Designing a Choice Architecture for Regulators

**Abstract**: The emergence of behavioral public administration has led to increasing calls for public managers and policy makers to consider predictable cognitive biases when regulating individual behaviors or market transactions. Recognizing that cognitive biases can also affect the regulators themselves, this article attempts to understand how the institutional environment in which regulators operate interacts with their cognitive biases. In other words, to what extent does the “choice architecture” that regulators face reinforce or counteract predictable cognitive biases? Just as knowledge of behavioral insights can help regulators design a choice architecture that frames individual decisions to encourage welfare-enhancing choices, it may help governments understand and design institutions to counter cognitive biases in regulators that contribute to deviations from public interest policies. From these observations, the article offers some modest suggestions for improving the regulatory choice architecture.

Scholars have long recognized that individuals do not behave as textbook *homo economicus*, and a large and growing literature identifies cognitive biases that may lead people to make decisions or behave in ways that deviate from rational expectations. Such insights, largely drawn from psychology, have inspired the emergence of behavioral public administration scholarship (Battaglio et al. 2018; Grimmelikhuijsen et al. 2017). This scholarship has led to increasing calls for regulators to consider predictable cognitive biases when regulating individual behaviors or market transactions (Allcott and Sunstein 2015) and to frame the “choice architecture” to nudge individuals toward choices that will make them better off, by their own judgment (Thaler and Sunstein 2008).

Much of the behavioral economics literature focuses on correcting behavioral biases in the individuals targeted by policies, without acknowledging the possibility that regulators also face cognitive limitations and biases (Tasic 2009, 2011). Berggren (2012) finds that of the leading studies in behavioral economics that recommend “paternalistic policies,” 95.5 percent do not address the potential biases of the policy makers who will design or implement them. Also, in a survey of research applying behavioral economics insights to different actors involved in the political process, Schnellenbach and Schubert (2014) note that particularly little research has examined the biases that may affect regulators’ decisions. Much of the literature implicitly assumes that regulators have more expertise, experience, and data than lay decision makers, allowing them to avoid some of the cognitive irrationalities to which individuals may be subject (Tasic 2011).

However, as Sunstein (2013, 1872) acknowledges, “for every bias identified for individuals, there is an accompanying bias in the public sphere.” A limited but increasing body of scholarship has attempted to challenge the assumption of regulator rationality and recognize that regulators are subject to the same psychological limitations as individuals in private interactions (e.g., BIT 2018; Cooper and Kovacic 2012; Hirshleifer 2008; Tasic 2009, 2011; Viscusi and Gayer 2015).

Implicit in this literature, and more explicit in others (e.g., Lambert 2004; Smith 2017), is that in applying behavioral insights to interpret regulator behavior, it is important to consider the institutional settings in which regulators act. As human beings, regulators may not have superior (or inferior) cognitive abilities than other individuals. Yet they usually have specialized knowledge and operate within institutions constrained by historical practices, legislation, and executive orders. They make decisions that not only affect themselves but also bind others. These factors make regulators undeniably different from consumers, businesses, voters, and, in some cases, other public decision makers, such as politicians, legislators, and judges.

We suggest that more consideration be given to understanding the regulatory choice architecture, namely, the institutional incentives and constraints under which regulators make decisions, such as...
legislative constraints on regulators’ agenda setting, judicial review of regulations, and regulatory agencies’ organizational structure. Just as knowledge of behavioral insights can help regulators frame individual decisions in ways that lead people to make choices that improve their welfare, understanding the interaction between institutional settings and behavioral responses in public administration may help governments design choice architectures to counter cognitive biases in regulators, leading to public welfare improvements.

**Cognitive Biases**

As the psychology and behavioral science literature has demonstrated, individuals tend to rely on cognitive shortcuts or rules of thumb that may have provided evolutionary advantages (Smith 2003) but that in modern situations can lead to systematic errors (Tversky and Kahneman 1982). The nascent behavioral public administration scholarship has investigated various cognitive biases and heuristics, falling into the categories of accessibility, loss aversion, and overconfidence, among both citizens and public servants (Battaglio et al. 2018). We focus on four specific biases in these categories that have been frequently observed in regulators (Cooper and Kovacic 2012; Tasic 2009, 2011; Viscusi and Gayer 2015).

A widely recognized bias related to information accessibility is the “availability heuristic,” a mental shortcut in which people assess the probability of an outcome based on how easily it is brought to mind (Battaglio et al. 2018). It can affect people’s assessments of both the probability and the frequency of events and lead them to overreact to reduce the likelihood or consequences of a salient event, despite its low probability of occurrence (Tversky and Kahneman 1982).

