may also result from an overconfident dismissal of market institutions. A possible motivation is evidence of agency problems and inefficiencies associated with earnings forecasts and earnings management (Richardson, Teoh and Wysocki 2004). However, there are also obvious benefits to corporate transparency. Before accusing the market of error, it seems important to try to understand why making forecasts has been the market outcome. A simple possible explanation is that investors regard quarterly earnings guidance as highly informative about long-run prospects. Furthermore, contrary to one of the claims of critics, the evidence does not support the view that markets overreact to quarterly earnings news.

## **ATTENTION CASCADES AND MOOD CONTAGION**

Psychologists distinguish a fast, intuitive, affect driven cognitive system from a slow, controlled, and analytical system (Kahneman 2002). Heuristic decision-making has its place, but

works poorly in domains that require careful analysis. Contagion of naïve theories, and of optimistic or pessimistic moods can lure society into big mistakes in politics and other domains.

Even a society of rational decisionmakers can converge upon ill-informed decisions owing to information cascades. An individual who observes early support for a regulatory initiative can rationally infer that there may be a good reason for it. This further encourages others to support it, and can cause opposing information to be quietly neglected (Bikhchandani, Hirshleifer, and Welch 1992, Banerjee 1992). Conformist instincts can further reinforce and stabilize support even for bad measures.

Just as enthusiasm for stocks seems to grow suddenly into intense bubbles, there are episodes of intense fear of physical hazards or of antagonistic actions by other people. People tend to judge the frequency or importance of a phenomenon according to their ability to remember examples of it (Tversky and Kahneman 1973). This availability heuristic contributes to sudden focus on specific hazards. Kuran and Sunstein (1999) point out that when individuals and news media start discussing a danger, it starts to seem more common and important. This self-feeding effect results in what we call attention cascades. Owing to individual biases, attention cascades are idiosyncratic and error prone. For example, hidden dangers such as environmental pollutants receive disproportionate attention relative to, say, car accidents.

A rational observer who knows he is being told only one side of a debate will not, in general, end up with biased beliefs. However, experimental evidence shows that people do not adjust sufficiently for the one-sidedness of evidence (Brenner, Koehler, and Tversky 1996). In an attention cascade, the presentation of evidence becomes increasingly favorable to one side of an issue. If the issue is some perceived threat, there is self-amplifying pressure for regulation to protect against it. This helps explain why accounting and financial regulation is so often imposed after severe market downturns.

The psychological attraction approach implies that there will be what Hirshleifer and Teoh (2009) call evaluation-driven overshooting during financial crises. There is evidence

people experiencing negatives tend to engage in more critical evaluation and to be more pessimistic. This suggests that there will be greater pressure for precautionary regulation after bad news. The obverse of this is a tendency for slackening of informal standards during good times. This leads to a boom-bust pattern in informal regulation. Positive feedback amplifies these forces. During bad times, firms become distressed and manipulation activities come to light. This focuses public attention on misconduct, creating pressure to litigate and to tighten regulatory and accounting oversight. The benefit to politicians and public prosecutors of aggressively pursuing alleged misconduct increases. As more malfeasance is detected, the public perception that corruption is endemic increases. During good times, a reverse process occurs.

## **CULTURAL EVOLUTION OF IDEOLOGY**

Two stylized facts about economic regulation are *excess* and *inefficiency*, at least compared to an ideal benchmark. As an example of the latter, economists generally view price controls as inefficient, yet they have been adopted repeatedly. Collectivist movements such as communism, fascism, and Nazism, have at times held sway over large populations, with disastrous results.

An explanation for these stylized facts is that ideologies (broadly construed to include religion and moral beliefs about economic decisions) shape financial regulation. Cultural replicators are ideas or assemblies of ideas that collaborate to grab our attention and our cognitive and emotional susceptibilities to spread through the population, termed *memes* by Richard Dawkins. Ideologies are memes involving some moral view of how society should be organized.

Religious ideology has shaped aspects of financial regulation directly as with prohibitions on usury, and indirectly through emphasis on the equality and charity norms. The equality norm motivates socialist and communist ideologies that reject free trade and private property. Early

Christians and influential thinkers (Plato, Aristotle, Confucius, and Thomas Aquinas) shared a suspicion of private property and disdain for trade.

Anti-market ideology remains popular, and underlies the pressure for regulation. Envy of the rich motivates and in turn is incited by ideologies of class conflict. An anti-business meme views profit-seeking as evil. Hollywood routinely depicts businessmen as crooks or conspiring killers.

