Florida State University College of Law

Scholarship Repository

Scholarly Publications

2002

Cognitive Loafing, Social Conformity, and Judicial Review of Agency Rulemaking

Mark Seidenfeld

Follow this and additional works at: <https://ir.law.fsu.edu/articles>

Part of the [Administrative Law Commons](#)

Recommended Citation

Mark Seidenfeld, *Cognitive Loafing, Social Conformity, and Judicial Review of Agency Rulemaking*, 87 *CORNELL L. REV.* 486 (2002),
Available at: <https://ir.law.fsu.edu/articles/16>

This Article is brought to you for free and open access by Scholarship Repository. It has been accepted for inclusion in Scholarly Publications by an authorized administrator of Scholarship Repository. For more information, please contact efarrell@law.fsu.edu.

COGNITIVE LOAFING, SOCIAL CONFORMITY, AND JUDICIAL REVIEW OF AGENCY RULEMAKING

Mark Seidenfeld†

INTRODUCTION	487
I. EXPERT DECISIONMAKING PROCESSES	491
A. Rule-Based Decisionmaking	492
B. Heuristic Biases	494
1. <i>Biases that Expertise Is Likely to Exacerbate</i>	496
a. <i>The Egocentrism Bias</i>	496
b. <i>Overconfidence</i>	498
2. <i>Biases that Expertise Is Likely to Mitigate</i>	499
a. <i>Technical Errors in Making Decisions</i>	499
b. <i>The Availability Heuristic and Biases Due to</i> <i>Ease of Recall</i>	501
c. <i>Consideration of Irrelevant Information</i>	502
3. <i>Biases that Do Not Correlate with Expertise</i>	504
a. <i>Confirmation Bias</i>	504
b. <i>Attraction and Compromise Biases</i>	506
II. THE PSYCHOLOGY OF ACCOUNTABILITY AND JUDICIAL REVIEW	508
A. Judicial Review as Accountability	509
B. Prerequisites for Beneficial Accountability	512
1. <i>Awareness of Accountability when Making a</i> <i>Decision</i>	513
2. <i>Perception of the Legitimacy of the Audience</i>	515
3. <i>Decisionmakers' Knowledge of Their Audience</i>	516
4. <i>Process- Versus Outcome-Based Accountability</i>	517
C. The Impact of Accountability on Agency Staff Members' Decisionmaking	522
III. THE INSTITUTIONAL PROCESS FOR FORMULATING RULES ...	526

† Professor, Florida State University College of Law. I want to thank the Florida State University College of Law for supporting the research for this Article. I would also like to thank Colleen Kelley for guiding me through some of the intricacies of decisionmaking theory and encouraging me with this project and Adam Hirsch for his editorial suggestions. In addition, the Article benefitted from comments at faculty workshops at the University of San Diego and Willamette law schools as well as at this Symposium, at which a draft of this Article was presented. Finally, I would never have written the Article but for the work of Cynthia Farina and Jeff Rachlinski who organized this Symposium.

A. The Structure and Dynamics of Agency Formulation and Promulgation of Rules	527
B. The Influence of Work Groups on Decisionmaking Biases	529
1. <i>The Potential for Groups to Attenuate Individual Decisionmaking Biases</i>	530
2. <i>The Potential for Groups to Amplify Individual Decisionmaking Biases</i>	535
a. <i>Group Polarization</i>	535
b. <i>Group Confirmation Bias</i>	538
c. <i>Inadequate Reporting and Utilization of Unshared Information</i>	539
d. <i>Groupthink and Related Phenomena</i>	541
IV. THE IMPACT OF JUDICIAL REVIEW ON RULEMAKING WORK GROUPS' STRUCTURE AND DYNAMICS	543
CONCLUSION	547

INTRODUCTION

The use of decisionmaking theories that go beyond the economic model of the rational actor has long been part of the study of administrative agencies. Herb Simon, the Nobel laureate economist, whom psychologists also like to recognize as one of their own, started developing his theory of bounded rationality as part of an inquiry into precisely how public administrators make decisions.¹ The sociologist and political scientist, James March, has focused to a great extent on political organizations, including administrative agencies, to illustrate the influence that institutions and behavioral rules have on individual decisionmakers.²

Law, however, has been slow to utilize theories of decisionmaking when analyzing the conduct of administrative agencies. Administrative law generally treats an agency as a black box.³ That body of law addresses how an agency interacts with the President, Congress, the judiciary, regulated entities, putative beneficiaries of regulation, and the media.⁴ With a few notable exceptions, administrative law ignores what goes on inside the agency.⁵ In line with the recent emphasis on

¹ Herb Simon published his first edition of *Administrative Behavior* in 1947, and of *Public Administration* in 1950. See HERBERT A. SIMON, *ADMINISTRATIVE BEHAVIOR: A STUDY OF DECISION-MAKING PROCESSES IN ADMINISTRATIVE ORGANIZATIONS*, at vii (4th ed. 1997); HERBERT A. SIMON ET AL., *PUBLIC ADMINISTRATION*, at xiii (Transaction Publisher 1991) (1950).

² See JAMES G. MARCH & JOHAN P. OLSEN, *REDISCOVERING INSTITUTIONS: THE ORGANIZATIONAL BASIS OF POLITICS* 16-17 (1989).

³ See RICHARD J. PIERCE, JR. ET AL., *ADMINISTRATIVE LAW AND PROCESS* (3d ed. 1999).

⁴ See *id.* at 7.

⁵ Those exceptions focus on the independence of administrative law judges (ALJs) within the agency and how the courts review factual findings when the agency's findings

economic analysis as a means of understanding how law works, administrative law scholarship in the last several decades has borrowed from positive political theory, which treats institutions like the various branches of government and administrative agencies as individual actors reacting rationally to outside influences.⁶ Thus, one can find models of how a rational agency will promote its interests by formulating a rule that comports with the agency's objectives to the greatest extent possible without going so far as to incite the judicial or political branches to countermand it.⁷

To be sure, even if administrative law does not concern itself directly with what occurs inside the black box of the agency, much recent legal scholarship does look at internal agency dynamics to try to predict the likely impact of administrative law doctrine. But, with the exception of isolated remarks such as that certain legal rules or agency structures could result in phenomena like groupthink,⁸ or that agency staff engage in boundedly rational decisionmaking,⁹ scholars treat internal agency dynamics by assuming that the participants in the process adhere to basic principles of rational decisionmaking. That assumption is not so much wrong as incomplete. At the margins, incentives, whether applied to an institution like an agency or to individuals, matter. Legal scholars, however, are beginning to realize that incentives are not the only things that matter. A host of other factors whose influence often cannot be reduced to the simple level of carrots and sticks also bear on how individuals within agencies perform deci-

differ from those of the ALJ. *See, e.g.,* *Universal Camera Corp. v. NLRB*, 340 U.S. 474, 496 (1951) (holding that, in order to pass muster under "substantial evidence" review, agency factual determinations must in some way take into account the examiner's determination); *Nash v. Bowen*, 869 F.2d 675, 681 (2d Cir. 1989) (upholding Secretary of Health and Human Service's policy to target and pressure ALJs with high rates of reversing denials of Social Security Disability claims).

⁶ *See, e.g.,* Jonathan R. Macey, *Separated Powers and Positive Political Theory: The Tug of War over Administrative Agencies*, 80 GEO. L.J. 671, 675-702 (1992) (using positive political theory to examine the effect of the judiciary and executive branch on Congress's efforts to control agency behavior); Matthew D. McCubbins et al., *Structure and Process, Politics and Policy: Administrative Arrangements and the Political Control of Agencies*, 75 VA. L. REV. 431, 433-45 (1989) (examining agencies through principal-agent theory, as well as through perfect equilibrium and structure-induced equilibrium theories).

⁷ *See* Jerry L. Mashaw, *Improving the Environment of Agency Rulemaking: An Essay on Management, Games, and Accountability*, LAW & CONTEMP. PROBS., Spring 1994, at 185, 246-47.

⁸ Thomas O. McGarity, *The Internal Structure of EPA Rulemaking*, LAW & CONTEMP. PROBS., Autumn 1991, at 57, 92.

⁹ *See* Clayton P. Gillette & James E. Krier, *Risk, Courts, and Agencies*, 138 U. PA. L. REV. 1027, 1100 (1990); Thomas O. McGarity, *Regulatory Analysis and Regulatory Reform*, 65 TEX. L. REV. 1243, 1271-72 (1987); Sidney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 U. KAN. L. REV. 689, 742 (2000).

sionmaking tasks and, hence, how agencies go about making decisions.¹⁰

Scholarship about judicial review of agency regulation, like administrative law scholarship generally, has proceeded by assuming, either implicitly or explicitly, that the agency and its staff act rationally. When public choice theory first burst onto the scene, agencies were portrayed as pawns for the benefit of private, rent-seeking interest groups, and their staffs,¹¹ captured by the very industries they were supposed to regulate.¹² One remedy was for the courts to review agency decisions actively to protect against the effects of such capture.¹³

Of late, active judicial review has been disfavored by most academics. In particular, numerous scholars have argued that judicial review of agency rulemaking imposes burdens on the agency and that the agency will, in response, resort to regulatory means less well suited than notice and comment rulemaking or will simply abandon regulation altogether.¹⁴ These conclusions implicitly follow from assumed rationality of agency regulatory processes; they reflect the basic economic principle that increasing the cost of a good—rulemaking—decreases the production of the good. Other scholars have contended that because agencies act defensively in response to potential judicial challenges, the rulemaking process is ossified and unduly costly.¹⁵ Im-

¹⁰ See Donald C. Langevoort, *Behavioral Theories of Judgment and Decision Making in Legal Scholarship: A Literature Review*, 51 VAND. L. REV. 1499, 1506–19 (1998) (surveying the use of behavioral decision theory in various legal disciplines); Jeffrey J. Rachlinski, *The "New" Law and Psychology: A Reply to Critics, Skeptics, and Cautious Supporters*, 85 CORNELL L. REV. 739, 743–63 (2000).

¹¹ See, e.g., Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807, 809–12 (1975); George J. Stigler, *The Theory of Economic Regulation*, 2 BELL J. ECON. & MGMT. SCI. 3, 3–6 (1971); see also DENNIS C. MUELLER, PUBLIC CHOICE II 229–46 (1989) (discussing the theory of rent seeking).

¹² See Thomas W. Merrill, *Capture Theory and the Courts: 1967–1983*, 72 CHI.-KENT L. REV. 1039, 1060–61 (1997). For a comprehensive description of the capture theory of agencies, see generally PAUL J. QUIRK, *INDUSTRY INFLUENCE IN FEDERAL REGULATORY AGENCIES* (1981).

¹³ See Merrill, *supra* note 12, at 1064–67.

¹⁴ See JERRY L. MASHAW & DAVID L. HARFST, *THE STRUGGLE FOR AUTO SAFETY* 151–52 (1990) (concluding that judicial review led the National Highway Traffic Safety Administration to abandon setting safety regulations in favor of recalls); R. Shep Melnick, *Administrative Law and Bureaucratic Reality*, 44 ADMIN. L. REV. 245, 247 (1992) (arguing that the risk of reversal of rulemakings for reasons an agency cannot predict or control will deter rulemaking generally); Richard J. Pierce, Jr., *Two Problems in Administrative Law: Political Polarity on the District of Columbia Circuit and Judicial Deterrence of Agency Rulemaking*, 1988 DUKE L.J. 300, 302–03 (1988) (same).

¹⁵ See, e.g., Thomas O. McGarity, *Some Thoughts on "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385, 1410–20 (1992) (offering specific examples of agencies stymied by judicial review); Richard J. Pierce, Jr., *The Unintended Effects of Judicial Review of Agency Rules: How Federal Courts Have Contributed to the Electricity Crisis of the 1990s*, 43 ADMIN. L. REV. 7, 8 (1991) (blaming judicial review for "policy paralysis" in many agency rulemaking contexts).

plicit in some of these criticisms is an assumption that one gets little benefit from the incentives that judicial review places on agency actors.¹⁶ At least two scholars have gone so far as to argue that judicial review has a negative impact on the quality of individual rulemaking decisions.¹⁷

This Article presents a modest defense of judicial review of rulemaking. Its thesis is that the psychology of individual decision-making biases and group decisionmaking dynamics suggests that judicial review does improve the overall quality of rules. The Article is modest in four respects. First, it addresses only arbitrary and capricious review of agency legislative rules;¹⁸ it does not address judicial review of issues of law such as interpretations of statutes or regulations.¹⁹ Second, it recognizes that there are significant limitations on the use of studies of decisionmaking. Psychological papers for the most part reflect outcomes of controlled studies in laboratory settings, and there is no way of knowing how these results will translate into the real world of agency decisionmaking.²⁰ Hence, the conclusions of this Article are tentative. Third, the Article recognizes that there is no objective metric for measuring how good a rule is. Those with differ-

¹⁶ See Shapiro, *supra* note 9, at 746.

¹⁷ See Frank B. Cross, *Pragmatic Pathologies of Judicial Review of Administrative Rulemaking*, 78 N.C. L. REV. 1013, 1044-57 (2000) [hereinafter Cross, *Pragmatic Pathologies*]; Pierce, *supra* note 15, at 26-27; see also Frank Cross, *Shattering the Fragile Case for Judicial Review of Rulemaking*, 85 VA. L. REV. 1243, 1313-14 (1999) [hereinafter Cross, *Shattering the Fragile Case*] (questioning the value of dialogue between agencies and the courts).

¹⁸ The Administrative Procedure Act (APA) definition of a rule includes statements by an agency about how it will interpret its authorizing statute or legislative rules, as well as statements about how the agency intends to implement its policies. 5 U.S.C. § 551(4) (2000). Unlike legislative rules, however, which must be formulated using at least notice and comment procedures, there are no processes specified for formulating interpretive rules and policy statements. See *id.* § 553(b) (2000). Although I believe that judicial review would improve the quality of these nonlegislative rules, the processes by which they are formulated vary so much from agency to agency and rule to rule that it would be difficult to discuss the details of how judicial review would influence those processes. Hence, for the sake of simplicity and to allow me to focus on how judicial review might influence some of the detailed internal agency processes that go into the formulation and adoption of a legislative rule, I limit my discussion to notice and comment rulemaking.

¹⁹ By this limitation, I mean to exclude review in which the court can dictate the substantive outcome to the agency, because in such cases to a great extent it is the court and not the agency that ultimately decides on the regulatory policy. Arbitrary and capricious review, unlike review of legal issues, generally allows a reviewing court only to remand for further consideration or explanation of issues about which the court did not find the agency's reasoning persuasive. Although arbitrary and capricious review, as currently applied, permits courts to impose impossible burdens on an agency upon remand, and thereby dictate the status quo as the ultimate outcome, in many cases an agency can and does adopt essentially the same rule with further explanation or minor modification. See William S. Jordan, III, *Ossification Revisited: Does Arbitrary and Capricious Review Significantly Interfere with Agency Ability to Achieve Regulatory Goals Through Informal Rulemaking?*, 94 Nw. U. L. REV. 393, 415-17 (2000).

²⁰ See Jennifer Arlen, *Comment: The Future of Behavioral Economic Analysis of Law*, 51 VAND. L. REV. 1765, 1769 (1998).

ent values and preferences may rate the same rule as wise or foolish. The discussion of rulemaking quality thus focuses only on the care that the agency takes in actually making the decision and the likelihood that the agency avoids known decisionmaking biases. Fourth, and perhaps most importantly, the Article does not address the detrimental impact that such review might have on the efficiency of the process, the propensity of the agency to use rulemaking, or the overall agenda the agency pursues. In short, the Article addresses the effect of judicial review on the quality of rulemaking decisions, but does not address whether, overall, arbitrary and capricious review is good or bad. Nonetheless, the Article attempts to take into account complex psychological influences on agency decisionmaking in analyzing whether arbitrary and capricious judicial review likely improves the quality of rulemaking.²¹ It thus adds to the quite extensive literature assessing the likely impact of judicial review by borrowing explicitly from the psychology of decisionmaking in trying to make that assessment.

