

Bounded Rationality in the Regulatory Process

By: Zhoudan Xie | July 23, 2019

Travelers may choose not to fly after a highly publicized airplane crash, while underestimating the greater risk of death on the road; car buyers [appear to](#) focus on the vehicle purchase price while undervaluing future gasoline cost savings; supervisors [tend to](#) judge an employee as either good or bad and then seek out evidence supporting their earlier judgment. Such irrational decision making is observed in everyday life and [recognized](#) by psychologists and behavioral economists. It has led to [increasing calls](#) for policy interventions to correct cognitive biases in consumers and other individual behavior in the market. However, as some [scholars](#) have [pointed out](#), an underlying, and perhaps ungrounded, assumption in these calls is that the public officials who develop and implement regulations can always make rational decisions.

Regulators are humans, not robots

Regulators are [typically](#) subject matter experts, economists, policy analysts, and attorneys in government agencies. They may have greater expertise, experience, and data than many other people, but they are still humans rather than robots. In a new [working paper](#), Susan Dudley and I explore how regulators can deviate from rational decision making when developing regulations.

The seminal [work](#) by Herbert Simon demonstrated that “objective rationality” is not always realistic due to the limits on human knowledge and reasoning. He asserted that individual behavior often can only achieve “[bounded rationality](#)” due to three cognitive limitations: limited recognition of available alternatives, incomplete knowledge of possible consequences, and imperfect anticipation of the values associated with future consequences.

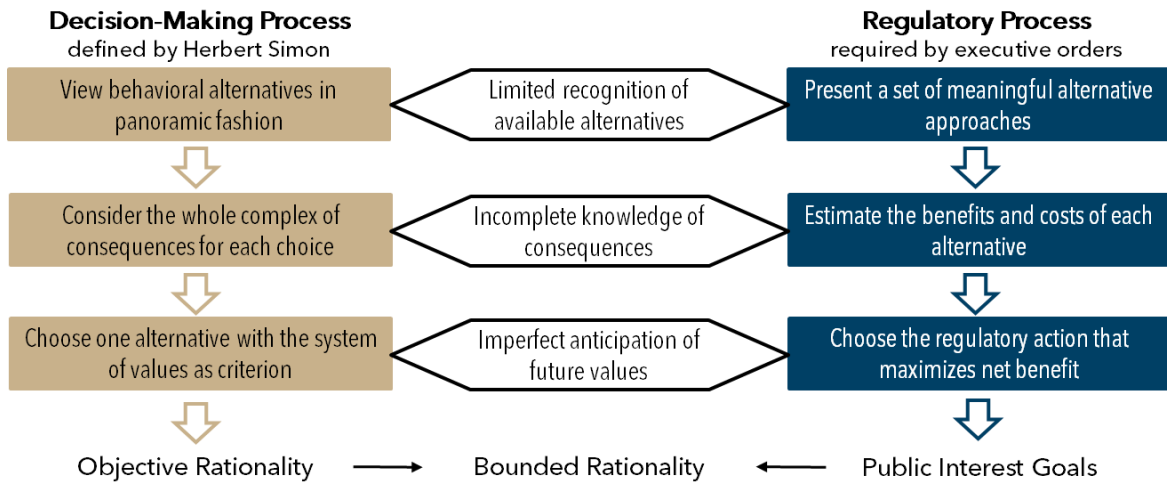
The same applies to regulators. When developing a regulation, federal agencies are [required](#) to identify meaningful alternative approaches, estimate the benefits and costs of each alternative, and choose the regulatory action that maximizes net benefits. However, just as individual decision-making deviates from objective rationality, regulation can deviate from public interest goals (Figure 1). Regulators may not identify the most cost-effective alternatives (including the alternative of not regulating) or appreciate the [unintended consequences](#) of their actions. Since regulatory impact analysis is based on *ex-ante* estimates, regulators may [rely on](#) unrealistic assumptions and unreliable data in estimating the benefits and costs of possible consequences.

In brief...

Regulators are humans, not robots. This simple truth reminds us that individual decision-makers responsible for developing and implementing regulations face the same cognitive limitations that consumers face in the marketplace. Institutional reforms to regulators' choice architecture may help mitigate these biases.

As such, like other individuals, regulators may focus on one or a few problems or alternatives at a time and rely on simple rules of thumb (i.e., heuristics) to make a “[satisficing](#)” (rather than optimal) decision. This can [lead to](#) a variety of cognitive biases and systematic errors in judgments and decisions.

Figure 1: An Analogy between the Decision-Making Process and Regulatory Process



Institutions further reinforce or counteract cognitive biases

Although regulators and individuals operating as consumers, investors, voters, etc. are all human and face the same cognitive limitations, the influence of cognitive biases on decision-making outcomes differs according to the specific context in which decisions are made. Regulators face incentives and operate within constraints set by administrative practices, legislative authority, executive orders, and organizational norms. These and other institutional factors can reinforce or counteract regulators’ cognitive biases in the regulatory process.

In our [working paper](#), Dudley and I discuss this complex interaction between the institutions in which regulators operate and their cognitive biases. In particular, we synthesize the major cognitive biases to which regulators may be prone from the emerging scholarship of [behavioral public choice](#) and focus on four widely discussed biases to explore how they interact with the unique institutions regulators face. For example, in developing risk regulation, regulators’ expertise in their subject matter and access to better data may help [overcome](#) the availability heuristic—a mental shortcut in which people assess the probability of an outcome based on “[the ease with which instances or occurrences can be brought to mind](#).” Conversely, their incentives to gain support from political officials and the public can make them less likely to take advantage of their greater knowledge and, instead, [react unduly to](#) public opinion about risk prioritization.

Institutional reforms may mitigate cognitive biases

Behavioral scholars [recommend](#) policy interventions that reframe the “choice architecture” people face in ways that counter behavioral biases and lead to choices that make them better off, either by restricting or incentivizing certain options or [nudging](#) people to make better choices. Would altering regulators’ institutional environment encourage regulatory decisions that make the public better off? Our [working paper](#) offers preliminary thoughts on practical institutional reforms to regulators’ choice architecture that might ameliorate some of the consequences of regulators’ bounded rationality, including:

- Increasing [transparency](#) regarding the studies and assumptions regulators relied on, and those they did not, in identifying problems, assessing alternatives, and estimating regulatory impacts.
- Engaging more diverse perspectives at early stages of rulemaking through an [advance notice of proposed rulemaking](#), [“back of the envelope” analyses](#), and a [more team-oriented structure](#) of agency work processes that employs a broader range of expertise.
- Improving feedback mechanisms by designing regulations that [facilitate](#) retrospective review and inviting [independent third-party review](#) of existing regulations.
- Encouraging regulators to consider different [regulatory forms](#) and non-regulatory alternatives.

Our research contributes additional insights to the existing scholarship studying bounded rationality and cognitive biases in regulators, and it highlights the importance of considering the interaction between institutions and cognitive biases. Future research could provide more empirical evidence on the relationship between specific institutional settings and systematic behavioral errors in the regulatory process and examine whether changing certain settings reduces those errors.