But what makes these views attractive? The idea that trade is mutually beneficial is surprisingly hard to internalize. It is cognitively simpler to view commerce as a zero sum game (Rubin 2002). The appeal of socialism comes from, overconfidence (as discussed earlier) about the ability to manage an economy from top down, (or 'the fatal conceit'; Hayek 1988).

The psychological attraction approach predicts that liberalism thrives during good times and anti-market sentiments during bad times. During an economic downturn the view that profit is theft is more appealing; people want to blame someone for their hardships, and the capitalist provides a convenient target. Utopian movements (which tend to be anti-market) are attractive during times of dislocation, when people who feel bad about themselves can escape these feelings by identifying with a greater cause (Hoffer 1963).

Conspiracy theories are another set of ideologies that has shaped regulation. We especially fear hazards whose workings are hidden or complex (insecticides, genetically modified foods, and nuclear energy, as contrasted with car accidents). Hidden menace is a key ingredient of conspiracy theories, which blame some outsider or despised group for society's problem. Conspiracy theories gain support during bad times. Historically there have been many conspiracy theories about foreigners, Jews, or speculators controlling the financial system and engineering market crashes (Pipes 1997, Chancellor 2001). People have trouble understanding the financial system, which makes them receptive to such theories. It is also unintuitive to many that a market crash can result from the interaction of many individuals, no single one of whom is powerful. The human mind is inclined to attribute social outcomes to deliberate actions of

individuals. Conspiracy theories therefore provide a more intuitive explanation for bubbles and crashes than impersonal markets.

Hirshleifer (2008) proposes that an ideology of *anti-short-termism* exploits psychological bias to promote its own replication. This ideology claims that markets and publicly traded firms are too focused on short run results. Such accusations were highly prevalent during the 1980s. Critics of short-termism emphasize the pressures placed on firms by takeovers, leverage, and impatient investors. The alleged bad consequences were underinvestment and lack of innovation. Japan was envied and feared by many Americans for its long-term corporate orientation.

Over the next two decades the U.S. economy did far better than Japan's. Remarkably, this datum has not led to an abandonment of the short-termist thesis. Hirshleifer (2008) argues that psychological bias contributes to the evolution and success of the anti-short-termist ideology.

For an ideology to succeed, its propositions (memes) should be emotionally strong and compatible. Logical flaws or lack of supporting evidence matters little unless the defects are glaringly obvious. Hirshleifer suggests that critics of short-termism typically conflate five distinct propositions: that firms attend too much to short-term stock prices, underinvest, underinnovate, and overleverage; and that the stock market inefficiently focuses too much on short-term signals such as quarterly earnings news.

Logically these claims are not entirely compelling or even consistent. The attempt to boost short-term stock price can cause firms to *overinvest* (since stock prices tend to react positively to investment increases, Trueman 1986) and to favor innovative over routine projects (Chordia, Hirshleifer, and Lim 2001). Empirically, the stock market does not consistently overweight short term signals, growth opportunities instead are overvalued (the value effect). If anything the market underreacts to short-term earnings-related news (the post-earnings

announcement drift anomaly, Bernard and Thomas (1989)), nor is it clear that firms are on the whole overleveraged.

There is evidence that markets overweight certain kinds of quarterly earnings information—accruals (accounting adjustments), and especially their discretionary components (Sloan 1996, Teoh, Welch, and Wong 1998ab). But overall several data and logical points oppose elements of the anti-short-termist ideology. However, the five propositions above complement each other emotionally to form a stronger and more contagious ideology. The label of ‘short-termism,’ as applied to these distinct concepts, exploits our general regard for foresight and discipline. The ideology thereby recruits our preexisting mental equipment for thinking about folly and sin. By joining these disparate concepts together, people are reminded of the ideology more often by external events, i.e., its ‘idea habitat’ is expanded Berger and Heath (2005).

There is seldom any attempt to reconcile the different pieces of anti-short-termism ideology coherently. Often the same commentators who scathingly criticize firms and investors for being obsessed with short-term earnings are also contemptuous of investors who, during the late 1990s, placed too little weight on the fact that the profits of dot-com firms were negative—a complaint about excessive long-termism.

*Moralistic interpretation* dominates public discussion of short-termism. (This explains the seeming paradox that some of the same commentators who criticized corporate short-termism in the 1980s criticized naïve overexcitement during the tech-bubble of the late 1990s.)