I

EXPERT DECISIONMAKING PROCESSES

When individuals make decisions, they do not act as economists assume. Economists assume that an individual optimizes, a process that involves considering all potential alternatives and relevant factors, balancing the detrimental impacts of each alternative against its benefits, and choosing the alternative that maximizes some measure of the individual's preferences.²² In reality, individuals tend to make choices by use of decisionmaking rules. Which rules they apply varies from situation to situation, but within a particular context, individuals often

²¹ In discussing the impact of judicial review on agency rulemaking, I refer to the impact of such review on the agency staff that provides information and prepares analyses for the head of the agency, who is ultimately responsible for issuing a rule. Implicit in this discussion is an assumption that the staff effectively dictates the rule rather than that the agency head is free to choose the rule and is constrained only by legal and political parameters. This, of course, is an unrealistic simplifying assumption; agency staff presents information, analyses, and options that do not dictate the final rule but do constrain the ultimate decisionmaker's choice. The Article's conclusion, that judicial review improves the quality of rulemaking, remains valid because improving the quality of the staff's decisionmaking decreases the likelihood that the options presented to the agency head are tainted by biases.

²² Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q.J. ECON. 99, 99 (1955), reprinted in 2 HERBERT A. SIMON, *MODELS OF BOUNDED RATIONALITY: BEHAVIORAL ECONOMICS AND BUSINESS ORGANIZATION* 239, 239 (1982). This is not to say that economists assume away uncertainty and the costliness of information. See GARY S. BECKER, *THE ECONOMIC APPROACH TO HUMAN BEHAVIOR* 6 (1976). Rather, economists assume that the individual considers her lack of information and invests in such information only to the extent that the investment is likely to maximize the individual's preferences—that is, an individual invests in the optimal level of information. See *id.* at 6–7.

do not think about whether the rules they apply are appropriate or whether they maximize the net benefits of the decision. In addition, psychologists have shown that decisionmakers make cognitive errors that lead to systematic—that is, predictable—biases.²³ Although expertise and the group nature of agency decisionmaking can alleviate many such biases, it can also amplify some biases.²⁴ In order to better understand how judicial review affects the quality of agency decisionmaking, it is therefore helpful to review the potential problems that may beset such decisionmaking.

A. Rule-Based Decisionmaking

Optimization of complex decisions requires collecting and processing vast amounts of information. Individuals generally have neither the time to collect and analyze such information nor the capability of performing all the necessary comparisons that optimization entails.²⁵ Therefore, people simplify the cognitive task: instead of optimizing, they “satisfice.”²⁶ Satisficing entails considering alternatives until one is identified that meets a preset level of satisfaction.²⁷ Once that alternative is identified, the decisionmaker chooses it even though it may not be the best available alternative.²⁸

Even satisficing is an incomplete description of how individuals make complex choices among various alternatives. To satisfice, one must still determine what level of satisfaction is adequate and the source and order of alternatives that one will consider.²⁹ In addition, one must determine what information one will consider, how much analysis of benefits and detriments one will perform, and the kind of analysis one will use in making a decision. Although satisficing is simpler than optimizing, people generally rely on decisionmaking rules for these determinations.³⁰ By decisionmaking rule, I mean the use of predetermined categories into which a person places factual circumstances to derive an outcome.³¹

²³ See *infra* note 42 and accompanying text.

²⁴ See discussion *infra* Parts I.B.1–2, III.B.

²⁵ 3 HERBERT A. SIMON, *MODELS OF BOUNDED RATIONALITY: EMPIRICALLY GROUNDED ECONOMIC REASON* 295 (1997).

²⁶ *Id.*

²⁷ See *id.* at 295–96.

²⁸ See *id.* at 296.

²⁹ See *id.*

³⁰ See Xueguang Zhou, *Organizational Decision Making as Rule Following*, in *ORGANIZATIONAL DECISION MAKING* 257, 259 (Zur Shapira ed., 1997).

³¹ See JAMES G. MARCH, *A PRIMER ON DECISION MAKING: HOW DECISIONS HAPPEN* 58 (1994) (defining “rule following” as a three-step process that asks the decisionmaker to evaluate the kind of situation she is in, what kind of person she is with respect to the decision, and what a person of that kind does in a situation of the kind identified).

Decisionmaking rules apply even to fairly simple choices, like deciding where to eat lunch on a particular day. People do not consider all the restaurants in town and decide which is best. Rather, they limit the alternatives based on factors like the kind of food they are in the mood for, the time it takes to get to the restaurant, the speed of service, the price, and potentially a host of other factors. In fact, it would not be unusual for an individual to limit her consideration of restaurants to a handful that she frequents for lunch, and to determine which one of that handful satisfies her particular cravings at the time. When a regulator has to decide on standards such as the personal exposure limits for a toxic substance in the workplace, the decision-making factors can become much more complex, and the need for decisionmaking rules more crucial.³²

Decisionmaking rules are the product of experience. In an agency, decisionmaking rules may reflect the experience of the members of a particular office and may incorporate the office's feedback from previous decisions. These rules often are handed down as routines that govern an office's behavior in a manner that avoids unpleasant outcomes.³³ Decisionmaking rules may also reflect the professional training of those in the office.³⁴ Thus, such rules generally allow an office to utilize its learned experience and the expertise of its staff in a coherent and efficient manner. In addition to simplifying decisionmaking, by restricting the universe of relevant categories and therefore the universe of relevant information, rules also allow an office to resolve uncertainty in a predictable manner.³⁵

Although decisionmaking rules are self-imposed and can be modified without any formal procedures, they can nonetheless cause an agency to reach bad decisions. Agency staff tend to follow decision-making rules unthinkingly.³⁶ That is precisely the point: the agency

³² See Ronald A. Heiner, *The Origin of Predictable Behavior*, 73 AM. ECON. REV. 560, 565-67 (1983) (describing how organizations develop simple predictable behavior, such as norms, in response to the complexity of a decisional situation).

³³ See RICHARD R. NELSON & SIDNEY G. WINTER, AN EVOLUTIONARY THEORY OF ECONOMIC CHANGE 99 (1982) (asserting that "routinization of activity in an organization constitutes the most important form of storage of the organization's specific operational knowledge"); Barbara Levitt & James G. March, *Organizational Learning*, 14 ANN. REV. SOC. 319, 323, 327-29 (1988) (describing how experiential knowledge becomes part of an organization's memory); cf. Robert Axelrod, *An Evolutionary Approach to Norms*, 80 AM. POL. SCI. REV. 1095, 1109 (1986) (concluding from computer simulations that learning from experience can lead to norms, but also that, without a "metanorm" or some other external mechanism for supporting a norm, norms created by such learning can collapse).

³⁴ See JAMES Q. WILSON, BUREAUCRACY: WHAT GOVERNMENT AGENCIES DO AND WHY THEY DO IT 59-65 (1989).

³⁵ See Zhou, *supra* note 30, at 261.

³⁶ Cf. Dennis Chong, *Values Versus Interests in the Explanation of Social Conflict*, 144 U. PA. L. REV. 2079, 2084 (1996) (suggesting that habits that dictate choice—i.e., decision-making norms—can reflect mindless repetition).

uses the rule to avoid having to devote resources to thinking through the decision in light of every factor that might bear on the wisdom of that decision. But unthinking application can lead an agency to apply a decisionmaking rule outside the context for which the rule is appropriate.³⁷ Moreover, rules tend to outlive their usefulness;³⁸ an agency may continue to apply a decisionmaking rule even when the rule is far from optimal for the typical situation the agency faces. For an agency to change a rule, it needs feedback that the rule is not working satisfactorily. An agency usually will not alter a decisionmaking rule unless it faces a crisis that vividly calls into question the rule's benefits;³⁹ or the structure of the decisionmaking team changes to include individuals whose training and experience leads them to use different decisionmaking rules and hence to question the ones that the office has traditionally used;⁴⁰ or an external monitor such as the President, Congress, or the judiciary imposes a constraint that requires the agency to alter the rule.⁴¹ Thus, office norms and decisionmaking rules can lead to ad hoc suboptimal decisions by agency rulemaking staff.

B. Heuristic Biases

In addition to the ad hoc errors introduced by inappropriate use of office-specific decisionmaking rules, psychologists have identified certain decisionmaking rules or heuristics that most people tend to

³⁷ See MARCH, *supra* note 31, at 82-91 (explaining how biases in recalling and evaluating experiences, as well as in interpreting feedback regarding the outcomes to which rule application leads, can result in development of maladaptive rules); Hillel J. Einhorn, *Learning from Experience and Suboptimal Rules in Decision Making*, in JUDGMENT UNDER UNCERTAINTY: HEURISTICS AND BIASES 268, 273-76 (Daniel Kahneman et al. eds., 1982) [hereinafter JUDGMENT UNDER UNCERTAINTY] (explaining how feedback from outcomes can reinforce suboptimal decisionmaking rules); Heiner, *supra* note 32, at 568-70 (describing how the evolutionary process for developing rules that govern human behavior may not result in optimal behavior, and may even allow dysfunctional behavior to persist); cf. Eric A. Posner, *Law, Economics, and Inefficient Norms*, 144 U. PA. L. REV. 1697, 1711-25 (1996) (arguing that social norms, in general, can be inefficient).

³⁸ See B. GUY PETERS, *AMERICAN PUBLIC POLICY: PROMISE AND PERFORMANCE* 98-99 (3d ed. 1993); FRANCIS E. ROURKE, *BUREAUCRACY, POLITICS, AND PUBLIC POLICY* 30 (2d ed. 1976).

³⁹ See Zhou, *supra* note 30, at 278.

⁴⁰ Cf. DOUGLAS YATES, *BUREAUCRATIC DEMOCRACY: THE SEARCH FOR DEMOCRACY AND EFFICIENCY IN AMERICAN GOVERNMENT* 132 (1982) (asserting that "the force of [guild-like] professionalism is diminished by conflict among various professional groups over the shape and substance of policy").

⁴¹ See Zhou, *supra* note 30, at 268 (noting the influence of external legal requirements on internal decisionmaking norms); cf. Errol Meidinger, *Regulatory Culture: A Theoretical Outline*, 9 LAW & POL'Y 355, 370-72 (1987) (noting that statutes and court decisions can help structure an agency's regulatory culture, but cannot dictate that culture uniquely).

use, and that can lead to systematic biases in individual choices.⁴² Heuristics provide cognitive shortcuts, based on experiences that most of us share from everyday decisionmaking, that reduce the effort that one must put into decisions and yet still yield sufficient accuracy for such decisions.⁴³ For certain classes of decisions, however, the bias may render the decision insufficiently accurate.⁴⁴ Moreover, because the bias is predictable, there are often feasible alternative decision-making techniques that can avoid the biased judgments that result from use of heuristics.

Psychologists have discovered numerous heuristics that can lead to systematic bias. As commenters on this Article indicate, one might complain that such heuristics are shooting up like weeds and therefore that it is impossible to take them all into account when structuring agency decisionmaking processes. The argument is that if one corrects for one bias, he might unwittingly create another. Such biases, however, can be classified into typologies of cognitive errors and social influences. Heuristic biases might result from cognitive limitations; decisionmakers may simply lack the knowledge or ability to assess information accurately no matter how hard they try. For example, if one is not familiar with Bayesian statistics, one would not appreciate the need to consider base rates when evaluating how evidence bears on the likelihood of an event. Biases may result from memory, attention, or perceptual shortcuts in situations where the decisionmaker is capable of making unbiased decisions, but where everyday experience has led her to trust in rules of thumb rather than more formal analyses.⁴⁵ For example, a decisionmaker might overestimate the frequency of an occurrence that is salient and hence easily comes to mind. The actual frequency of the event often is something that the decisionmaker can look up. Biases may also result from social influences that cause the decisionmaker to consider factors that do not bear on the correctness of a decision. For example, a person may change an estimate of the probability of an event if she knows that others disagree with that assessment even though the others have no better information than she does about the probability. The person may be reacting to the uncertainty in her own estimation, or may simply wish to avoid being looked upon unfavorably by those who made a different assessment. If one structures decisionmaking processes to alleviate entire typologies of errors, one likely will reduce bias without creating new biases.

⁴² For a general discussion of heuristics and the biases to which they might lead, see JUDGMENT UNDER UNCERTAINTY, *supra* note 37, and SCOTT PLOUS, THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING 107–88 (1993).

⁴³ See PLOUS, *supra* note 42, at 109.

⁴⁴ *Id.*

⁴⁵ See *id.*

In fact, administrative decisionmaking already is structured to reduce some biases. In particular, the administrative process uses various forms of review, including judicial review, to hold decisionmakers accountable. Because this Article is concerned with the types of agency biases that judicial review might affect, I limit my discussion to those biases that most likely will be influenced by accountability. In addition, the administrative process relies on experts to search for and analyze information that bears on the ultimate decision, and such experts are less likely to fall into many heuristic traps that snag the unwary layperson. There are, however, also some biases to which experts may be more susceptible. In discussing biases that are affected by accountability, I organize the discussion according to whether the expertise of the decisionmaker is likely to amplify, mollify, or have no systematic effect upon the extent of bias.

1. *Biases that Expertise Is Likely to Exacerbate*

a. *The Egocentrism Bias*

Egocentrism is “an inability to take another’s perspective, which is tantamount to assuming that another’s perspective is precisely one’s own.”⁴⁶ Individuals tend overly to attribute their own knowledge—“beliefs, opinions, suppositions, attitudes, and related states of mind”⁴⁷—to others.⁴⁸ They do so because, in determining what others know, an individual starts from a base of what she knows, and adjusts to take into account special attributes that would make her own knowledge different from that of the average person.⁴⁹ An individual, however, often does not compensate sufficiently for the differences between herself and the average person, either because she is unable to assess accurately all of the ways in which her knowledge is unique, or because in the process of solving a particular problem in which the assessment of others’ knowledge is important, she simply fails to attend sufficiently to the fact that others differ from her.⁵⁰ As a result of inaccurately assessing others’ knowledge, a decisionmaker may incorrectly predict how others are likely to act in various situations,⁵¹ an assessment that agencies frequently must make when adopting regulations.⁵²

⁴⁶ Raymond S. Nickerson, *How We Know—and Sometimes Misjudge—What Others Know: Imputing One’s Own Knowledge to Others*, 125 PSYCHOL. BULL. 737, 738 (1999).

⁴⁷ *Id.* at 737.

⁴⁸ *Id.*

⁴⁹ *See id.* at 742.

⁵⁰ *See id.* at 747–51.

⁵¹ *See id.* at 750.

⁵² Commonly, an agency must determine the likelihood that putative beneficiaries of regulation will engage in conduct that subjects them to the risk that the regulation seeks to avoid, and that the regulation will lead them to avoid such risks. For example, Food and

Expertise is likely to exacerbate the egocentrism bias. At the simplest level, experts' knowledge differs more from that of the average person than does the knowledge of nonexperts, and this may make it more difficult for experts to correct for such differences.⁵³ More specifically, experts process information using cognitive structures that uniquely reflect their training and experiences, and it may be impossible for an individual to comprehend fully how others who do not share those cognitive structures are likely to process the same information.⁵⁴ Psychological studies of expert decisionmaking support this hypothesis. Individuals with expertise about equipment, like cellular phones, who themselves have developed skill in using such equipment were less accurate in predicting the time it would take a novice to perform a specified task with that equipment than were nonexpert experienced users.⁵⁵ One such study concluded that "the primary difference between those with more and those with less expertise was the accuracy with which they recalled their own novice performance of the task."⁵⁶

This hypothesis would also explain certain outcomes of the "ultimatum game."⁵⁷ In the game's simplest version, an individual is given a sum of money and told to divide it by making an offer to a second person.⁵⁸ If the offeree accepts the offer, the offeror pays him the offered sum and keeps the difference; if the offeree declines the offer, no one keeps anything.⁵⁹ Rational behavior would predict that the offeree should accept any offer, and that therefore the offeror should offer one cent to maximize what she receives.⁶⁰ In fact, individuals tend to offer more than this amount, and offerees turn down offers

Drug Administration regulations on labeling the nutritional content of food are predicated on the assumption that such labeling will lead consumers to alter unhealthy eating habits. Sometimes the agency must predict how regulated entities will react to regulation. For example, there is significant debate about the policy of the Environmental Protection Agency (EPA) to minimize penalties for violations reported by the violator as part of a voluntary self-auditing system. The EPA refuses to promise not to apply "gravity based" penalties—penalties over and above requiring the violator to disgorge any benefits gleaned by its failure to comply with regulations—for such self-reported violations. Regulated companies claim that there is little incentive to establish a system of finding and reporting violations if they are potentially subject to full punishment, while the EPA fears that these companies will abuse such a promise by being lax in taking care to prevent violations. Obviously, establishing a system for the efficient prevention and reporting of environmental violations depends greatly on whether the EPA's fears are justified.