Another widely studied bias related to accessibility is “confirmation bias,” the tendency to seek or interpret evidence in a way that supports existing beliefs (Battaglio et al. 2018). It reflects the observation that people do not perceive information objectively but tend to embrace information that confirms a previously held view, while ignoring or rejecting evidence against it (Schulz-Hardt et al. 2000).

A specific bias that triggers loss aversion is framing (Battaglio et al. 2018). Kahneman (2003) posits that the prevalence of loss or risk aversion is “an instance of narrow framing.” Narrow framing occurs when people passively accept the formulation of problems as given and consider decisions in isolation from other choices or within unreasonably short time horizons (Kahneman 2003; Kahneman and Lovallo 1993). Decisions made in narrow frames depart from risk neutrality, leading to inconsistent preferences and aversion to risk and losses (Kahneman 2003).

Moreover, people tend to be “overconfident” in their own ability to understand problems and make judgments (Kahneman 2011). Compared with other cognitive biases, overconfidence has been “underexplored” in the behavioral public administration literature (Battaglio et al. 2018), but it can reinforce biased judgments caused by other cognitive problems.

Public administrators and public managers have examined some of these biases, but findings are mixed as to whether biases lead public decisions to deviate from public interest outcomes (Bellé, Cantarelli, and Belardinelli 2018; Moynihan and Lavertu 2011; Roberts and Wernstedt 2019). The next section details how these biases apply to regulators and may lead regulatory decisions to deviate from public interest goals.

**Institutions Interact with Regulators’ Cognitive Biases**

Regulators are not immune from cognitive biases, yet their decision-making framework, or choice architecture, differs from that of individuals in the private sphere in important ways. Regulators can only act within the authority delegated through statutes, which constrains their agenda, the types of actions they can pursue, and often the time frames in which they must act (Yackee 2006). Congressional oversight and media attention motivate regulators to pay particular attention to publicly salient issues. This feedback is asymmetric in that a regulator’s failure to prevent an undesirable event brings unwanted negative attention but failure to allow a beneficial product largely goes unnoticed (Huber 1983). Further, regulators operate in mission-oriented agencies, often with other like-minded individuals who share their priorities and expertise.

U.S. law requires regulators to develop a record to support regulatory actions and to solicit and consider public comment on their proposed approach and justification. Long-standing executive orders require most regulators to base decisions on an evaluation of alternatives and a regulatory impact analysis (Clinton 1993; Reagan 1981). Yet statutory and judicial deadlines can constrain the amount of time agencies can spend developing regulations. Many significant regulations are subject to interagency review led by the Office of Information and Regulatory Affairs (OIRA) in the White House Office of Management and Budget before they are published (Clinton 1993). Once a regulation is published, affected parties may challenge it in court, which often results in rules being sent back to the agency for reconsideration. Absent an external stimulus (such as litigation), regulations are rarely evaluated once they are in effect (Aldy 2014). As illustrated in figure 1, some of these institutional factors may moderate regulators’ cognitive biases, whereas others may exacerbate them.

**Availability Heuristic**

Regulators’ expertise, access to information, and computational capacity may make them less susceptible to the availability heuristic. They often have better information on both the probability and the frequency of events than individual decision makers, which makes them less likely to form their own beliefs based on the apparent views of others (Seidenfeld 2002). Further, legislative and executive mandates to justify regulatory decisions with evidence-based analysis and public input may make their decisions less subject to “available” salient anecdotes (Kuran and Sunstein 1999).

On the other hand, some elements inherent in the institutional environment, such as asymmetric feedback with respect to outcomes (Huber 1983), may make regulators overly responsive to public opinion about risk priorities, leading to wasteful or even detrimental regulation of salient risks and lack of attention to potentially more significant issues (Cooper and Kovacic 2012; Kuran and Sunstein 1999). Further, since rulemaking is constrained by authorizing legislation, legislators, who lack subject matter expertise, are likely to direct policy makers to regulate in response to salient events. A frequently cited example is the Superfund statute, passed in response to publicity surrounding the chemical waste leak into Love Canal,
New York (Kuran and Sunstein 1999). Retrospectively, critics have suggested that insufficient evidence exists supporting actual health risks of that case, or of corresponding benefits of the law and implementing regulations (Kuran and Sunstein 1999; Viscusi and Hamilton 1999).

**Confirmation Bias**

Regulators have been observed to stick irrationally to their initial beliefs and preferences about an ambiguous situation or policy choice when they search for and interpret information (Cooper and Kovacic 2012; Tasic 2011). Consequently, they may erroneously interpret available data or observations as supporting their prior beliefs and infer correlation or even causation when none exists (Seidenfeld 2002).