Corporate leverage is perceived emotionally as analogous to the excessive borrowing of an extravagant spendthrift. Adopters of the ideology can enjoy a narrative in which sin and folly are followed by punishment (firm failure), and a feeling of superiority. In summary, this ideology provides an example of how financial ideas can become popular because of their psychological properties as contrasted with their realism and validity.

## **A COMPARISON WITH THE RATIONAL PRESSURE GROUP APPROACH**

A rational self-interest approach to regulation based upon competition between pressure groups faces two puzzles. First, individuals often take political positions based on principle, not pecuniary self interest (Sears and Funk 1991). Indeed, individuals altruistically donate time and funds to their favored pressure groups. Thus, what is commonly interpreted by political economists as rational self-interested lobbying is actually a more interesting combination of selfish and altruistic motives, or identification of own welfare with group welfare. Second, successful pressure groups fool other voters systematically over long periods of time. The psychological attraction approach can analyze explicitly how pressure groups exploit psychological biases.

The psychological attraction approach implies that regulatory responses to perceived problems will often misfire; for example, we expect investor-protection regulation often to hurt the investors. It can also explain why regulatory mistakes persist. A rational pressure group theory does not capture such effects, since such an outcome involves political participants being systematically wrong about the true intent and consequences of regulation for long periods of time.

## **SUMMARY AND CONCLUSIONS**

We review here how psychological bias influences regulation and reporting policy. In the psychological attraction approach, regulation is a consequence of psychological biases on the part of regulators and participants in the political process, and of ideologies that evolve because they are tempting to susceptible individuals. The psychological attraction theory also implies that bad regulatory outcomes can result even when all political participants have unselfish intentions; and that regulations can reinforce individual level biases. Since the set of possible tempting regulations is unlimited, the theory predicts a general tendency for overregulation, and for rules to accumulate as an increasing drag on the economy. The theory also predicts a tendency for increases in regulation in response to market downturns or disruption.

The psychological attraction theory of regulation can inform policy as well. It is often presumed that the insights of the behavioral approach support policies and regulation to protect investors from their own psychological biases. This is indeed a strand of behavioral thinking (Thaler and Sunstein 2009). However, the behavioral approach in some ways *strengthens* the case for laissez-faire, because it suggests that regulation is driven by psychological bias. As several authors have argued (Caplan 2001, Daniel, Hirshleifer and Teoh 2002, Hirshleifer 2008), individuals have a stronger incentive to overcome bias when investing personal resources than when making political choices that tax or regulate others. A behavioral approach suggests that the political process often works even more poorly than markets.

It is not hard to think why psychological bias favors either excessive fondness or excessive opposition to a given type of regulation. However, we argue that there are some general fundamental reasons why overall outcomes will tend to be biased toward bad regulation and excessive regulation.

Irrational pressure for a bad regulation is often transient, as is the case with attention cascades. Inertia in the political system helps limit the effects of psychological biases on future policies. This implies a benefit to constitutional limitations such as separation of powers, irrevocable rights, supermajority rules, and default sunset provisions. However, the psychological attraction approach is not unique in suggesting such rules. More generally, an understanding of how psychology affects the political process can provide new insight into what makes pernicious ideologies successful in spreading. Such awareness can potentially help improve the rationality of political and regulatory decisions.

Discussion Questions:

1. What do the authors mean by the “psychological attraction” approach to accounting rules and disclosures?
2. How does limited processing power possibly explain rules requiring aggregation of accounting information in financial reports?
3. How might risk disclosure of derivative securities be an example of a “Bad Rule?”
4. Based on the analysis in the chapter, what is the role of the media in driving psychological bias in financial regulation?
5. How could the psychological phenomena of scapegoating and overconfidence affect a regulator’s response to adverse market events?
6. How do the salience and visibility of benefits and costs of a possible financial regulation affect regulatory outcomes?