⁵³ See Pamela J. Hinds, *The Curse of Expertise: The Effects of Expertise and Debiasing Methods on Predictions of Novice Performance*, 5 J. EXPERIMENTAL PSYCHOL.: APPLIED 205, 206 (1999).

⁵⁴ See *id.*

⁵⁵ See *id.* at 207–20.

⁵⁶ *Id.* at 218.

⁵⁷ For a general description of the literature on this game, see RICHARD H. THALER, *THE WINNER'S CURSE: PARADOXES AND ANOMALIES OF ECONOMIC LIFE* 21–35 (1992).

⁵⁸ *Id.* at 21.

⁵⁹ *Id.*

⁶⁰ See *id.* at 22.

that they find too low, even though they lose the value of that offer by doing so.⁶¹ In an experiment involving offers to and from students in both psychology and commerce classes, the commerce students both offered less and were willing to accept less than the psychology students.⁶² This could indicate either a different conception of fairness among the students in each class, or that some of the commerce students, trained in economics, acted in accordance with economic rationality. Of particular interest, however, is the fact that the commerce students' offers to psychology students, being lower than those of the psychology students' offers to psychology students,⁶³ risked a greater likelihood of having their offer rejected. The commerce students seemed to underestimate the possibility that psychology students would approach the offer from something other than a rational choice perspective and therefore might turn down an offer that one might consider insultingly low.⁶⁴

b. *Overconfidence*

Another bias to which experts may be more prone than novices is one in the confidence of predictions.⁶⁵ This bias can have an important impact on public policy decisions. For example, an agency often has to factor into its regulatory analyses the likely costs of regulation to determine if the regulation is economically justified or feasible.⁶⁶ In doing so, the agency will have to rely on predictions about the likely well-being of the future economy in assessing the impact of a rule on an industry. Overconfidence in a prediction about the health

⁶¹ See *id.* at 23–25.

⁶² Daniel Kahneman et al., *Fairness and the Assumptions of Economics*, 59 J. Bus. S285, S291 (1986).

⁶³ *Id.*

⁶⁴ Unfortunately, because the experiment did not include offers from commerce students to other commerce students, it does not reveal directly whether commerce students altered their offers depending on whether the offerees were similar to themselves or different. At least one other study, however, suggests that individuals with unique information do not sufficiently appreciate the extent to which people who lack that information will act differently. See Colin Camerer et al., *The Curse of Knowledge in Economic Settings: An Experimental Analysis*, 97 J. POL. ECON. 1232, 1235–44 (1989) (demonstrating that business students who were well informed about some relevant economic variables inaccurately predicted the forecasts of less informed people regarding corporate earnings, even when they had an incentive to make accurate predictions).

⁶⁵ I am indebted to Professors Jeff Rachlinski and Cynthia Farina's Article in this Symposium for informing me of the relationship between expertise and biases in confidence. See Jeffrey J. Rachlinski & Cynthia R. Farina, *Cognitive Psychology and Optimal Government Design*, 87 CORNELL L. REV. 549, 558–61 (2002).

⁶⁶ See Occupational Safety and Health Act of 1970, 29 U.S.C. § 655(b)(5) (1994) (providing criteria for Occupational Safety and Health Administration (OSHA) to set standards to exposure of toxic substances); Exec. Order No. 12,866, 3 C.F.R. 638 (1993) (requiring agencies to perform cost-benefit analyses for rules that have a significant impact on the economy), *reprinted in* 5 U.S.C. § 601 (2000).

of the economy can lead an agency to impose regulations that are more onerous than the legal standard under which the agency operates would justify.

Individuals tend to rely on the weight of evidence—that is, how determinative the evidence would be were it reliable when making decisions: the greater the weight, the more confident they are in their predictions. Yet, statistically, confidence should be a product of the quality of the evidence as well. Those asked to make predictions often ignore the quality of evidence. For example, it is well documented that predictions about future events depend more on the proportion of past events that agree with the prediction without much regard to the sample size of the historical evidence.⁶⁷ This causes individuals to underestimate appropriate confidence when events are very predictable and to overestimate confidence when events are unpredictable.⁶⁸ Experts are less likely to exhibit inappropriate underconfidence because they get frequent and accurate feedback regarding highly predictable outcomes, which allows them to calibrate their confidence with reality for such outcomes. For unpredictable events, however, experts tend to rely on “rich models of the system in question” and to ignore the quality of the data, which provides experts with false confidence about the likelihood of predictions that flow from these models.⁶⁹

2. *Biases that Expertise Is Likely to Mitigate*

In spite of the psychological pitfalls that expertise brings to decisionmaking groups, expertise nonetheless may mitigate other human errors and biases. In particular, expertise may decrease technical errors, lessen the group’s reliance on easily recalled events, and also diminish the consideration of irrelevant information. A discussion of each potential benefit follows.

a. *Technical Errors in Making Decisions*

The wisdom of many decisions that agencies make depends on the correct use of numerous technical criteria. For example, decisions involving uncertainty require analysis of statistical probabilities, and it is well established that individuals often ignore base rates in estimating the likelihood of an occurrence given the observation of certain evidence.⁷⁰ Individuals also fail properly to adjust the confi-

⁶⁷ See Dale Griffin & Amos Tversky, *The Weighing of Evidence and the Determinants of Confidence*, 24 COGNITIVE PSYCHOL. 411, 413 (1992).

⁶⁸ See *id.* at 430.

⁶⁹ See *id.*

⁷⁰ When evaluating the probability of an event given some evidence, individuals are likely to ignore base rates when they are incidental, rather than causally related, to evidence and when the evidence is more specific than the base rate information. See Amos

dence of predictions based on multiple inputs to reflect the correlation of these inputs.⁷¹ These biases, if reflected in administrative decisionmaking, can cause an agency to predict the probability of an event inaccurately or to underestimate the uncertainty surrounding such a prediction. When making investment decisions, the old economic adage advises that one should ignore sunk costs, but people intuitively tend to let such costs influence their choices.⁷² This has obvious implications for agency rules that depend on evaluations of the cost of investments by regulated entities.

Certainly, experts who are trained to use technical decision rules will perform better than laypeople who are unaware of the rules. Therefore, one might expect agency experts not to suffer from biases caused by failure to use such rules. Experts, however, often are unaware of the proper task structure for the particular decisions they make. In addition, experts may not receive the kind of feedback necessary for them to realize that alternatives to the technical decision-making rule that they should use are inaccurate, and, hence, may fail to use proper technical rules.⁷³ Even those who are aware of such rules often fail to utilize them when making decisions. For example, business administration students asked to make investment decisions failed to heed the sunk cost adage, even when they were told to evaluate the pros and cons for their decisions thoroughly.⁷⁴ It appears that

Tversky & Daniel Kahneman, *Evidential Impact of Base Rates*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 37, at 153, 155–59. Even when individuals do take base rates into account, however, they frequently fail to adjust their probability evaluations sufficiently. See *id.* at 154.

⁷¹ Individuals tend to judge the likelihood of an outcome by how representative it is of the evidence with which they are presented. Multiple inputs that are highly correlated often share traits that make them representative of an outcome. As a result, the more correlated inputs are, the more they tend to reinforce predictions of an outcome and make evaluators more confident in their predictions, even though statistically, the reliability of predictions decreases as the correlation of inputs increases. See Daniel Kahneman & Amos Tversky, *On the Psychology of Prediction*, 80 PSYCHOL. REV. 237, 248–49 (1973).

⁷² See Hal R. Arkes & Catherine Blumer, *The Psychology of Sunk Cost*, in JUDGMENT AND DECISION MAKING 97, 99–103 (Terry Connolly et al. eds., 2d ed. 2000) [hereinafter JUDGMENT AND DECISION MAKING].

⁷³ See Einhorn, *supra* note 37, at 282 (explaining how lack of knowledge of the structure of a decisionmaking task can render information about decision outcomes irrelevant for providing feedback on decisionmaking rules); see also Colin F. Camerer & Eric J. Johnson, *The Process-Performance Paradox in Expert Judgment: How Can Experts Know So Much and Predict So Badly?*, in RESEARCH ON JUDGMENT AND DECISION MAKING 342, 356 (William M. Goldstein & Robin M. Hogarth eds., 1997) [hereinafter RESEARCH ON JUDGMENT AND DECISION MAKING] (noting that “inaccurate [decisionmaking] rules may persist because experts who get slow, infrequent, or unclear feedback will not learn that their rules are wrong”).

⁷⁴ See Itamar Simonson & Barry M. Staw, *Deescalation Strategies: A Comparison of Techniques for Reducing Commitment to Losing Courses of Action*, 77 J. APPLIED PSYCHOL. 419, 422–24 (1992); see also Itamar Simonson & Peter Nye, *The Effect of Accountability on Susceptibility to Decision Errors*, 51 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 416, 430–32 (1992) (reporting similar results when business administration students were asked to solve

experts, like laypeople, are apt to use appealing rules of thumb in making decisions that differ from, and may conflict with, technical decision rules appropriate for the choice.

b. *The Availability Heuristic and Biases Due to Ease of Recall*

Individuals tend to rely on the availability heuristic—the facility with which they can recall a type of event—as an indication of the probability that such an event will reoccur. The availability heuristic leads individuals to overestimate the probability of an event that comes easily to mind.⁷⁵ This bias can cause a decisionmaker to attribute cause unduly to a salient event or to predict a greater likelihood of occurrence of events that he remembers.⁷⁶ An example of the impact of bias from the availability heuristic may be the oft-stated statistic in legal scholarship that virtually every rule promulgated by the Environmental Protection Agency (EPA) is challenged in court.⁷⁷ In fact, depending on what one counts as a rule, only three to twenty-six percent of EPA rules actually are challenged, and only about thirty-three percent of major rules, those rules requiring a regulatory impact analysis, are judicially reviewed.⁷⁸ The difference between the folklore and reality may well reflect that rules subject to challenge are much more salient in the minds of members of the agency and hence easier for them to recall, leading agency members to believe that eighty percent or more of all rules were challenged.⁷⁹

One might expect expertise to mitigate the propensity of decisionmakers to overstate the probability of easily recalled events. Presumably, experts study and know the likelihood of the occurrence of events that relate to their expertise. Moreover, experts deal with simi-

problems not explicitly involving investment, but raising the issue of whether to ignore sunk costs).

⁷⁵ For a general discussion of the availability heuristic and the biases that it can cause, see Amos Tversky & Daniel Kahneman, *Availability: A Heuristic for Judging Frequency and Probability*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 37, at 163.

⁷⁶ PLOUS, *supra* note 42, at 121.

⁷⁷ E.g., KAY LEHMAN SCHLOZMAN & JOHN T. TIERNEY, ORGANIZED INTERESTS AND AMERICAN DEMOCRACY 367 (1986) (reporting that virtually every regulation issued by agencies such as the EPA and OSHA are challenged in court); WILSON, *supra* note 34, at 284 (asserting that 80% of EPA rules wind up in court).

⁷⁸ Cary Coglianese, *Assessing Consensus: The Promise and Performance of Negotiated Rulemaking*, 46 DUKE L.J. 1255, 1298–1301 (1997) (finding that 26% of all EPA rules issued from 1987 to 1991 and 35% of major EPA rules issued from 1980 to 1991 were challenged); Christopher H. Schroeder & Robert L. Glicksman, *Chevron, State Farm, and EPA in the Courts of Appeals During the 1990s*, 31 ENVTL. L. REP. (ENVTL. L. INST.) 10,371, 10,375 & n.40 (Apr. 2001) (reporting that 33% of EPA major rules issued during this period were challenged, 3% of all EPA rules issued in the 1990s resulted in decisions in the courts of appeals).

⁷⁹ The figure of 80% for rule challenges has been traced to the first EPA Administrator, William Ruckelshaus, but was repeated by at least two other Administrators, Lee Thomas and William Reilly. Coglianese, *supra* note 78, at 1296–97.

lar situations repeatedly, and hence get feedback on how well their decision rules work. Hence, if experts are apt to overestimate the occurrence of an event, they may have compensating decision rules that minimize the impact of that overestimation on their final decision.⁸⁰

There are, however, also reasons to believe that experts may be more susceptible to the availability heuristic than are laypeople. By the very nature of expertise, when considering events, experts employ cognitive structures unique to their training and experience. Hence, they may be led to view evidence of the occurrence of an event from a particular perspective that obscures the possibility that their view of the evidence is biased.⁸¹ Experts also have different information sets from which they draw examples of phenomena. For these reasons, experts may be more likely to rely on ease of recall for an event than laypeople who may be aware of the limits of their knowledge and hence more uncertain when asked to evaluate situations with which they have little experience.⁸² Moreover, the fact that experts are asked to evaluate similar situations repeatedly does not guarantee that they will factor feedback from outcomes in order to correct inaccuracies that result from a reliance on ease of recall. For complex decisions, the outcome may not alert the decisionmaker that the problem was caused by reliance on the ease of recall of specific events.⁸³

c. *Consideration of Irrelevant Information*

A third psychological bias that expertise is likely to mitigate is the consideration of irrelevant information, also known as the "dilution effect." This effect describes the tendency of nondiagnostic information to dilute the accuracy of predictions that people would have made had they been presented with only diagnostic information.⁸⁴ In other words, decisionmakers allow irrelevant information to alter the decisions that they would otherwise choose by considering only relevant information. For example, individuals gave markedly different predictions of the grade point average (GPA) of a student who studies three hours a week than they did for a student who studies thirty-one

⁸⁰ See Rachlinski & Farina, *supra* note 65, at 560-62.

⁸¹ See Shelley E. Taylor, *The Availability Bias in Social Perception and Interaction*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 37, at 190, 197 (describing how cognitive structures can lead the use of the availability heuristic to alter predictions by decisionmakers, and giving as an example how predictions by academics and sports enthusiasts might differ).

⁸² See Leigh Ann Vaughn, *Expertise and Use of Experienced Ease or Difficulty of Recall for Social Judgments* 68-71 (1998) (unpublished Ph. D. Thesis, University of Michigan) (on file with author).

⁸³ This is a particular way in which a decisionmaker's failure to appreciate the structure of the task facing her can make feedback irrelevant. See Einhorn, *supra* note 37, at 281-82.

⁸⁴ Philip E. Tetlock & Richard Boettger, *Accountability: A Social Magnifier of the Dilution Effect*, 57 J. PERSONALITY & SOC. PSYCHOL. 388, 389 (1989).

hours a week.⁸⁵ However, the addition of irrelevant information, such as the number of plants the student keeps, or whether the student believes women should be free to choose abortion during the first three months of pregnancy, caused individuals to modify their predictions significantly.⁸⁶

The impact of irrelevant information in psychology experiments demonstrating the dilution effect stems from two psychological phenomena. The first phenomenon relates to the use of the cognitive heuristic of representativeness: people "select or order outcomes by the degree to which the outcomes represent the essential features of the evidence."⁸⁷ Thus, in the example of the prediction of a student's GPA, a student who studies only three hours a week is more representative of a poor student than one who studies thirty-one hours a week. When irrelevant information is introduced, however, the image that the decisionmaker conjures up in making the prediction is no longer as characteristic of the extreme predicted outcome for the simple reason that the evidence is more complex.⁸⁸ Keeping plants is indicative of neither a good nor bad student, so that a student who keeps plants and studies only three hours a week is not as representative of a bad student as is a student who simply studies only three hours a week. The representativeness heuristic causes the decisionmaker to moderate his prediction. The second phenomenon stems from the norms of social discourse. When a subject in an experiment is given a task by the experimenter, he expects that the experimenter will provide honest, relevant, and appropriately specific information.⁸⁹ Therefore, a decisionmaker will assume that all the information he is given will be relevant to his task, and will try to take all the information into account in making his decision.⁹⁰

The ramifications for agency rulemaking of the demonstrated propensity of individuals to use irrelevant information is potentially enormous. Agency staff must sift through enormous amounts of information relating to numerous aspects of the rule such as efficacy, cost, uncertainty, and enforceability.⁹¹ Much of the information that staff will come across, including information provided by those who

⁸⁵ *Id.*

⁸⁶ *Id.*; Henry Zukier, *The Dilution Effect: The Role of the Correlation and the Dispersion of Predictor Variables in the Use of Nondiagnostic Information*, 43 J. PERSONALITY & SOC. PSYCHOL. 1163, 1169 (1982).

⁸⁷ Daniel Kahneman & Amos Tversky, *On the Psychology of Prediction*, in JUDGMENT UNDER UNCERTAINTY, *supra* note 37, at 48.