Rulemaking deadlines limit the amount of time regulators have to analyze all the information available and thus induce regulators to focus attention on the information supporting their preferred proposals. For example, the tight rulemaking time frames that Congress established in the Affordable Care Act led regulators to omit consideration of regulatory impacts and alternatives in the enabling rules (Conover and Ellig 2012).

Such tendencies may be reinforced in group interactions when regulators work on policies with like-minded colleagues, leading to groupthink or group polarization (Schulz-Hardt et al. 2000; Seidenfeld 2002). Sunstein (2009, 86) warns that being surrounded by like-minded individuals can exacerbate extreme behavior, including “close-mindedness, involving a collective effort ‘to rationalize’ so as to discount warnings or information that might lead to reconsideration, and stereotyped views of enemies, as either too evil to warrant efforts at negotiation or ‘too weak and stupid to counter’ the group’s risky choices.”

**Narrow Framing**

Regulators work in agencies with specific missions (Carrigan 2017), such as protecting the environment or safety in the workplace, and they are rewarded for focusing on those problems without regard for consequences outside their scope. Such organizational settings intensify any cognitive myopia that individuals may exhibit. Further deepening myopic thinking, regulators self-select to work on policies in which they believe and are intrinsically motivated to pursue certain goals and regulatory approaches (Georgellis, Iossa, and Tabvuma 2011; Wilson 1989). The more expertise an individual develops in a domain, the less flexible he or she becomes in perceiving and solving a problem (Dane 2010). In energy- and fuel-efficiency standards, for example, scholars point out that regulators may be myopic in focusing exclusively on energy cost savings and assuming that consumers are irrational in forgoing the large postulated benefits associated with fuel-efficient products (Gayer and Viscusi 2013; Mannix and Dudley 2015).

**Overconfidence**

Experts can be particularly susceptible to overconfidence regarding their ability to understand problems and make judgments (Rachlinski and Farina 2002; Seidenfeld 2002). With their subject matter expertise, regulators may be overconfident that they have formulated the problem correctly and proposed appropriate policy interventions (Liu, Stoutenborough, and Vedlitz 2016; Tasic 2009, 2011). For example, critics suggest that financial regulators propose excessive transaction taxes in asset markets to limit speculation without considering the possible market adaptations that could internalize the social cost of irrational speculative trading (Hirshleifer 2008).

As noted earlier, executive orders require agencies to consider all available alternatives, and to assess all the costs and benefits of
a proposed regulatory action when developing a rule (Clinton 1993). Yet, to meet these requirements, regulators face incentives to present their analyses with confidence, rather than acknowledge uncertainty, limitations in the available data and information, or the extent to which different assumptions and causal models would alter predicted regulatory outcomes (Dudley and Peacock 2016; Wagner 1995).

Similarly, acknowledging uncertainties would invite legal challenges by groups adversely affected by a policy, so regulators have institutional incentives to defend their regulatory decision with confidence. Their analysis must show that they sufficiently understand the problems and potential impacts and must downplay uncertainty to avoid anything that might appear to be a conflict in the administrative record (Wagner 1995).

**Toward a Choice Architecture for Regulators**

Individuals responsible for designing regulatory policy, like individuals acting in the private sphere, rely on cognitive heuristics and shortcuts. As discussed in the previous section, the institutional framework in which regulators operate can affect these predictable human behaviors (figure 1). This suggests that a more consciously designed choice architecture could ameliorate rather than exacerbate the biases. We offer some modest suggestions for modifying institutional frameworks to make regulators more likely to pursue policies that meet normative public interest goals.

**Require Greater Transparency in the Evidence Supporting Regulation**

To avoid the problems of narrow framing, confirmation bias, and overconfidence, policies could require regulators to be very clear about which studies and assumptions they relied on and which they did not. Increased transparency in regulatory analysis and decision-making could enable external scrutiny of the evidence used to make policy decisions and thus encourage regulators to make more evidence-based decisions (BIT 2018). Therefore, it can diminish regulators’ institutional incentives to focus narrowly on certain policy areas or regulatory aspects, to selectively present evidence that supports a chosen policy, or to downplay uncertainty.

**Engage Competing Views at an Early Stage**

Institutional reforms that intentionally engage diverse and competing views could mitigate the problems of accessibility, narrow framing, and overconfidence (Larrick 2004; Schulz-Hardt et al. 2000). Interdisciplinary collaboration and review, both within agencies and between agencies, is important (Carrigan and Mills 2019). The requirement for public notice and comment is a beneficial institution in this regard, but it may not occur early enough in the rulemaking process to counteract confirmation bias (Carrigan and Shapiro 2016). Greater use of advance notices of proposed rulemaking; preliminary “back of the envelope” analyses that consider the effects of a wide range of alternatives (Carrigan and Shapiro 2016); or pre-rulemaking publication of risk assessment information to engage broad public comment on the proper choice of studies, models, and assumptions before any policy decisions are framed (Dudley and Mannix 2018), could also lessen confirmation bias.