## REFERENCES

- Aronson, Elliot, Timothy D. Wilson and Robin M. Akert. 2006. *Social Psychology, Sixth Edition*. Upper Saddle River, NJ: Pearson-Prentice Hall.
- Banerjee, Abhijit V. 1992. "A Simple Model of Herd Behavior." *Quarterly Journal of Economics* 107:3, 797–817.
- Barberis, Nicholas and Ming Huang. 2008. "The Loss Aversion/Narrow Framing approach to the Equity Premium Puzzle." In Raj Mehra (ed.), *Handbook of the Equity Risk Premium*, 201-228. Amsterdam: North Holland.
- Baron, Jonathan. 2001. "Confusion of Group-interest and Self-interest in Parochial Cooperation on Behalf of a Group." *Journal of Conflict Resolution* 45:3, 283-296.
- Baron, Jonathan (1998). *Judgment misguided: Intuition and error in public decision making*. New York: Oxford University Press.
- Baron, Jonathan. 2009. "Cognitive biases in moral judgments that affect political behavior." *Synthese* forthcoming.
- Baron, Jonathan and Edward J. McCaffery. 2006. "Unmasking redistribution (and its absence)." In Edward J. McCaffery and Joel Slemrod (eds.), *Behavioral Public Finance*, 85–112. New York: Russell Sage Foundation.
- Berger, Jonah and Chip Heath. 2005. "Idea Habitats: How the Prevalence of Environmental Cues Influences the Success of Ideas." *Cognitive Science* 29:2, 195-221.
- Benmelech, Efraim and Tobias Moskowitz. 2007. "The Political Economy of Financial Regulation: Evidence from U.S. State Usury Laws in the 19th Century." NBER Working Paper 12851.
- Bernard, Victor and Jacob Thomas. 1989. "Post-Earnings-Announcement Drift: Delayed Price Response or Risk Premium?," *Journal of Accounting Research* 27:Supplement, 1-48.

Bikhchandani, Sushil, David Hirshleifer and Ivo Welch. 1992. "A Theory of Fads, Custom, and Cultural Change as Informational Cascades." *Journal of Political Economy* 100:5, 992–1026.

Brewer, Marilyn. 1979. "In-group bias in the minimal intergroup situation: A cognitive-motivational analysis." *Psychological Bulletin* 86:2, 307-324.

Brenner, Lyle, Derek J. Koehler and Amos Tversky. 1996. "On the evaluation of one-sided evidence." *Journal of Behavioral Decision Making* 9:1, 59-70.

Calabresi, Guido and Philip Bobbitt. 1978. *Tragic Choices*. New York: W.W. Norton.

Camerer, Colin and Richard Thaler. 1995. "Anomalies: Ultimatums, Dictators and Manners," *Journal of Economic Perspectives* 9:2, 209-19.

Cao, Henry, Bing Han, David Hirshleifer and Harold Zhang. 2007. "Fear of the Unknown: Familiarity and Economic Decisions." Working paper, Merage School of Business, University of California, Irvine.

Caplan, Bryan. 2001. "Rational Ignorance versus Rational Irrationality." *Kyklos* 54:1, 3–26.

Caplan, Bryan. 2007. *The Myth of the Rational Voter: Why Democracies Choose Bad Policies*. Princeton, NJ: Princeton University Press.

Chancellor, Edward. 2001. "A Short History of the Bear." <http://www.prudentbear.com> Guest Commentary, October 29, Page 6.

Chordia, Tarun, David Hirshleifer and Sonya Lim. "Firm and Managerial Incentives to Manipulate the Timing of Project Resolution." 2001. Working paper, Merage School of Business, University of California, Irvine.

Daniel, Kent, David Hirshleifer and Siew Hong Teoh. 2002. "Investor Psychology in Capital Markets: Evidence and Policy Implications." *Journal of Monetary Economics* 49:1, 139–209.

Del Guercio, Diane. January 1996. "The Distorting Effect of the Prudent-man Laws on Institutional Equity Investments." *Journal of Financial Economics* 40:1, 31-62.

Downs, Anthony. 1957. *An Economic Theory of Democracy*, New York: Harper.

Frank, Robert H. 1988. *Passions within Reason*, New York: Norton.

Guiso, Luigi, Paolo Sapienza and Luigi Zingales. 2009. "Cultural Biases in Economic Exchange." *Quarterly Journal of Economics* forthcoming.

Hakkio, Craig S. 1994. "Should We Throw Sand in the Gears of Financial Markets?" *Federal Reserve Bank of Kansas City - Economic Review*, Second Quarter.

Hamilton, William D. 1964. "The Genetical Evolution of Social Behaviour I and II." *Journal of Theoretical Biology* 7:1, 1-52.

Hayek, Friedrich A. 1978. *Law, Legislation and Liberty, Volume 1: Rules and Order*. Chicago, IL: University of Chicago Press.

Hayek, Friedrich. 1988. *The fatal conceit: The errors of socialism*. University of Chicago, IL: Chicago Press.

Heath, Chip, Chris Bell and Emily Sternberg. 2001. "Emotional Selection in Memes: The Case of Urban Legends." *Journal of Personality and Social Psychology* 81:6, 1028–1041.