⁸⁸ Philip E. Tetlock et al., *The Dilution Effect: Judgment Bias, Conversational Convention, or a Bit of Both?*, 26 EUR. J. SOC. PSYCHOL. 915, 916 (1996).

⁸⁹ *Id.* at 916-17.

⁹⁰ *See id.*

⁹¹ *See* CORNELIUS M. KERWIN, RULEMAKING: HOW GOVERNMENT AGENCIES WRITE LAW AND MAKE POLICY 58-60 (2d ed. 1999).

would be subject to the rule as well as those who stand to benefit from it, will be irrelevant. The use of such information in formulating and adopting a rule would seem to lead to unpredictably suboptimal regulations.⁹² If the cause of the dilution effect, however, is the incorrect assumption that the norms of social discourse apply in the experimental setting, then the effect is not likely to be significant in the agency rulemaking context. Agency decisionmakers are not given a set of information that they presume to be relevant. Rather, they gather the information that they consider relevant; to the extent agency staff members obtain information from those with stakes in the outcome, they understand that the information might be irrelevant and even misleading.⁹³

One can also reasonably assume that expertise will mitigate the consideration of irrelevant information. One of the attributes of expertise is the ability to filter relevant from irrelevant information. Therefore, whatever the cause of the dilution effect, one would expect experts to be significantly less susceptible to it than nonexperts. Nonetheless, there is experimental evidence that even highly trained experts are prone to rely on irrelevant information when making decisions within their areas of special knowledge.⁹⁴

3. *Biases that Do Not Correlate with Expertise*

a. *Confirmation Bias*

Decisionmakers have a tendency to confirm an initial hypothesis in the face of later-acquired disconfirming evidence, even though the hypothesis may not have been based on substantial or reliable evidence.⁹⁵ This bias manifests itself in the decisionmaker being prone to search for information that confirms the hypothesis, as well as to interpret information that he has as confirming the hypothesis.⁹⁶

⁹² "Obtaining accurate, relevant information constitutes the central problem for [an] agency engaged in standard setting." STEPHEN G. BREYER, *REGULATION AND ITS REFORM* 103 (1982); cf. KERWIN, *supra* note 91, at 102 (noting that the complexity of the information that an agency needs "can be a serious obstacle to writing high-quality rules").

⁹³ See BREYER, *supra* note 92, at 102-03 (noting that staff will seek to test the validity of information it receives in comments on a proposed rule).

⁹⁴ See Camerer & Johnson, *supra* note 73, at 351 (explaining that experts systematically use decisionmaking rules and cues that are not highly correlated with outcomes); Gary J. Gaeth & James Shanteau, *Reducing the Influence of Irrelevant Information on Experienced Decision Makers*, in *JUDGMENT AND DECISION MAKING*, *supra* note 72, at 305, 316 (describing how expert soil judges were adversely influenced by irrelevant factors in evaluating soil quality, but could be trained to ignore such factors).

⁹⁵ See generally Dieter Frey, *Recent Research on Selective Exposure to Information*, in *ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY* 41, 42 (Leonard Berkowitz ed., 1986) (noting that "people prefer information that supports their decisions . . . and avoid information that contradicts these cognitions").

⁹⁶ *Id.* at 44; David M. Sanbonmatsu et al., *Overestimating Causality: Attributional Effects of Confirmatory Processing*, 65 J. PERSONALITY & SOC. PSYCHOL. 892, 893 (1993). The tendency

There are various cognitive explanations for the confirmation bias. Confirming information search and analysis can reduce the dissonance that one might feel about the decision.⁹⁷ Simply forming a hypothesis appears sufficient to trigger dissonance-reducing motivations for information search and analysis.⁹⁸ Confirming search and analysis also allow an individual to maintain his cognitive schemas for organizing relevant information, while conflicting evidence and interpretations might require revamping those schemas.⁹⁹ Hence, the confirmation bias also helps reduce cognitive effort and provide closure regarding such organizing schemas.

The confirmation bias can cause a decisionmaker to be overconfident about his predictions. As already noted, overconfidence can lead to regulations that misestimate the efficacy of a regulatory solution or the feasibility and cost of compliance.¹⁰⁰ In addition, the confirmation bias can also lead a decisionmaker to attribute cause for events erroneously. When testing an hypothesized cause, individuals often restrict their consideration to conditions under which the event is hypothesized to occur.¹⁰¹ This can mask a broader underlying cause for the event.¹⁰² For example, a regulator may hypothesize that living near hazardous waste storage facilities might contribute to heart disease. The regulator will then collect extensive evidence of the incidence of heart disease for those living near such facilities and find that it is significantly greater than for the population as a whole. It still might be incorrect to conclude that proximity to such facilities contributes to heart disease; for example, it may be that those living near such facilities are poorer and less well educated about diet, and that when one corrects for those factors, the incidence of heart disease for those living near hazardous waste facilities is not elevated. The regulator would never discover the true cause of the greater incidence of heart disease unless he broadened his set of potential causes to include lower socioeconomic status.

to seek confirmation of a hypothesis, however, is complex; it can lead to a decisionmaker searching for easily rebutted but seemingly conflicting evidence as well as confirming evidence. See Frey, *supra* note 95, at 52–53.

⁹⁷ See Frey, *supra* note 95, at 71–72; Stefan Schulz-Hardt et al., *Biased Information Search in Group Decision Making*, 78 J. PERSONALITY & SOC. PSYCHOL. 655, 655 (2000).

⁹⁸ See J. Edward Russo et al., *The Distortion of Information During Decisions*, 66 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 102, 107 (1996); Schulz-Hardt et al., *supra* note 97, at 658.

⁹⁹ See Frey *supra* note 95, at 72; Russo et al., *supra* note 98, at 108.

¹⁰⁰ See *supra* text accompanying notes 91–93.

¹⁰¹ See Sanbonmatsu et al., *supra* note 96, at 899.

¹⁰² See *id.*

b. *Attraction and Compromise Biases*

Two other biases that affect individual decisionmaking are the attraction and compromise biases. Both reflect nonrational reactions to the addition of options to a prior set of available outcomes. The attraction bias causes individuals to choose an alternative when the available set of outcomes includes one that is close but inferior to one of the initial choices.¹⁰³ The compromise bias causes individuals to avoid choosing extreme outcomes.¹⁰⁴

According to rational choice theorists, any choice between outcomes can be seen as being based on the values of the outcome in terms of various attributes. For example, if one is choosing a camera, one might evaluate it based on the quality of the pictures it is capable of producing and the price.¹⁰⁵ Suppose that initially two choices are available—a cheap camera that can take adequate pictures and a more expensive camera capable of taking pictures of a high but not professional quality. If one were to add to these choices a camera capable of taking pictures of slightly lower quality than the cheap camera but costing slightly more, that option should not affect the initial choice between the initial alternatives. The added option is inferior to the cheap camera both in terms of quality and price and hence should be dismissed as irrelevant. In fact, however, the addition of this rationally irrelevant option leads individuals to choose the cheap camera more frequently than they would if they had only the initial two choices as options. This is an illustration of the attraction bias; the addition attracts decisionmakers to choose the outcome that dominates the added outcome on both attributes.¹⁰⁶

Consider again the initial choice between the cheap camera that takes adequate pictures and the expensive camera that takes higher quality pictures. Suppose that the decisionmaker is given a third option of purchasing a camera capable of taking professional grade pictures but that is significantly more expensive than the initial high-quality camera. Rationally, one would expect this choice to siphon off some of the demand from the high-quality nonprofessional camera

¹⁰³ See Joel Huber et al., *Adding Asymmetrically Dominated Alternatives: Violations of Regularity and the Similarity Hypothesis*, 9 J. CONSUMER RES. 90, 95–96 (1982); Itamar Simonson, *Choice Based on Reasons: The Case of Attraction and Compromise Effects*, 16 J. CONSUMER RES. 158, 160 (1989).

¹⁰⁴ Simonson, *supra* note 103, at 161–62; Itamar Simonson & Amos Tversky, *Choice in Context: Tradeoff Contrast and Extremeness Aversion*, 29 J. MARKETING RES. 281, 292 (1992).

¹⁰⁵ This example is taken from one of the experiments reported in Eldar Shafir et al., *Reason-Based Choice*, in RESEARCH ON JUDGMENT AND DECISION MAKING, *supra* note 73, at 69, 82–84. For simplicity, the example assumes that the choice is based on only two attributes, although there is no reason to assume that either the attraction or the compromise bias would be any less prevalent in the more realistic situation where the choice is based on a multitude of attributes.

¹⁰⁶ *Id.* at 83.

and to have little effect on the demand for the cheap camera. Someone who already decided the tradeoff in favor of price over quality would be unlikely to be affected by the addition of an option providing higher quality at even greater price. In fact, studies show that the addition of the professional-grade camera will cause an increase in the demand for the high-grade camera—the compromise choice, so to speak—relative to the cheap camera.¹⁰⁷

The attraction and compromise biases arise when choices involve tradeoffs between non-commensurate attributes.¹⁰⁸ There are no objective means for choosing the correct tradeoff between one such attribute and another. In the camera example above, the tradeoff between quality and price depends on the individual's needs and preferences for picture quality versus the goods that she could buy with money saved by compromising that quality. Individuals, however, often make such choices by reasoning about them; people try to come up with arguments for why they should place greater weight on one attribute than on another, and where to draw the line in trading off such attributes.¹⁰⁹ The presence of an option that is clearly inferior to one of the initial outcomes provides a reason for opting for that initial outcome. Similarly, the presence of a more extreme outcome provides an argument that the tradeoff inherent in choosing an option that is in the middle on scales for both attributes is reasonable because it does not entirely sacrifice one attribute for the other. Although these biases have been established primarily in consumer decisionmaking, similar context-based biases have been shown to affect experts' decisions.¹¹⁰

The attraction bias may have little impact on agency rulemaking because regulatory options are not discrete choices that can be compared pairwise to see if one dominates the other. The compromise bias, however, has obvious implications for agency regulatory decisions. An agency frequently must make tradeoffs between various regulatory values such as health benefits versus cost,¹¹¹ enforceability

¹⁰⁷ See *id.* at 82.

¹⁰⁸ See Simonson, *supra* note 103, at 170.

¹⁰⁹ See *id.*; see also Shafir et al., *supra* note 105, at 90 ("Having discarded the less attractive options and faced with a choice that is hard to resolve, people often search for a compelling rationale for choosing one alternative over another.").

¹¹⁰ See Shafir et al., *supra* note 105, at 81 (reporting similar context-based biases in decisions by expert physicians).

¹¹¹ This tradeoff is the foundation of many of the environmental and occupational health standards. See STEPHEN BREYER, *BREAKING THE VICIOUS CIRCLE: TOWARD EFFECTIVE RISK REGULATION* 12–14 (1993) (contending that the cost per life saved by banning and removing asbestos from buildings is too great); DANIEL A. FARBER, *ECO-PRAGMATISM: MAKING SENSIBLE ENVIRONMENTAL DECISIONS IN AN UNCERTAIN WORLD* 35–39 (1999) (discussing environmental and economic approaches to the tradeoff between health benefits and cost).

versus flexibility,¹¹² and certainty versus discretion.¹¹³ Moreover, biases that are due to reason-based decisionmaking, such as the compromise bias, are likely to be more pronounced for a regulator because he makes choices based on criteria provided to him by others. In that situation, the decisionmaker cannot rely on his subjective preferences about the various attributes of the choices to make the decision, but instead must be able to explain the decision in terms of the specified criteria.

Nonetheless, the compromise effect may be of limited significance in many rulemaking proceedings because the various interest groups who participate in the proceedings often will advocate for extreme choices on opposite sides of the spectrum of attributes that the regulator must trade off.¹¹⁴ In the vast majority of cases, the optimal regulation will lie somewhere between the most extreme positions available to an agency. Thus, while the compromise bias is likely to occur in staff deliberations, the propensity to avoid extreme outcomes may not cause agencies to adopt significantly suboptimal rules due to the adversarial nature of rulemaking proceedings.

II

THE PSYCHOLOGY OF ACCOUNTABILITY AND JUDICIAL REVIEW

Psychological studies suggest that accountability, if properly structured, can significantly improve the quality of decisionmaking in the sense of minimizing the extent to which individuals unthinkingly rely on inappropriate decisionmaking rules or fall prey to psychological biases.¹¹⁵ Accountability, however, is not always beneficial, and is never a complete panacea for decisionmaking ills. In the context of judicial review, one must first see if the psychological studies of ac-

¹¹² This tradeoff is at the heart of the debate about replacing design standards with performance standards. Performance standards can allow regulated entities significant leeway to comply in the most efficient manner, see Richard B. Stewart, *Models for Environmental Regulation: Central Planning Versus Market-Based Approaches*, 19 B.C. ENVTL. AFF. L. REV. 547, 556-57 (1992); Cass R. Sunstein, *Congress, Constitutional Moments, and the Cost-Benefit State*, 48 STAN. L. REV. 247, 267-68 (1996), but design standards are much easier to enforce, see Howard Latin, *Ideal Versus Real Regulatory Efficiency: Implementation of Uniform Standards and "Fine-Tuning" Regulatory Reforms*, 37 STAN. L. REV. 1267, 1271 (1985) (identifying "numerous advantages of uniform standards in comparison with more particularized and flexible regulatory strategies").

¹¹³ See KENNETH CULP DAVIS, *DISCRETIONARY JUSTICE* 52-56 (Illini Books ed. 1971); Colin S. Diver, *The Optimal Precision of Administrative Rules*, 93 YALE L.J. 65, 70-71 (1983); Henry J. Friendly, *The Federal Administrative Agencies: The Need for Better Definition of Standards*, 75 HARV. L. REV. 863, 872-74 (1962).

¹¹⁴ See Mark Seidenfeld, *Empowering Stakeholders: Limits on Collaboration as the Basis for Flexible Regulation*, 41 WM. & MARY L. REV. 411, 439, 441-43 (2000) (arguing that interest group structures and dynamics will lead some groups to advocate extreme positions).

¹¹⁵ See generally Jennifer S. Lerner & Philip E. Tetlock, *Accounting for the Effects of Accountability*, 125 PSYCHOL. BULL. 255 (1999) (offering a comprehensive review of the psychological literature on accountability).

countability, which deal primarily with oversight of individual decisionmaking, have any relevance to complex institutional decisionmaking like agency rulemaking. Second, there are structural prerequisites if accountability is to improve rather than impair decisionmaking. Third, even propitiously structured accountability does not improve all aspects of decisionmaking; there are some biases that accountability actually amplifies. Thus, before concluding that judicial review is likely to improve rulemaking decisions, it is necessary first to describe the nature of accountability, as that term is understood by psychologists; second, to analyze whether judicial review provides a meaningful and beneficial mechanism for accountability; and, third, to address the effects of such review on particular biases that afflict the rulemaking process.

A. Judicial Review as Accountability

Although psychological studies do not contain a uniform definition of "accountability," their uses of that term all conform to the following broad core concept: "[A]ccountability refers to the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings, and actions to others. Accountability also usually implies that people who do not provide a satisfactory justification for their actions will suffer negative consequences"¹¹⁶ Those consequences need not be material; contemptuous glances or even feelings of disappointment in one's own performance may suffice.¹¹⁷ From this broad notion of accountability it follows that the audience need not know as much about the subject as the decisionmaker; accountability can improve the care that decisionmakers take and alleviate decisionmaking biases—even if the audience is less knowledgeable and subject to the same biases that plague the decisionmaker.

Judicial review provides accountability, within the core psychological concept, because under "hard-look" review courts examine the arguments pertaining to the validity and care of the agency reasoning in adopting the rule.¹¹⁸ Hence, the reviewing court provides an audi-

¹¹⁶ *Id.* at 255 (citation omitted).

¹¹⁷ See *id.* (noting accountability can be based on "disdainful looks"); cf. BERNARD GUERIN, *SOCIAL FACILITATION* 164 (1993) (reporting that one mechanism explaining why individuals perform differently when in front of a nonevaluative audience is an attempt to "reduce any discrepancy between the internalized social norm [of performing well] and current behaviour"); Kate Szymanski & Stephen G. Harkins, *Social Loafing and Self-Evaluation with a Social Standard*, 53 J. PERSONALITY & SOC. PSYCHOL. 891, 891, 894 (1987) (demonstrating that an individual's ability to evaluate his own performance by comparing his performance to a social standard was a sufficient motivation to alleviate "social loafing").