The requirement for OIRA review of significant regulatory actions (Clinton 1993) reflects an implicit recognition on the part of the last five presidents that mission-oriented regulatory agencies may make biased decisions. Centralized review of regulations and their supporting analyses not only serves a crosscutting coordination function but is intended to hold regulatory agencies accountable for conducting required analysis and ensure that policies are responsive to the elected president (Clinton 1993). However, limited staff size and review time, along with other pressures and constraints, can limit OIRA’s effectiveness (Fraas 2011). Increasing resources for centralized review could make it more effective at constraining regulators’ biases. Many have suggested that a congressional office with similar responsibilities could supplement OIRA review and offer an additional institutional check, providing analysis that is independent of the executive branch and countering some of the behavioral and institutional incentives in agency rulemaking (e.g., Hahn and Litan 2003; President’s Council on Jobs and Competitiveness 2011).

**Improve Feedback Mechanisms**

One important difference between regulators and individuals acting on their own behalf is that the former face much more muted feedback signals regarding the impacts of their decisions (Cooper and Kovacic 2012; Viscusi and Gayer 2015). Because regulators’ decisions are binding on others and generally apply uniformly across the entire population, they are less affected by the consequences. They generally issue rules based on ex ante analyses of benefits and costs, but they rarely conduct retrospective review to determine the accuracy of those ex ante assumptions or evaluate the actual impacts of their regulatory actions (Aldy 2014). Unlike individuals interacting in market and social contexts, who can correct their biases by learning from feedback signals in the long run (Beales 2008), regulators have no equivalent mechanism for correcting biases and improving decisions. The feedback they do face tends to be asymmetric because overregulation (not permitting a beneficial action) tends to be invisible, while underregulation (permitting an action that causes harm) is visible and politically salient (Huber 1983). Cooper and Kovacic (2012, 50) observe that the “distinction between regulatory and market feedback is significant: marketplace performance directly measures consumer benefit from actions, whereas regulatory outputs have no necessary relationship to consumer welfare.”

To address this problem, agencies should be required, whenever possible, to design regulations from the outset in ways that allow variation in compliance. This would facilitate quasi-experimental techniques to gather and analyze data and outcome trends across different populations or different regions of the country and compare them against predictions (Coglanese 2012). Other institutional changes to incentivize more robust evaluation of regulations once they are in effect might include requiring agencies to test the validity of previous predictions before commencing new regulation (Dudley and Mannix 2018) or changing the “default” so that regulations sunset after a certain period unless affirmatively renewed, as opposed to continuing unless revised (Ranchordás 2015). Some have suggested that establishing an independent body responsible for reviewing the accumulated stock of regulations and making recommendations for the repeal of rules or sets of rules, rather than depending on regulatory agencies to self-evaluate (e.g., Greenstone 2015), could counteract problems associated with overconfidence and confirmation bias.
Consider Nonregulatory Alternatives  
Overconfidence often makes regulators unduly optimistic about the success of their own proposed policies (Cooper and Kovacic 2012). This may be particularly problematic to the extent that agencies rely on behavioral biases in the people to be regulated as a justification for regulating, as illustrated by the example of energy- and fuel-efficiency standards (Allcott and Sunstein 2015; Gayer and Viscusi 2013). Greater emphasis on first identifying a compelling public need and acknowledging that competition is a powerful and dynamic regulator could moderate this problem. Executive or legislative oversight could require agencies, as currently directed by executive orders, to present evidence that they have identified a material failure of competitive markets or public institutions that requires a federal regulatory solution and to provide an objective evaluation of alternatives, including the alternative of not regulating, and of the competitive and distributional impacts of different approaches (Clinton 1993).

Conclusion  
Recognizing that regulators are not immune from cognitive biases, this article has attempted to understand how the institutions in which they operate interact with those biases. It discussed four cognitive biases to which regulators may be particularly prone: the availability heuristic, confirmation bias, narrow framing, and overconfidence. Regulator expertise and access to data and analysis may ameliorate problems associated with availability, yet other institutional factors may aggravate these biases. Thus, observed regulator behaviors that appear contrary to the public interest may reflect the interaction of cognitive biases and rational regulatory responses to institutional incentives and constraints. The fact that regulators’ decisions not only affect them but are binding on others mutates feedback regarding the consequences of their actions, which may exacerbate these problems. Explicitly considering the interaction between predictable behavioral responses to cognitive challenges and predictable responses to the institutional environment in which regulators operate can help governments design choice architectures that lead to better regulatory processes and outcomes.

References  