Hirshleifer, David. 2001. "Investor Psychology and Asset Pricing." *Journal of Finance* 56:4, 1533-1597.

Hirshleifer, David. 2008. "Psychological Bias as a Driver of Financial Regulation." *European Financial Management* 14:5, 856-874.

Hirshleifer, Jack. 1971. "The Private and Social Value of Information and the Reward to Inventive Activity." *American Economic Review* 61:4, 561-74.

Hirshleifer, Jack. 1987. "On the emotions as guarantors of threats and promises." In John Dupré (ed.), *The Latest on the Best*. Cambridge, MA: MIT Press.

Hirshleifer, David and Siew Hong Teoh. 2009. "The Psychological Attraction Approach to Accounting and Disclosure Policy." *Contemporary Accounting Research* forthcoming.

Hodder, Leslie, Lisa Koonce and Mary McAnally. 2001. "SEC Market Risk Disclosures: Implications for Judgment and Decision Making." *Accounting Horizons* 15:1, 49–70.

Hoffer, Eric. 1963. *The Ordeal of Change*. New York, NY: Harper and Row.

Hoffman, Elizabeth, Kevin McCabe and Vernon Smith. (1996), "On Expectations and the Monetary Stakes in Ultimatum Games." *International Journal of Game Theory* 25:3, 289-301.

Huberman, Gur. 2001. "Familiarity Breeds Investment." *Review of Financial Studies* 14:3, 659-680.

Jolls, Christina, Cass R. Sunstein and Richard Thaler. 1998. "A Behavioral Approach to Law and Economics." *Stanford Law Review* 50, 1471-1550.

Kachelmeier, Steven and Ron King. 2002. "Using Laboratory Experiments to Evaluate Accounting Policy Issues." *Accounting Horizons* 16:3, 219–32.

Kahneman, Daniel. 2003. "Maps of Bounded Rationality: Psychology for Behavioral Economics." *American Economic Review* 93:5, 1449-1475.

Kahneman, Daniel and Amos Tversky. 1979. "Prospect Theory: An Analysis of Decision under Risk." *Econometrica* 47:2, 263-291.

Klapper, Leora and Rida Zaidi. 2005. "A survey of government regulation and intervention in financial markets." In Warrick Smith (ed.) *World Development Report 2005: A Better Investment Climate For Everyone*. Washington, D.C: World Bank.

Koonce, Lisa, Mary McAnally and Molly Mercer. 2005. "How Do Investors Judge the Risk of Financial and Derivative Instruments?" *Accounting Review* 80:1, 221-241.

Kroszner, Randall S. and Thomas Stratmann. 1998. "Interest Group Competition and the Organization of Congress: Theory and Evidence from Financial Services' Political Action Committees." *American Economic Review* 88:5, 1163-1187.

Kuran, Timur. 1995. *Private Truths, Public Lies: The Social Consequences of Preference Falsification*. Cambridge, MA: Harvard University Press.

Kuran, Timur and Cass Sunstein. 1999. "Availability Cascades and Risk Regulation." *Stanford Law Review* 51, 683–768.

Massa, Massimo and Andrei Simonov. 2006. "Hedging, Familiarity and Portfolio Choice." *Review of Financial Studies* 19:2, 633-685.

McAdams, Richard H. and Eric Rasmusen. 2006. "Norms in law and economics," In A. Mitchell Polinsky and Steven Shavell (eds.), *Handbook of Law and Economics*.

McCaffery, Edward and Jonathan Baron. 2006. "Isolation Effects and the Neglect of Indirect Effects of Fiscal Policies." *Journal of Behavioral Decision Making* 19:4, 289-302.

McCubbins, Matthew, Roger Noll, and Barry Weingast. 2007. "The political economy of law: Decision-making by judicial, legislative, executive and administrative agencies." In A. Mitchell Polinsky and Steven Shavell (eds.), *Handbook of Law and Economics*, 1651-1738. North Holland.

Murphy, Kevin M. and Andrei Shleifer. 2004. "Persuasion in Politics." *American Economic Review* 94:2, 435-439.

Nesse, Randolph M. 2001. "The evolution of subjective commitment." In R. Nesse (ed.), *Evolution and the Capacity for Commitment*, 1-44. New York, NY: Russell Sage Press.

Nisbett, Randy and Lee Ross. 1980. *Human Inference: Strategies and Shortcomings of Social Judgment*. Englewood Cliffs, NJ: Prentice-Hall.

Pipes, Daniel. 1997. *Conspiracy: How the Paranoid Style Flourishes and Where It Comes From*. New York: Free Press.