¹¹⁸ See Mark Seidenfeld, *Demystifying Deossification: Rethinking Recent Proposals to Modify Judicial Review of Notice and Comment Rulemaking*, 75 TEX. L. REV. 483, 491-92 (1997).

ence, albeit not the only audience,¹¹⁹ for those engaged in formulating and defending the rule. Courts can express their disapproval by reversing and remanding the rule if they find the arguments ill-reasoned or lacking support, and such disapproval is likely to have some negative ramifications for agency staff involved in the rulemaking process. The ramifications may be material: although a staff member who worked on the rule rarely will be deprived of a promotion or lose her job because a rule is overturned, she may be required to return to modifying the rule and developing arguments for defending it anew well after she had gone on to other projects.¹²⁰ This disruption, coupled with an obligation to return to issues that the member thought already resolved, can have a demoralizing effect.¹²¹ Moreover, others on the staff might think less highly of a member who they see as responsible for the reversal of a rule, and an individual who attributes the loss in court to her contributions is very likely to be disappointed by the judicial reaction to her efforts.

Nonetheless, the institutional nature of rulemaking decisions does raise questions about whether arbitrary and capricious review is likely to influence the quality of decisionmaking by individual staff members. The formulation and ultimate adoption of agency rules usually reflects the product of a staff work group, not some mere aggregation of individual decisions.¹²² In addition, the staff group does not have the authority to choose the proposed rule or to promulgate the final rule. That authority generally rests with the agency head. The staff only provides its recommendations along with analyses supporting the recommendations and indicating potential weaknesses and alternatives to the recommendation.¹²³ These two attributes of the rulemaking process have a potential impact on judicial review as a mechanism for accountability.

Accountability appears to influence decisionmakers' motivations: individuals seek to please their audience and to convince the audience that they have done a good job in reaching a decision. Literature on "social loafing" indicates that individuals' motivations,

¹¹⁹ See Daniel Cohen & Peter L. Strauss, *Congressional Review of Agency Regulations*, 49 ADMIN. L. REV. 95, 96-102 (1997) (describing legislative fast-track review of agency rules); Elena Kagan, *Presidential Administration*, 114 HARV. L. REV. 2245, 2257-60 (describing theories of congressional oversight of agency rulemaking); *id.* at 2285-90 (discussing President Clinton's program for Office of Management and Budget review of agency rules).

¹²⁰ See Jerry L. Mashaw & David L. Harfst, *Regulation and Legal Culture: The Case of Motor Vehicle Safety*, 4 YALE J. ON REG. 257, 295 (1987) ("Any remand occurs long after the rulemaking docket has been closed and the staff has been reassigned.").

¹²¹ See Pierce, *supra* note 15, at 26-27.

¹²² KERWIN, *supra* note 91, at 81-82; McGarity, *supra* note 8, at 90-91; William F. Pederesen, Jr., *Formal Records and Informal Rulemaking*, 85 YALE L.J. 38, 52-55 (1975).

¹²³ See Pedersen, *supra* note 122, at 56-57 (noting that the role of the staff work group at the EPA leaves resolution of controversial issues to political appointees in the agency).

however, are diminished when their efforts go towards a group product.¹²⁴ That same literature also suggests that social loafing increases—that is, motivation decreases—when a decisionmaker does not have the authority to make the ultimate decision and only can make a recommendation.¹²⁵ Nonetheless, there are other attributes of staff involvement in the rulemaking process which would tend to increase individual staff members' motivations.

Social loafing occurs when an individual participates in producing a group product; such loafing has been established in the context of group decisionmaking.¹²⁶ But identifiability—the ability to identify the contribution of an individual to the final product—alleviates social loafing.¹²⁷ Although each agency has its own wrinkles on the process for formulating and adopting a rule, because of the prospect of judicial review, all such processes involve staff members from each affected office within an agency assessing the rule from their unique professional perspectives.¹²⁸ The contributions of members from different offices within the agency rarely overlap. A health scientist may analyze the likely benefits of a health-based rule, an engineer might assess the technical feasibility of compliance with the rule, and an economist will prepare cost studies and provide economic analyses of the impact of the rule. Although the ultimate decision will reflect all of these inputs, it will often be possible for other staff members who worked on the rule and their supervisors to identify the individual member whose analysis was responsible for or justifies a particular portion of the proposed rule. Moreover, when the rule is finally adopted, this same group will provide the reasoning that the courts will review, and a judicial determination that some aspect of the agency reasoning is somehow inadequate can easily be associated with

¹²⁴ See Bibb Latané et al., *Many Hands Make Light the Work: The Causes and Consequences of Social Loafing*, 37 J. PERSONALITY & SOC. PSYCHOL. 822, 830 (1979) (describing social loafing as caused by a decrease in social pressure to perform); Kenneth H. Price, *Decision Responsibility, Task Responsibility, Identifiability and Social Loafing*, 40 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 330, 330–31 (1987) (reporting that social loafing occurs in tasks requiring cognitive effort).

¹²⁵ See Price, *supra* note 124, at 337.

¹²⁶ See Stephen G. Harkins & Richard E. Petty, *Effects of Task Difficulty and Task Uniqueness on Social Loafing*, 43 J. PERSONALITY & SOC. PSYCHOL. 1214, 1218–19 (1982) (demonstrating social loafing in brainstorming tasks); Elizabeth Weldon & Gina M. Gargano, *Cognitive Effort in Additive Task Groups: The Effects of Shared Responsibility on the Quality of Multiattribute Judgments*, 36 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 348, 359–60 (1985) (finding social loafing in evaluation of the desirability of jobs based on job descriptions).

¹²⁷ Kipling Williams et al., *Identifiability as a Deterrent to Social Loafing: Two Cheering Experiments*, 40 J. PERSONALITY & SOC. PSYCHOL. 303, 307 (1981).

¹²⁸ Staff members from various offices may be included in the team that formulates the initial draft of rule, or may be limited to reviewing the draft after it is produced but before it is published as part of a notice of proposed rulemaking. See KERWIN, *supra* note 91, at 82–85.

the individual staff member who provided it.¹²⁹ Hence, although the formulation of a rule is a group effort, the actions of individual members are highly identifiable.

Similarly, the tendency of a decisionmaker acting as part of a merely advisory group to be less motivated to perform well and therefore to loaf can be offset if the individual's contribution to the product is unique, and if the group member feels that she can influence the final decision, and, therefore, is not dispensable.¹³⁰ In the context of rulemaking, individual staff members' contributions generally are unique and, at least if the agency faces meaningful judicial scrutiny, indispensable.¹³¹ The critique of staff's contribution has been that the professionals may limit the discretion of political appointees too greatly, rather than that the contribution of the professionals has too little impact.¹³² Because the contributions of staff members assigned to a rulemaking are highly identifiable and significantly influence the ultimate decision, there is good reason to believe that judicial review provides meaningful motivation for such members.

B. Prerequisites for Beneficial Accountability

Not all accountability improves decisionmaking. Psychologically, accountability works by motivating a decisionmaker to please his audience.¹³³ In some instances, however, other cognitive and social motivations outweigh this desire to please, and they can exacerbate poor-quality decisionmaking. In other instances, the desire to please the audience can introduce biases into the decisionmaking process. The most complete review of the literature on the psychology of accountability suggests that for accountability to improve the quality of decisionmaking it must satisfy the following four prerequisites: (1) the decisionmaker must be aware that he will have to explain his decision

¹²⁹ The identifiability of issues addressed in judicial review and the contributions of individual staff members is implicit in William Pedersen's assertion that "inquir[y] into the minute details of methodology, data sufficiency and test procedure" will "give those who care about well-documented and well-reasoned decisionmaking a lever with which to move those who do not." Pedersen, *supra* note 122, at 60; *see also, e.g.*, R. SHEP MELNICK, REGULATION AND THE COURTS: THE CASE OF THE CLEAN AIR ACT 270-72 (1983) (noting that the EPA's airborne lead standard of 1.5 micrograms per cubic centimeter originated in the agency's Office of Research and Development, and was generated by a determination by the office "to do it right this time" after being criticized by the agency's Science Advisory Board for its initial sloppy work).

¹³⁰ *See* Price, *supra* note 124, at 331, 342-43; *see also* Harkins & Petty, *supra* note 126, at 1228 (reporting that social loafing is a function of participants' feeling that their efforts were not needed).

¹³¹ As one scholar in public administration has noted: "[I]n the end it is professionals who are at the growing edge of policy. It is their skills that give agencies their problem-solving capacities" ROURKE, *supra* note 38, at 117.

¹³² *See* McGarity, *supra* note 8, at 92.

¹³³ Simonson & Nye, *supra* note 74, at 441.

prior to making any irrevocable commitments to that decision; (2) he must perceive the audience to which he explains the decision as legitimate; (3) he must not know the identity of the audience that will hear his explanation; and (4) he must believe that the basis for the audience's evaluation of the decision will be process- rather than outcome-based.¹³⁴

1. *Awareness of Accountability when Making a Decision*

If an individual first commits to a course of action and only later learns that he will have to explain that course, both cognitive dissonance and the desire to create a good impression will spur that individual to justify decisions already made rather than to expend effort to reconsider those decisions.¹³⁵ An individual will try to defend the decision already made to avoid feeling a conflict between the ultimate decision and his behavior.¹³⁶ The person will also not want to appear hypocritical or inconsistent. Therefore, if accountability is to improve an ultimate decision, the decisionmaker must be aware that he will be held accountable prior to making a commitment.

Agency rules generally are subject to judicial review, under either provisions of the statute authorizing the rule or the Administrative Procedure Act (APA).¹³⁷ Agency staff working on a rule, from the very beginning of the process, are aware that the rule may be reviewed by a court. Whether a rule is actually reviewed depends on whether any person brings a judicial challenge. Hence, unlike the psychological experiments studying accountability, which vary only in the timing of when a decisionmaker learns that he will have to explain a decision, judicial review of agency rulemaking is an ever-present but uncertain threat. Although psychological study of the prospect of uncertain accountability would be helpful, in its absence one can surmise that the reported influence of accountability is likely to occur if the decisionmaker perceives that judicial review is probable, and likely diminishes as the perceived probability of review decreases.¹³⁸ In addition, if the impact of reversal is sufficiently great to warrant attention to even an uncertain threat of judicial review, then the staff working on the rulemaking will be concerned with pleasing the court well before they know for certain whether review will occur.

¹³⁴ See Lerner & Tetlock, *supra* note 115, at 256–59.

¹³⁵ See *id.* at 257.

¹³⁶ See PLOUS, *supra* note 42, at 28–29 (noting that cognitive dissonance can affect behavior after a person commits to a decision).

¹³⁷ JEFFREY S. LUBBERS, A GUIDE TO FEDERAL AGENCY RULEMAKING 280 (3d ed. 1998).

¹³⁸ See Mark Seidenfeld, *Playing Games with the Timing of Judicial Review: An Evaluation of Proposals to Restrict Pre-enforcement Review of Agency Rules*, 58 OHIO ST. L.J. 85, 116–17 (1997) (arguing that the impact of judicial review on the quality of agency rulemaking will increase as the likelihood of review increases).

The likelihood that a rule will be challenged varies from agency to agency and even from rule to rule, but even the most significant rules adopted by an agency like the EPA, whose rules are considered controversial and therefore likely to invite challenge, are challenged less than half the time.¹³⁹ Yet, there is a general perception, shared by those who study judicial review of administrative rules and those in the agencies, that most rules are subject to challenge.¹⁴⁰ Moreover, the critics of judicial review paint a picture of a rulemaking process that is geared primarily to parrying the threat of judicial review, which is consistent with a perception that such review is sufficiently likely to warrant attention.¹⁴¹ Thus, there is good reason to believe that rulemaking staff at many agencies do worry from the outset about pleasing a court should the rule be challenged, and therefore do not commit to an outcome before taking such review into account.

Of course, there are exceptions. In particular, the thrust of some rules, if not the details, are preordained. This is especially true when an agency institutes a rulemaking proceeding to satisfy demands for a particular outcome from the White House or political appointees at the top of the agency.¹⁴² In such cases, the agency has committed to

¹³⁹ At the EPA, somewhere between 3% and 25% of all rules and about 33% of major rules are challenged in court. See discussion *supra* note 78.

¹⁴⁰ See Coglianese, *supra* note 78, at 1296 (reporting that it is widely believed that virtually every EPA rule is challenged in court); Mashaw, *supra* note 7, at 226–29 (presenting a hypothetical game purporting to show that allowing regulated entities to challenge a rule prior to enforcement means that the probability is great that some entity will challenge the rule); Seidenfeld, *supra* note 138, at 88–94 (generalizing Mashaw's game demonstrating the significant incentives that both regulated entities and regulatory beneficiaries have to challenge rules before they are enforced); see also Thomas O. McGarity, *The Courts and the Ossification of Rulemaking: A Response to Professor Seidenfeld*, 75 TEX. L. REV. 525, 535 & n.41 (1997) (asserting that “[f]or most major federal rulemaking initiatives, the cost . . . to launch a blunderbuss attack [in court] on the agency's analysis and conclusions is modest compared to the costs of compliance with the rule”); Richard J. Pierce, Jr., *Seven Ways to Deossify Agency Rulemaking*, 47 ADMIN. L. REV. 59, 69 (1995) (contending that a party dissatisfied with an agency rule will always be able to find some flaw in the rulemaking process that gives rise to about a fifty-percent chance of succeeding in an arbitrary and capricious judicial challenge).

¹⁴¹ See JOHN M. MENDELOFF, *THE DILEMMA OF TOXIC SUBSTANCE REGULATION: HOW OVERREGULATION CAUSES UNDERREGULATION AT OSHA* 121–22 (1988); McGarity, *supra* note 15, at 1412; Melnick, *supra* note 14, at 247; see also E. Donald Elliott, *Re-Inventing Rulemaking*, 41 DUKE L.J. 1490, 1492–93 (1992) (asserting that the primary purpose for notice and comment procedures is to allow an agency to “compile a record for judicial review”); Pierce, *supra* note 140, at 67 (claiming that agencies make decisions and then spend vast resources coming up with reasons to justify those decisions).

¹⁴² For example, this seems to have been the case for President Reagan's Department of Health and Human Services's gag rule prohibiting family planning clinics receiving federal funds from counseling clients regarding abortion. See *Statutory Prohibition on Use of Appropriated Funds in Programs Where Abortion Is a Method of Family Planning: Standard of Compliance for Family Planning Services Projects*, 53 Fed. Reg. 2922 (Feb. 2, 1988). The proposal for that regulation had been announced by President Reagan before the rulemaking proceeding began in an apparent attempt to shore up the support of the religious right for the candidacy of then-Vice President George H. Bush. Mark Seidenfeld,

the gist of the rule even before the proceeding is done, and the staff's job is merely to come up with data and arguments to support the predetermined outcome. This is precisely what the psychology literature predicts will happen when a commitment precedes decisionmaking subject to review.¹⁴³ Thus, for such rules, judicial review is likely to result in efforts to bolster the position already taken rather than to improve the quality of decisionmaking.

2. *Perception of the Legitimacy of the Audience*

A decisionmaker held accountable to an audience that he does not consider legitimate tends not to take the same care in making his decision as does one who is accountable to a legitimate audience.¹⁴⁴ Decisionmakers tend to consider audiences illegitimate when there is simply no plausible reason for that audience to review the decision.¹⁴⁵ For example, when individuals had to explain a betting decision to a friend, they were more careful in making the decision than when they had to explain the decision to a stranger.¹⁴⁶ In addition, when a decisionmaker is subject to surveillance that he perceives as intended to control his beliefs, accountability can actually cause the decisionmaker to defend his beliefs more vigorously.¹⁴⁷

There is no evidence, however, that agency staff considers judicial review to be illegitimate oversight. Courts are authorized by the APA to engage in arbitrary and capricious review.¹⁴⁸ Legal commentators sometimes complain that the hard-look review of today is a far cry from the minimal rationality standard envisioned when the APA was passed.¹⁴⁹ From the perspective of agency staff members, however, hard-look review provides the only oversight that focuses on the validity of their input into the rulemaking process—the detailed analysis and arguments based on the data in the record.¹⁵⁰ Judicial review provides staff with a “lever” to influence their superiors, who tend to react primarily to political concerns.¹⁵¹ Thus, although staff members may think that courts often make mistakes when reviewing agency

A Syncopated Chevron: Emphasizing Reasoned Decisionmaking in Reviewing Agency Interpretations of Statutes, 73 TEX. L. REV. 83, 101–02 (1994).

¹⁴³ See Lerner & Tetlock, *supra* note 115, at 257.

¹⁴⁴ *Id.* at 258.

¹⁴⁵ *Id.*

¹⁴⁶ George Cvetkovich, *Cognitive Accommodation, Language, and Social Responsibility*, 41 SOC. PSYCHOL. 149, 154 (1978).

¹⁴⁷ Lerner & Tetlock, *supra* note 115, at 258–59.

¹⁴⁸ See 5 U.S.C. § 706 (2000).

¹⁴⁹ See, e.g., Cross, *Shattering the Fragile Case*, *supra* note 17, at 1246–47 & n.5; McGarity, *supra* note 15, at 1410–12.

¹⁵⁰ See Pedersen, *supra* note 122, at 59.

¹⁵¹ See *id.* at 60.

rules, the focus of arbitrary and capricious review is likely to reinforce the legitimacy of that review in the eyes of agency staff.

3. *Decisionmakers' Knowledge of Their Audience*

Accountability tends to enhance the quality of decisionmaking only if the decisionmaker is not aware of the identity of the audience to whom he must report. When individuals are accountable to an audience whose own preferences are revealed, these individuals do not engage in more complex thought about their decision tasks. Instead they alter the outcome of their decisions to come closer to an outcome that would satisfy their audience.¹⁵² In some situations, decisionmakers modify their choices in a manner that is obviously inefficient in order to avoid an outcome that they might find unpleasant to explain to their audience.¹⁵³ Individuals who are accountable to an audience with unknown views are significantly more self-critical while making their decisions.¹⁵⁴ They are more open to qualifying decisions about which they are uncertain.¹⁵⁵ When individuals are accountable to an audience whose preferences are not revealed, they sometimes make a "best guess" about the outcomes that the audience would prefer and then alter their decisions to conform better with such surmised preferences.¹⁵⁶ Thus, the ideal scenario for accountability to enhance the quality of decisionmaking would keep the identity of the audience hidden from the decisionmaker.

This is precisely how judicial review operates. When an agency promulgates a rule, it has little idea who the individual judges who will review the rule will be. In fact, this lack of knowledge has been the foundation of much criticism of judicial review. Some critics contend that because the agency cannot know the predilections of the judges who will review the decision, it will engage in extreme efforts to bol-

¹⁵² See Richard Klimoski & Lawrence Inks, *Accountability Forces in Performance Appraisal*, 45 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 194, 202-03 (1990); Philip E. Tetlock, *Accountability and Complexity of Thought*, 45 J. PERSONALITY & SOC. PSYCHOL. 74, 80-81 (1983); Philip E. Tetlock et al., *Social and Cognitive Strategies for Coping with Accountability: Conformity, Complexity, and Bolstering*, 57 J. PERSONALITY & SOC. PSYCHOL. 632, 638 (1989).

¹⁵³ For example, individuals who were told that they were responsible for awarding financial aid to students who would have to drop out of school if they did not receive sufficient aid, and whose budget was not sufficient to provide aid to all applicants, tended to award insufficient funds to all the applicants when they were accountable to those applicants. Sheldon Adelberg & C. Daniel Batson, *Accountability and Helping: When Needs Exceed Resources*, 36 J. PERSONALITY & SOC. PSYCHOL. 343, 347-48 (1978). Even when individuals were accountable to the provider of funds rather than the recipients, they were more apt to award insufficient funds to some of the applicants. *Id.*

¹⁵⁴ See Tetlock, *supra* note 152, at 80-81.

¹⁵⁵ See Philip E. Tetlock & Richard Boettger, *Accountability Amplifies the Status Quo Effect when Change Creates Victims*, 7 J. BEHAV. DECISION MAKING, 1, 18 (1994).

¹⁵⁶ See Tetlock, *supra* note 152, at 80.

ster its decision. These critics describe agencies as searching for and analyzing information that they consider irrelevant just to satisfy the possibility that some judge on a panel reviewing the rule will think the information significant.¹⁵⁷ Others postulate that an agency will become disheartened by the uncertainty of having to prepare for review by an unknown judge whose perspective on the issues in the case cannot be ascertained. These critics predict that “[r]ather than try to guess what a court will require, the agency simply may choose to issue a less thoughtful rule and accept the inevitability of judicial second-guessing.”¹⁵⁸ In fact, the psychology of accountability suggests that the very uncertainty about the likely views of the reviewing judge that critics bemoan is a necessary antidote to decisionmakers’ tendencies to tailor their decisions to the views of their prospective audiences.

4. *Process- Versus Outcome-Based Accountability*

For accountability to be beneficial, a decisionmaker must perceive that the evaluation of her decision will be based on the process that she used to reach the decision, rather than on the outcome of the decision.¹⁵⁹ For example, in a study testing the propensity of business administration students to be influenced by sunk costs when recommending in which of two products a company should invest, students who believed that their recommendations would be evaluated based on whether their decision turned out to be the most beneficial for the company inappropriately escalated commitments to prior investments.¹⁶⁰ Students who were informed that they would be evaluated based on their use of effective decision strategies—strategies the students would have to report in an interview immediately following the decision—were significantly less likely to succumb to the sunk cost fallacy.¹⁶¹ In another example, buyers who were held accountable for the process by which they reached their decisions analyzed information more extensively than they did when not accountable at all, or only accountable for decision outcomes.¹⁶²

¹⁵⁷ See Elliott, *supra* note 141, at 1492–93; McGarity, *supra* note 15, at 1412; Melnick, *supra* note 14, at 247.

¹⁵⁸ Cross, *Pragmatic Pathologies*, *supra* note 17, at 1047.

¹⁵⁹ Lerner & Tetlock, *supra* note 115, at 258.

¹⁶⁰ Simonson & Staw, *supra* note 74, at 423–24.

¹⁶¹ See *id.*

¹⁶² See Patricia M. Doney & Gary M. Armstrong, *Effects of Accountability on Symbolic Information Search and Information Analysis by Organizational Buyers*, 24 J. ACAD. MARKETING SCI. 57, 61–62 (1996). Interestingly, Doney and Armstrong found that neither process nor outcome accountability significantly increased the likelihood that buyers would engage in symbolic search—searches for information to justify decisions they already made. *Id.* Although lack of significance does not prove that such review has no impact on symbolic search, it does suggest that critics of judicial review overemphasize the tendency of hard-look review to induce defensive searches for information that confirms the decision the agency would have made without the information. Doney and Armstrong’s findings also

On its face, arbitrary and capricious review, as currently implemented under the "hard-look" or "relevant factors" rubric,¹⁶³ is almost entirely a process-based evaluation.¹⁶⁴ It does not compare the outcome to some ideal that the judge has in mind, and eschews inquiring whether the agency decision, in fact, turned out to be wise.¹⁶⁵ It essentially asks the agency to explain why it reached the outcome it did in light of data available to the agency, alternatives to the outcome, and arguments presented to the agency by those whom the rule will affect.¹⁶⁶

That the arbitrary and capricious standard of review appears to be process-based does not necessarily mean that it is so. The legal standard may be sufficiently indeterminate that a judge who purports to base a decision on application of such a standard really might be basing his decision on ideology rather than on the relevant legal arguments. In the agency context, ideological judicial voting translates into upholding regulatory outcomes that judges like and reversing those that they dislike. In other words, if judges vote entirely based on ideology and ignore legal doctrine, except in writing opinions attempting to justify decisions already made, then judicial review is based on outcome rather than on process.

The jury is still out on the extent to which judges vote based on ideology in various contexts. Although a recent study concludes that

suggest that critics of political review, which is outcome-based, may overstate the extent to which political oversight encourages symbolic search. See generally Mark Seidenfeld, *The Psychology of Accountability and Political Review of Agency Rules*, 51 DUKE L.J. (forthcoming Dec. 2001) (using the psychology of accountability to analyze the likely impact of political oversight on agency rulemaking).

¹⁶³ The hard-look test requires the court to scrutinize the agency's reasoning to make certain that the agency carefully deliberated about the issues raised by its decision. Harold Levant, *Environmental Decisionmaking and the Role of the Courts*, 122 U. PA. L. REV. 509, 511 (1974). This test was first enunciated as an approach for assessing whether an agency decision is arbitrary and capricious in *Greater Boston Television Corp. v. FCC*, 444 F.2d 841, 851 (D.C. Cir. 1970). Although the Supreme Court has not used the talismanic phrase "hard look," its decision in *Motor Vehicle Manufacturers Ass'n v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 43-44 (1983), which requires an agency to examine relevant data, articulate a satisfactory explanation connecting facts found to the agency's regulatory choice, and consider all important aspects of problems addressed by the agency decision, is widely regarded as having adopted something akin to the hard-look standard. See, e.g., McGarity, *supra* note 140, at 527 & n.9.

¹⁶⁴ Gary Lawson, *Outcome, Procedure and Process: Agency Duties of Explanation for Legal Conclusions*, 48 RUTGERS L. REV. 313, 316-19 (1996); Mark Seidenfeld, *An Apology for Administrative Law in The Contracting State*, 28 FLA. ST. U. L. REV. 215, 222 (2000); Cass R. Sunstein, *Deregulation and the Hard-Look Doctrine*, 1983 SUP. CT. REV. 177, 181-84.

¹⁶⁵ See, e.g., *Vt. Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.*, 435 U.S. 519, 552-54 (1978) (reversing a lower court decision requiring the Nuclear Regulatory Commission to consider conservation as an alternative to construction of a power plant, noting that conservation began to be seen as a feasible alternative only after the agency's decision).

¹⁶⁶ Seidenfeld, *supra* note 118, at 491-92.

ideology is not a significant factor in judicial review of agency decisions,¹⁶⁷ most studies conclude the opposite.¹⁶⁸ There are, however, several limitations on these conclusions. First, it is difficult to code the outcomes of judicial decisions in an objective manner. Agency decisions tend to be complex; cases may raise multiple issues and the various methods by which studies treat the resolution of these issues fail to capture accurately the outcome of every case. For example, suppose a challenge to an EPA rule raises six issues. One might count a reversal and remand of any one issue as a loss for the agency. This might be appropriate if the issues all related to the validity of the rule as a whole, because then reversal on one ground usually will result in the rule being vacated and remanded, which in turn will ultimately delay the adoption of the rule, and potentially could kill the rule altogether.¹⁶⁹ But if the rule is really a conglomerate of six independent rules, as, for example, when a rule sets treatment limits for six different hazardous wastes, then reversal of one limit would still leave the other five intact. In such a case, it would be perverse to claim that the agency lost the case. In fact, the agency should be credited with winning five cases and losing one. Therefore, studies that treat an entire case as the unit for analysis and studies that treat each issue as the unit of analysis are both imperfect.¹⁷⁰

¹⁶⁷ See William S. Jordan, III, *Judges, Ideology, and Policy in the Administrative State: Lessons from a Decade of Hard Look Remands of EPA Rules*, 53 ADMIN. L. REV. 45, 98–99 (2001).

¹⁶⁸ E.g., Frank B. Cross & Emerson H. Tiller, *Judicial Partisanship and Obedience to Legal Doctrine: Whistleblowing on the Federal Courts of Appeals*, 107 YALE L.J. 2155, 2175 (1998); Richard L. Revesz, *Environmental Regulation, Ideology, and the D.C. Circuit*, 83 VA. L. REV. 1717, 1766–67 (1997); see also Roy W. McLeese III, Note, *Disagreement in D.C.: The Relationship Between the Supreme Court and the D.C. Circuit and Its Implications for a National Court of Appeals*, 59 N.Y.U. L. REV. 1048, 1050–51 (1984) (identifying ideological incompatibility as the “most obvious explanation” for the D.C. Circuit’s low affirmation rate before the Supreme Court).

¹⁶⁹ The impact of remand on agency decisions can be disastrous because, at the very least, it takes significant time and resources for the agency to reinstate the rule. See MASHAW & HARFST, *supra* note 14, at 88–92, 125–29 (describing how the delay created by remand on a tangential issue in the National Highway Traffic Safety Administration’s regulation of airbags not only allowed changing politics to derail its airbag rule, but also contributed to changing the entire manner in which the agency operated, from promulgating safety standards to issuing recalls of unsafe vehicles). Even if the issues relate to the validity of the rule as a whole, there are bound to be differences in the impact that the reversal of each issue would have on the agency’s ability to re-promulgate the rule or to promulgate other rules with a similar ideological foundation. See Jordan, *supra* note 167, at 51–54. If the court simply demands better explanation, an agency might be able to re-promulgate the rule quickly and without change. See Jordan, *supra* note 19, at 415–17 (describing how agencies “recover” from remands of rules). If the reversal requires extensive collection of data that the agency does not possess, it may be impossible for the agency to re-promulgate the rule.

¹⁷⁰ Compare, e.g., Revesz, *supra* note 168, at 1727 & n.29 (treating the vote on each case as a single judicial decision), with Jordan, *supra* note 167, at 54, 56 (treating the vote on each issue raised in a case as a separate judicial decision).

Second, studies that conclude that ideology plays a role in judicial decisionmaking do not demonstrate that the doctrine surrounding the arbitrary and capricious test and the care an agency takes in promulgating a rule are irrelevant. The fact that a variable in a regression is statistically significant says little about either the magnitude of the impact of that variable¹⁷¹ or the significance of other variables.¹⁷² Because none of the reported studies included the adherence to legal doctrine as an independent variable, they say nothing about the significance, let alone the relative importance, of the care of the agency's decision versus the ideology of the judges in the outcomes of arbitrary and capricious challenges.

Despite these difficulties, those who have looked at the impact of ideology on judicial review of agency action generally conclude that both legal doctrine and a judge's ideology affect how that judge is likely to vote in a particular case.¹⁷³ They reach this conclusion by analyses showing that monitoring of judges' judicial review of agency action by the Supreme Court and by other judges on the appellate panel reduces the impact of ideology on judges' voting.¹⁷⁴

Scholars who have addressed the issue of the interplay of ideology and law in influencing judicial review of agency action have proposed two different mechanisms for how these factors enter judges' decisions. One mechanism posits that judges weigh their ideological pref-

¹⁷¹ See ROBERT S. PINDYCK & DANIEL L. RUBINFELD, *ECONOMETRIC MODELS AND ECONOMIC FORECASTS* 63-64 (2d ed. 1981).

¹⁷² None of the studies assessing the impact of ideology on judicial review included a variable representing either the impact of legal doctrine or the care of agency decisionmaking in their analyses. This probably reflects the difficulty of objectively coding such variables. See JEFFREY A. SEGAL & HAROLD J. SPAETH, *THE SUPREME COURT AND THE ATTITUDINAL MODEL* 33-34 (1993) (asserting in general that the legal model of decisionmaking cannot be objectively operationalized in an empirical study); Tracey E. George, *Developing a Positive Theory of Decisionmaking on U.S. Courts of Appeals*, 58 OHIO ST. L.J. 1635, 1653 (1998) (claiming that "inherent impediments to the creation of a functional model [that incorporates legal factors] across doctrinal areas have limited . . . efforts to . . . map judicial outcomes").

¹⁷³ E.g., Cross & Tiller, *supra* note 168, at 2175; Revesz, *supra* note 168, at 1766-68. But see Jordan, *supra* note 167, at 99 (arguing that his data do not support hypothesis of strategic ideological voting, but not performing any statistical analyses to separate out other factors that could mask such ideological voting). The problem of evaluating the relative impact of law *vis-à-vis* a judge's ideology on the voting by that judge extends beyond judicial review of agency action. The only statistical analysis of which I am aware that explicitly evaluated the impact of legal doctrine and extra legal factors such as ideology found that both types of factors influenced Supreme Court Justices' votes in death penalty cases. See Tracey E. George & Lee Epstein, *On the Nature of Supreme Court Decision Making*, 86 AM. POL. SCI. REV. 323, 333-34 (1992). But cf. SEGAL & SPAETH, *supra* note 172, at 72-73 (concluding from their subjective evaluation of Supreme Court Justices' politics that all Supreme Court decisions are determined by such politics rather than law). Professor George's findings are consistent with administrative law studies that deduce this same conclusion.