Rajan, Raghuram G. and Luigi Zingales. "The Great Reversals: The Politics of Financial Development in the 20th Century." *Journal of Financial Economics* 69:1, 5-50.

Rasmusen, Eric. 1992. "Managerial Conservatism and Rational Information Acquisition." *Journal of Economics and Management Strategy* 1:1, 175-202.

Richardson, Scott, Siew Hong Teoh, and Peter Wysocki. 2004. "The Walk-Down to Beatable Analyst Forecasts: The Role of Equity Issuance and Insider Trading Incentives." *Contemporary Accounting Research* 21:4, 885-924.

Ritov, Ilana and Jonathan Baron. 1990. "Reluctance to Vaccinate: Omission Bias and Ambiguity." *Journal of Behavioral Decision Making* 3:4, 263-277.

Rubin, Paul H. 2002. *The Evolutionary Origin of Freedom*. New Brunswick, NJ: Rutgers University Press.

Schwartz-Shea, Peregrine and Randy T. Simmons. 1991. "Egoism, Parochialism, and Universalism." *Rationality and Society* 3:1, 106-132.

Sears, David. O. and Carolyn. L. Funk. 1991. "The Role of Self-Interest in Social and Political Attitudes." *Advances in Experimental Social Psychology* 24, 1-81.

Shleifer, Andrei. 2005. "Understanding Regulation." *European Financial Management* 11:4, 439-451.

Sloan, Richard. 1996. "Do Stock Prices Fully Reflect Information in Accruals and Cash Flows about Future Earnings?" *Accounting Review* 71:3, 289-315.

Small, Deborah A. and George Loewenstein. 2003. "Helping a Victim or Helping *the* Victim: Altruism and Identifiability." *Journal of Risk and Uncertainty* 26:1, 5-16.

Smith, Adam. 1776. *The Wealth of Nations*. London, UK: W. Strahan and T. Cadell.

Southern, Richard W. 1968. "Aquinas, Thomas," In David L. Sills (ed.), *The International Encyclopedia of the Social Sciences*, vol. 1 374-377. U.S.A.: Crowell Collier and Macmillan.

Stiglitz, Joseph E. 1989. "Using Tax Policy to Curb Speculative Short-term Trading." *Journal of Financial Services Research* 3:2-3, 101-115.

Summers, Lawrence H. and Victoria P. Summers. 1989. "When Financial Markets Work Too Well: A Cautious Case for a Securities Transactions Tax." *Journal of Financial Services Research* 3:2-3, 261-96.

Sunstein, Cass R. and Richard H. Thaler. 2003. "Libertarian Paternalism Is Not an Oxymoron," *University of Chicago Law Review* 70:4, 1159-1202.

Thaler, Richard. 1985. "Mental Accounting and Consumer Choice." *Marketing Science* 4:3, 199-214.

Thaler, Richard and Cass R. Sunstein. 2008. *Nudge: Improving decisions about health, wealth, and happiness*. New Haven, CT: Yale University Press.

Taylor, Daniel M., and Janet R. Doria. 1981. "Self-Serving Bias and Group-Serving Bias in Attribution," *Journal of Social Psychology* 113, 201-211.

Teoh, Siew Hong, Ivo Welch, and TJ Wong. 1998a. "Earnings Management and the Post-Issue Performance of Seasoned Equity Offerings." *Journal of Financial Economics* 50:1, 63-99.

Teoh, Siew Hong, Ivo Welch, and TJ Wong. 1998b. "Earnings Management and the Long-term Market Performance of Initial Public Offerings." *Journal of Finance* 53:6, 1935-1974.

Trueman, Brett. 1986. "The Relationship between the Level of Capital Expenditures and Firm Value." *Journal of Financial and Quantitative Analysis* 21:2, 115-129.

Tversky, Amos, and Daniel Kahneman. 1973. "Availability: A Heuristic for Judging Frequency and Probability." *Cognitive Psychology* 5:4, 207-232.

Watts, Ross and Jerald Zimmerman. 1979. "The Demand for and Supply of Accounting Theories: The Market for Excuses." *The Accounting Review* 54:2, 273-305.

Waymire, Greg and Sudipta Basu. 2008. "Accounting Is an Evolved Economic Institution." *Foundations and Trends in Accounting* 2:1-2, 1-174.

Zak, Paul J. and Robert Kurzban and William T. Matzner. 2004. "The Neurobiology of Trust." *Annals of the New York Academy of Sciences* 1032, 224-227.