¹⁷⁴ See, e.g., Cross & Tiller, *supra* note 168, at 2168-73; Revesz, *supra* note 168, at 1727-66.

erences against other preferences, such as their reputations as careful jurists.¹⁷⁵ The second asserts that judges' ideology enters indirectly by influencing the meaning that judges give to legal doctrine and informing judges about the appropriate application of that doctrine.¹⁷⁶ Under either theory of judging, both law and ideology will influence judicial decisions. In other words, for most cases in which an agency rule is challenged as arbitrary and capricious, a judge who prefers the substance of the rule is more likely to vote to uphold it than is a judge who prefers the status quo prior to the rule for any given level of care manifested in the agency's justification for the rule. By the same token, however, in most cases an agency justification that is comprehensive, careful, and persuasive is more likely to convince a judge of any ideological bent to affirm the agency than is justification that is identifiably careless, incomplete, and unpersuasive.¹⁷⁷

To the best of my knowledge, the psychological research does not report any experiments in which accountability was based on a combination of process and outcome. As noted above, however, when decisionmakers know the views of their audience they skew their decisions towards outcomes that will please the audience regardless of whether accountability is nominally process-based. They even go so far as to try to ascertain the outcome preferences of a known audience when the actual preferences are unknown. That is why accountability works best when the identity of the audience is unknown.¹⁷⁸ Thus, the psychological studies of accountability suggest that decisionmakers sub-

¹⁷⁵ See Sidney A. Shapiro & Richard E. Levy, *Judicial Incentives and Indeterminacy in Substantive Review of Administrative Decisions*, 44 DUKE L.J. 1051, 1053-54 (1995).

¹⁷⁶ See Cross & Tiller, *supra* note 168, at 2158-59. This second mechanism is consistent with most judges' denial of explicit consideration of ideology. See Harry T. Edwards, *Public Misperceptions Concerning the "Politics" of Judging: Dispelling Some Myths About the D.C. Circuit*, 56 U. COLO. L. REV. 619, 620 (1985) ("[I]t is the law—and not the personal politics of individual judges—that controls judicial decision-making in most cases . . ."); Patricia M. Wald, *Some Thoughts on Judging as Gleaned from One Hundred Years of the Harvard Law Review and Other Great Books*, 100 HARV. L. REV. 887, 891 (1987) (arguing that the different voting records of Republican and Democratic judges reflect differences in the "personalit[ies] and life experiences that lead the judge to vote Democratic or Republican" rather than explicit consideration of ideology). But cf. Richard A. Posner, *What Do Judges and Justices Maximize? (The Same Thing Everybody Else Does)*, 3 SUP. CT. ECON. REV. 1, 15-23 (1993) (asserting that judges maximize utility just like everybody else, and acknowledging that this will involve deciding cases based on one's values, but also arguing that judges derive utility from playing the game of judging, which limits their propensity to vote based on values and increases their propensity to follow precedents and legal doctrine).

¹⁷⁷ At a minimum,

[s]ome amount of compliance effort will still likely be required to satisfy the judges who ideologically prefer the agency's action—either because the judges also have preferences for some amount of compliance with the "hard look" requirements or because the judges do not feel comfortable voting ideologically unless they can make at least plausible arguments.

Revesz, *supra* note 168, at 1770 n.108.

¹⁷⁸ See *supra* notes 152-58 and accompanying text.

ject to a process-based evaluation nonetheless perceive that outcome will also affect the evaluation. The actual criteria by which judges review agency decisions thus seem to mirror the perceptions of the decisionmakers in these experiments: review that is posited on its face as being process-based is perceived as being affected by both the decisionmaking process and the ultimate outcome of that process.

C. The Impact of Accountability on Agency Staff Members' Decisionmaking

That judicial review satisfies the criteria for potentially beneficial accountability does not guarantee that it will enhance every aspect of agency staff members' decisionmaking. Staff members deal with a variety of issues and bring to their tasks a multitude of decisionmaking rules and heuristics that render these tasks feasible. The impact of accountability on a staff member's decisionmaking depends on the precise heuristics that the individual uses, or more generally on the mechanism by which those heuristics operate to reduce the magnitude of the decisionmaking task. Accountability tends to reduce the biases inherent in the use of many heuristics, but may have no effect on others, and can actually magnify the bias introduced by some.¹⁷⁹

Judicial review is likely to attenuate biases in decisionmaking when the bias results from shortcuts in the processing of information or an unwillingness to engage in self-critical thinking—phenomena I have dubbed “cognitive loafing.”¹⁸⁰ Cognitive loafing explains a substantial number of the decisionmaking biases that can affect the rulemaking process. Accountability has been shown to reduce mindless commitments to previous courses of action,¹⁸¹ and when accountability is individualized it has been postulated to reduce mindless seeking of group concurrence.¹⁸² This suggests that judicial review would decrease a staff member's propensity to apply a decision

¹⁷⁹ See Lerner & Tetlock, *supra* note 115, at 263–64.

¹⁸⁰ Cognitive loafing is an obvious modification of the well-established phenomenon of “social loafing,” which occurs when individuals in a group do not make the same effort to produce a group product as they would if they were individually responsible for the product. See Harkins & Petty, *supra* note 126, at 1216. Interestingly, one of the types of activities for which social loafing has been demonstrated is cognitive effort in problem solving. See Price, *supra* note 124, at 330. As already noted, accountability—in particular, the knowledge that someone can identify an individual's contribution to the group product—reduces social loafing. See *supra* notes 127–32 and accompanying text. Thus, I believe the term “cognitive loafing” is appropriate because it creates a proper analogy to social loafing.

¹⁸¹ See Simonson & Nye, *supra* note 74, at 437; cf. Simonson & Staw, *supra* note 74, at 424–25 (finding that process accountability decreased the tendency of individuals to escalate commitments to a previous course of action, but concluding that such tendencies did not reflect mere mindless or careless decisionmaking).

¹⁸² See Marceline B.R. Kroon et al., *Managing Group Decision Making Processes: Individual Versus Collective Accountability and Groupthink*, 2 INT'L J. CONFLICT MGMT. 91, 99 (1991).

rule that is unique to her office or profession outside of the context for which the rule was created and has worked in the past. Because laypeople often are ignorant of some formal decisionmaking rules, accountability does little to correct lay failures to apply such rules properly.¹⁸³ By contrast, however, accountability is effective at reducing errors in applying such rules by individuals who have knowledge of the rules. For example, business students are much more likely to ignore a commitment to a previous course of investment—that is, to write off sunk costs—when they were accountable for their investment decisions.¹⁸⁴ Studies also suggest that accountability tends to mitigate bias stemming from the availability heuristic.¹⁸⁵ Presumably, the knowledge that one will be accountable leads a decisionmaker to work harder at generating information that bears on the decision and that is not easily accessible through memory. Accountability has also consistently been shown to reduce overconfidence.¹⁸⁶

Some biases are the product of the interaction of several cognitive and social mechanisms. For these biases, the impact of accountability is likely to be more nuanced. The theory behind the egocentrism bias suggests that accountability holds the potential to mitigate that phenomenon. Psychologists have demonstrated that accountability leads to increased self-criticism and a willingness to consider alternative perspectives on an issue.¹⁸⁷ Accountable decisionmakers are more apt to try to anticipate reasonable objections that others might raise in response to their choices than are their un-

¹⁸³ See Barbara E. Kahn & Jonathan Baron, *An Exploratory Study of Choice Rules Favored for High-Stakes Decisions*, 4 J. CONSUMER PSYCHOL. 305, 317 (1995) (reporting that accountability increased individuals' reliance on "rational" strategies for trading off one attribute of a decision for another only when the individuals were familiar with the concept of compensatory decisionmaking); see also Duane T. Wegener & Richard E. Petty, *Flexible Correction Processes in Social Judgment: The Role of Naïve Theories in Corrections for Perceived Bias*, 68 J. PERSONALITY & SOC. PSYCHOL. 36, 45 (1995) (concluding that correction for biases depends on the decisionmaker's perception of the process which causes the bias); Timothy D. Wilson & Nancy Brekke, *Mental Contamination and Mental Correction: Unwanted Influences on Judgments and Evaluations*, 116 PSYCHOL. BULL. 117, 130–33 (1994) (noting that motivational influences like accountability are likely capable of correcting errors when a decisionmaker can be made aware of the potential for bias, but not when the bias involves "mental contamination" of which the decisionmaker cannot be made aware).

¹⁸⁴ See Simonson & Nye, *supra* note 74, at 437–38.

¹⁸⁵ See Diederik A. Stapel et al., *The Impact of Accuracy Motivation on Interpretation, Comparison, and Correction Processes: Accuracy × Knowledge Accessibility Effects*, 74 J. PERSONALITY & SOC. PSYCHOL. 878, 891 (1998); Erik P. Thompson et al., *Accuracy Motivation Attenuates Covert Priming: The Systematic Reprocessing of Social Information*, 66 J. PERSONALITY & SOC. PSYCHOL. 474, 484 (1994).

¹⁸⁶ See Karen Siegel-Jacobs & J. Frank Yates, *Effects of Procedural and Outcome Accountability on Judgment Quality*, 65 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 1, 15 (1996); Philip E. Tetlock & Jae Il Kim, *Accountability and Judgment Processes in a Personality Prediction Task*, 52 J. PERSONALITY & SOC. PSYCHOL. 700, 706–07 (1987).

¹⁸⁷ See Tetlock, *supra* note 152, at 81; Tetlock et al., *supra* note 152, at 640.

accountable counterparts.¹⁸⁸ Essentially, accountability could reduce the egocentrism bias by encouraging empathetic decisionmaking. The egocentrism bias, however, may stem, at least in part, from a lack of ability to be sufficiently sensitive to the perspectives of others, and accountability is unlikely to alleviate this component of the bias.

The psychological explanation for the confirmation bias—that individuals restrict their search and analysis to those avenues which can confirm an initial hypothesis—suggests that accountability is likely to amplify that bias, and this conclusion is borne out in controlled studies.¹⁸⁹ Individuals work harder to seek evidence supporting their hypothesis when they are accountable.¹⁹⁰ But because they tend to look only for confirming evidence and limit their considerations to conditions in which they expect their causal hypotheses to hold true, additional search and analysis often just turn up more confirming evidence and explanations. Therefore, accountability can make a decisionmaker even less likely to consider that her initial hypothesis may have been wrong.¹⁹¹ The confirmation bias, however, is alleviated if an individual is explicitly instructed to consider alternative hypotheses to the one she has initially formed.¹⁹² This, however, is precisely what courts ask of agencies under hard-look arbitrary and capricious review. Thus, it is uncertain whether judicial review, like general process-based accountability, will amplify the confirmation bias, or whether, like instructions to consider alternative hypotheses, it will attenuate this bias.

The propensity of individuals to consider irrelevant information when making a decision is a third bias that responds to accountability in a nuanced manner. There are two psychological mechanisms that explain this bias. The first mechanism posits that a decisionmaker desires to please the experimenter who presented her with the problem.¹⁹³ Norms of communication lead an individual to assume that information provided by the experimenter are relevant, and she works to use that information, whether or not it is in fact relevant, in choosing an outcome.¹⁹⁴ Consideration of irrelevant information that stems from this mechanism is likely to be exacerbated by accountability.¹⁹⁵ If the decisionmaker is held accountable, then she will work

¹⁸⁸ See Tetlock, *supra* note 152, at 81.

¹⁸⁹ See Sanbonmatsu et al., *supra* note 96, at 897.

¹⁹⁰ See *id.* at 894.

¹⁹¹ See *id.*

¹⁹² See Charles G. Lord et al., *Considering the Opposite: A Corrective Strategy for Social Judgment*, 47 J. PERSONALITY & SOC. PSYCHOL. 1231, 1241 (1984); Sanbonmatsu et al., *supra* note 96, at 898–99.

¹⁹³ See *supra* note 152 and accompanying text.

¹⁹⁴ Tetlock et al., *supra* note 88, at 930.

¹⁹⁵ See *id.* at 931.

even harder to please the experimenter and hence to incorporate all of the information that she is given into her decision.

The second mechanism derives from a decisionmaker's use of the representativeness heuristic. By this mechanism, irrelevant information changes a decisionmaker's picture of the object of her decision in terms of representative traits that will influence her.¹⁹⁶ To the extent that irrelevant information distorts the representativeness of the object of study, accountability is likely to mitigate the bias.¹⁹⁷ Accountability will encourage the decisionmaker to separate out truly relevant from irrelevant information and to guard against irrational preference changes in response to irrelevant information.¹⁹⁸ As I concluded above, the first mechanism that causes the consideration of irrelevant information is unlikely to affect agency rulemaking.¹⁹⁹ If that conclusion is correct, then accountability would have a beneficial effect on any tendency by agency staff members to consider irrelevant information when formulating rules.

The compromise bias—the aversion of decisionmakers to outcomes at the extremes of the available choices—is the one potentially influential bias that is magnified by accountability.²⁰⁰ This magnification occurs because individuals who are uncertain about which attributes of their choices are most important perceive choices at such extremes as more difficult to defend.²⁰¹ Yet, one has to wonder whether this bias will truly result in nonoptimal decisions in the context of rulemaking. First, some preliminary research indicates that the compromise bias may not affect managerial decisions—decisions that reflect an underlying consistent strategy or plan.²⁰² To the extent that agency staff bring coherent overarching theoretical structures to their decisionmaking tasks, they may not be subject to the compromise bias. Second, as for any heuristic bias, the fact that an individual tends to

¹⁹⁶ See *id.* at 916.

¹⁹⁷ When the influence of irrelevant information was “deactivated” by informing decisionmakers that the information provided was not prescreened for relevance to the problem at hand, the tendency of unaccountable decisionmakers to use irrelevant information decreased, but remained significant. *Id.* at 925–26. When the decisionmakers were held accountable for their decision, the influence of irrelevant information disappeared. See *id.* at 930–31.

¹⁹⁸ See *id.* at 931.

¹⁹⁹ See *supra* notes 91–93 and accompanying text.

²⁰⁰ See Lerner & Tetlock, *supra* note 115, at 264.

²⁰¹ Simonson, *supra* note 103, at 161.

²⁰² “Managers . . . think strategically[.] [They] decide on the overall plan prior to making ‘local’ decisions, examine the fit of considered options with the organization’s goals, and try to understand prior to reaching a decision how various factors influence the outcome of the decision.” ITAMAR SIMONSON & RASHI GLAZER, CONTEXT EFFECTS IN MANAGERIAL DECISION MAKING BY GROUPS AND INDIVIDUALS 4 (Stanford Graduate Sch. of Business, Research Paper No. 1338, 1995), available at http://gobi.stanford.edu/researchpapers/detail1.asp?Paper_No=1338.

avoid extreme choices is not troubling unless she does so in a manner that leads to suboptimal outcomes.²⁰³ Because rulemaking has become essentially an adversarial process, it is often the case that the best choice for a rule lies in the middle of the available set of options. The extreme options are usually suggested by interest groups that value only one of the attributes of the outcomes that the agency must trade off.²⁰⁴ Thus, the bounds of the set of suggested choices from which a regulator chooses, and against which she must defend her choice, frequently represent an unreasonable accommodation of those attributes. For example, when the EPA reduced the heavy-duty motor vehicle emissions of particulate matter and nitrogen oxides, it was sued both by the Natural Resources Defense Council because the standard was not as low as could be achieved by the most advanced engines, and by the manufacturers because the standard was based on predictions of what the industry as a whole could achieve rather than on proven technology.²⁰⁵ In essence, the EPA had to balance the uncertainty and cost of a standard for which feasibility had not yet been demonstrated against the benefits from that standard. Not surprisingly, environmentalists advocated for a standard that failed to consider the cost to the industry, and the industry advocated a standard that would guarantee their ability to comply at the expense of health benefits. The court upheld the EPA rule against both challenges.²⁰⁶ In short, although judicial review is likely to increase the tendency of an agency to adopt rules that compromise between the most strict and lenient options suggested by commenters, that influence of review will be problematic only when the best choice actually lies at one of these extremes.

III

THE INSTITUTIONAL PROCESS FOR FORMULATING RULES

Thus far, I have used the psychology of accountability to describe how one might expect judicial review to influence the decisions made by individual staff members who participate in the rulemaking process. I have considered the institutional structure of rulemaking decisions only to the extent necessary to show that that structure is

²⁰³ Heuristics are generally useful because they reduce the time and effort for an individual to reach a reasonably good decision in many contexts. PLOUS, *supra* note 42, at 109. The fact that they lead to biases in decisionmaking is only problematic if the context in which they are applied makes the bias one worth worrying about—that is, when they lead to “deviations from normatively derived answers.” *Id.*

²⁰⁴ See Jody Freeman, *Collaborative Governance in the Administrative State*, 45 UCLA L. REV. 1, 11–12 (1997); Philip J. Harter, *The Political Legitimacy and Judicial Review of Consensual Rules*, 32 AM. U. L. REV. 471, 476 (1983).

²⁰⁵ See *Natural Res. Def. Council v. Thomas*, 805 F.2d 410, 419–20, 428–29 (D.C. Cir. 1986).

²⁰⁶ *Id.* at 439.

unlikely to shield individual staff members from the influence of judicial review. There are, however, additional questions raised by the institutional structure of rulemaking. One might conjecture that this structure already alleviates the potential for bias in the final agency decision, thus eliminating the need for judicial review. One might also wonder whether judicial review has an impact on the dynamics by which the agency operates that offsets any positive influence that review has on individual staff members' decisions. Keeping these hypotheses in mind, I turn now to describe the nature of the institutional decisionmaking process that agencies use to formulate and promulgate final legislative rules.

A. The Structure and Dynamics of Agency Formulation and Promulgation of Rules

Issues that confront agencies in the modern regulatory world are often too complex to be within the expertise of a single person. When presented with a problem that appears to require a rule that affects multiple interests, agencies therefore must develop a mechanism to gather input from the various professional disciplines that bear on the wisdom of any rule ultimately adopted, as well as from the offices within the agency whose work could be affected by the rule.²⁰⁷ There is no universal process by which every agency secures such input; each agency may have a different mechanism for drafting rules, and even within a single agency the mechanism can vary with the nature of the rule and even the personnel assigned to evaluate it.²⁰⁸ Nonetheless, the predominant mechanism for securing input from staff members with varying perspectives is to assemble a work group consisting of at least one member from every office in the agency that might be affected by or interested in the rule.²⁰⁹

The idealized embodiment of the work group corresponds to what Tom McGarity has labeled the "team model" of the agency internal rulemaking process.²¹⁰ In the team model, the work group has a leader who is responsible for managing the resources of the group, and who may delegate particular tasks to individual members or subcommittees of the group to take advantage of each member's particular strength and expertise.²¹¹ Each member of the group, however, is privy to all of the information relevant to the rulemaking and each participates in formulating the recommendations and analyses that

²⁰⁷ See KERWIN, *supra* note 91, at 136–37.

²⁰⁸ See McGarity, *supra* note 8, at 90.

²⁰⁹ See KERWIN, *supra* note 91, at 136–37; see also McGarity, *supra* note 8, at 73 (describing the basic configuration of an EPA workgroup).

²¹⁰ See McGarity, *supra* note 8, at 90.

²¹¹ See *id.*

the group passes on to their superiors in the agency.²¹² The process of generating these recommendations and analysis is thus one of consensus by all group members.²¹³

There are distinct advantages to the team model when it works as conceived. Problems that the various perspectives of staff members in the agency might identify are revealed early, before the agency has committed significant resources, and before staff members have made a psychological commitment to a recommendation that ultimately will be deemed unacceptable by some office within the agency. The final rule is apt to reflect an accommodation of all of these perspectives. The very nature of a rulemaking team also tends to reduce interoffice conflicts about rules.²¹⁴ The potential disadvantages of this model, however, include the cost of the process: the team model is resource intensive and takes time.²¹⁵ The team model also tends to induce compromises that may lead the staff away from best solutions.²¹⁶ Finally, the team model can cause staff to limit the policy choices available to the politically accountable agency heads who are ultimately responsible for the decision.²¹⁷ This last objection, however, is only a disadvantage if one believes that the indirect political accountability to which agency heads are subject sufficiently constrains them from sacrificing some of the values that regulations are supposed to respect due to political expedience, pressure from special interests, or their own idiosyncratic preferences.²¹⁸

When time or resources are scarce, or the need for input from the various offices within the agency is perceived as less important, agencies tend to use a more hierarchical model for formulating rules.²¹⁹ In a pure hierarchical model, the program office responsible for the regulation covered by the rule takes on the primary responsibility for the rulemaking.²²⁰ The program office is responsible for generating the relevant information, providing needed analysis, de-

²¹² *Id.*

²¹³ See KERWIN, *supra* note 91, at 148–53; McGarity, *supra* note 8, at 90.

²¹⁴ See McGarity, *supra* note 8, at 90–91.

²¹⁵ *Id.* at 91.

²¹⁶ *Id.* at 92.

²¹⁷ See *id.* at 92–94.

²¹⁸ My own view is that political review is limited in the extent to which it can prevent such improper influences on agency decisions. See Mark Seidenfeld, *Bending the Rules: Flexible Regulation and Constraints on Agency Discretion*, 51 ADMIN. L. REV. 429, 481–87 (1999); Mark Seidenfeld, *A Civic Republican Justification for the Bureaucratic State*, 105 HARV. L. REV. 1511, 1565–76 (1992). But see Richard J. Pierce, Jr., *The Role of Constitutional and Political Theory in Administrative Law*, 64 TEX. L. REV. 469, 507–09 (1985) (advocating for executive, rather than judicial, review of agency rules); Paul R. Verkuil, *Comment: Rulemaking Ossification—A Modest Proposal*, 47 ADMIN. L. REV. 453, 457–58 (1995) (proposing fast-track review of major rules on an up-down basis by Congress).

²¹⁹ See KERWIN, *supra* note 91, at 153–54; McGarity, *supra* note 8, at 95.

²²⁰ McGarity, *supra* note 8, at 94.

ciding what alternatives to consider, and drafting a preliminary version of the rule.²²¹ Other offices within the agency are formally involved only in reacting to that preliminary draft, and the input of these offices may come at very late stages of the process.²²² This discourages the incorporation of the various perspectives into the rule and essentially obviates any creative solutions that might take into account the values underlying these perspectives.²²³

In actuality, the work group process is likely to fall between the idealized team model and the hierarchical model. The team leader usually comes from the program office, and she may have an agenda that differs from that of other offices in the agency. The team leader has some say in membership in the work group.²²⁴ The team leader also has the responsibility to determine the goals of the rule,²²⁵ prioritize the collection of information and resolution of issues necessary for promulgating the rule,²²⁶ call meetings,²²⁷ assign tasks to members and subcommittees of the group,²²⁸ and disseminate information to group members.²²⁹ Even though the group may meet regularly, however, the information available to some group members may not be shared with others. Thus, the leader has the ability to isolate members from other offices and influence the group's decisionmaking process, and therefore can skew that process to favor the perspective of the lead office. In the extreme, members from the other offices may simply choose not to meet their commitments to participate in the work group process, in which case those offices' input will be limited to objections late in the process²³⁰ after the team's recommendation may have gained too much momentum to be derailed.

B. The Influence of Work Groups on Decisionmaking Biases

The previous description of the internal agency processes for rulemaking indicates that rulemaking is not an individual effort. According to the team model, the decision about which alternatives to propose to the politically accountable agency heads, as well as the information and analyses to accompany those alternatives, is a product of the work group.²³¹ Even in the purely hierarchical model, staff's actions are most accurately portrayed as a group effort. The individ-

²²¹ *Id.*

²²² *See id.* at 97.

²²³ *See id.*

²²⁴ *See* KERWIN, *supra* note 91, at 148.

²²⁵ *Id.*

²²⁶ *See id.* at 148-50.

²²⁷ *Id.* at 149.

²²⁸ *See id.* at 149-50.

²²⁹ *See id.* at 150.

²³⁰ *See* McGarity, *supra* note 8, at 91-92.

²³¹ *See id.* at 90.

ual in the lead office responsible for the rule simply cannot have the knowledge and ability to provide all of the analyses that go into formulating a rule.²³² Thus, she must rely on others in her office and elsewhere in the agency to answer particular questions and help formulate a proposed rule.²³³ Because agency promulgation of rules involves essentially group decisionmaking by staff, group dynamics could affect every aspect of the decisionmaking process and, therefore, the ultimate propensity of the rule to reflect individual biases.²³⁴

1. *The Potential for Groups to Attenuate Individual Decisionmaking Biases*

Research on group decisionmaking indicates that groups tend to outperform individuals in making many decisions, including solving problems that require analysis and evaluation.²³⁵ There are several possible explanations for the advantages of groups over individuals. First, groups seem to be very effective in error correction.²³⁶ When a problem has a demonstrably correct solution, groups usually get that solution.²³⁷ Because of the superiority of groups in solving problems with demonstrable solutions, group decision is likely to mitigate the bias introduced when knowledgeable individuals fail to apply technical decision rules. For example, if a group of business students were to make an investment decision, one would need only to point out that the group should ignore sunk costs for the group to follow that correct strategy.

²³² See *id.* at 61.

²³³ See *id.*

²³⁴ See Norbert L. Kerr et al., *Bias in Judgment: Comparing Individuals and Groups*, 103 PSYCHOL. REV. 687, 694–95 (1996). Unfortunately, there is little direct research on the impact of group dynamics on individual biases, and the studies that have been done are sometimes inclusive and may reflect the details of the group structure and the task that the group is asked to perform. See *id.* at 692–93.

²³⁵ See STEPHEN M. BAINBRIDGE, WHY A BOARD? GROUP DECISIONMAKING IN CORPORATE GOVERNANCE 12–16 (UCLA Sch. of Law, Research Paper No. 01-3, 2001), available at http://papers.ssrn.com/paper.taf?abstract_id=266683; Gayle W. Hill, *Group Versus Individual Performance: Are N + 1 Heads Better than One?*, 91 PSYCHOL. BULL. 517, 533 (1982). Groups, however, tend not to do as well as individuals in brainstorming, perhaps because discussion by other group members interfere with individuals' attempts to generate ideas. See Michael Diehl & Wolfgang Stroebe, *Productivity Loss in Brainstorming Groups: Toward the Solution of a Riddle*, 53 J. PERSONALITY & SOC. PSYCHOL. 497, 507–09 (1987).

²³⁶ “[Perhaps the greatest] point of group supremacy is the rejection of incorrect ideas that escape the notice of the individual when working alone.” Marjorie E. Shaw, *A Comparison of Individuals and Small Groups in the Rational Solution of Complex Problems*, 44 AM. J. PSYCHOL. 491, 502 (1932); see Hill, *supra* note 235, at 533.

²³⁷ See Daniel Gigone & Reid Hastie, *Proper Analysis of the Accuracy of Group Judgments*, 121 PSYCHOL. BULL. 149, 149 (1997); Patrick R. Laughlin & Alan L. Ellis, *Demonstrability and Social Combination Processes on Mathematical Intellectual Tasks*, 22 J. EXPERIMENTAL SOC. PSYCHOL. 177, 184 (1986).

Groups also provide an averaging function for tasks that result in outcomes that can be ordered along a scale. If each individual member proposes a solution with a different value on that scale, the group may engage in a compromise and choose an outcome with a value close to the average value of the members' individual solutions. Statistically, if choices of individual group members are distributed normally around a correct value, then the means of the choices made by members of groups will also be distributed around the correct value, but will exhibit less variance than the individual members' choices. Therefore, this averaging function of groups is a powerful mechanism for reducing nonsystematic errors in such decisions.²³⁸ For problems that have a unique solution that members cannot demonstrate to be correct given the information available to them, data indicate that group decisions tend to be about as accurate as the statistical mean of the decisions of the group's members.²³⁹ This supports the hypothesis that group decisionmaking may merely be a mechanism for averaging the choices of group members.

The averaging function of group decisionmaking implies that having a group make a decision may attenuate the dilution effect. Recall that this effect stems from irrational reliance on irrelevant information.²⁴⁰ Irrelevant information, however, is just as likely to bias a decision in one direction from the optimal choice as the other. Thus, the impact of the dilution effect is nonsystematic and will be reduced by averaging individual choices.²⁴¹ Similarly, the averaging function of group decisionmaking should also tend to decrease inaccuracies that result from individual members' being unaware of or ignoring relevant information. As long as each group member ignores different information, group members' individual choices will likely fall on different sides of the correct outcome and therefore the group decisionmaking process will tend to average out errors in these individual choices.²⁴² The averaging function may also imply that group decisionmaking may reduce the overconfidence of decisionmakers. By improving the accuracy of decisions, the averaging mechanism will make those decisions fall more in line with members' individual estimations of their accuracy, assuming that the group decisionmaking

²³⁸ See Robert B. Zajonc, *A Note on Group Judgments and Group Size*, 15 HUM. REL. 177, 177 (1962) (explaining that the superior performance of groups over individuals can be a consequence of how the group combines individual inputs); cf. Gigone & Hastie, *supra* note 237, at 159 (noting that simple cancellation of uncorrelated errors in individual judgments means that groups will almost always perform better than individuals).

²³⁹ See Gigone & Hastie, *supra* note 237, at 153.

²⁴⁰ Tetlock & Boettger, *supra* note 84, at 389.

²⁴¹ At least two studies support the hypothesis that group decisionmaking will reduce the dilution effect. See Gigone & Hastie, *supra* note 237, at 155.

²⁴² Data from the Gigone and Hastie studies also support this hypothesis. See *id.* at 161.

dynamic does not alter individual members' estimations of the decision accuracy. By its very nature, however, the seeming propensity of groups to try to reach a decision that takes into account the preferences of all members implies that group decisionmaking could exacerbate the compromise bias.

Groups may do better than individuals because they can pool the memories and particular decisionmaking skills of their members. In other words, group decisionmaking may be "an adaptive response to bounded rationality, creating a system for aggregating the inputs of multiple individuals with differing knowledge, interests, and skills."²⁴³ When possible, groups tend to divide decisionmaking tasks into subtasks that allow for specialization and assign such subtasks to the individuals most capable of performing them.²⁴⁴ If the group performs this aggregation effectively, its knowledge will be close to the sum of its members' knowledge. Effective aggregation, however, requires at least that the group decisionmaking process discourage the group from ignoring or rejecting true information offered by one member in favor of false information offered by another.²⁴⁵ If a group were able to pool the resources of its members perfectly, then on each subtask required to solve a problem, the group would perform as well as the member in the group who is best at that subtask. If the group were asked to make several decisions, the choices of such a group would be at least as accurate as the best choices of its individual members.²⁴⁶

Scholarship on group decisionmaking indicates that groups virtually never approach the accuracy of the best choice of their individual members for each problem posed.²⁴⁷ One legal scholar's recent review of the literature comparing group and individual accuracy identifies several studies in which groups outperformed their single best member.²⁴⁸ Such performance, however, could result simply from the averaging function of group decisionmaking; it does not indicate that those groups have effectively pooled the knowledge and skills of their

²⁴³ BAINBRIDGE, *supra* note 235, at 21.

²⁴⁴ See Hill, *supra* note 235, at 525.

²⁴⁵ See *id.* at 522 (noting that for problems not involving "eureka-type" solutions, the presence of low-ability group members hindered group performance because the high-ability members could not persuade other members of the correctness of their solutions).

²⁴⁶ The best choice of the group's individual members is different from and superior to the choice of the group's best member. Even the best member can get some answers to problems wrong that another member of the group gets right. See Gigone & Hastie, *supra* note 237, at 160 (distinguishing between the most accurate group member overall and the most accurate member on each judgment).

²⁴⁷ See *id.* at 153.

²⁴⁸ BAINBRIDGE, *supra* note 235, at 22-24 (identifying studies by Hiltz et al. and Michalsen et al. as reporting group decisions with greater accuracy than decisions of the group's best member, and by Yetton and Bottger as reporting no statistical difference between these measures of performance).

members.²⁴⁹ In addition, there is a rich literature demonstrating that small groups tend to pay less attention to information known only to a few members, and focus instead on information that is known to all members prior to group discussion.²⁵⁰ This literature indicates that pooling is, at best, imperfect.²⁵¹ One must be careful, however, before rejecting the pooling mechanism entirely. That pooling is imperfect does not imply that it is valueless as a mechanism for improving decisionmaking. Moreover, the groups involved in the reported studies were not chosen to exploit differences in training and experience of group members, which is the way that agency work groups are picked, and the problems involved did not require various subtasks that each demanded technical expertise, which is the essence of agency decisions that are made by work groups. Therefore, it may be much easier for an agency work group to identify the best member of the team to perform a task, and therefore to be more proficient at pooling the talents of the group than the literature would suggest.²⁵²

Nonetheless, pooling does not depend on interaction between group members to stimulate the performance of the group, but rather marshals the skills of each individual and uses those skills in appropriate contexts. Hence, pooling is unlikely to provide a mechanism by which group dynamics decrease individual decisionmaking biases. Instead, pooling only ensures that the group member most expert at a

²⁴⁹ See Gigone & Hastie, *supra* note 237, at 153 (discussing the results of a study by Michaelson, Watson, and Black). Comparing the accuracy of group decisions with those of the single best member of the group makes sense if one is considering whether to use a group rather than an individual decisionmaker, but not if one is trying to identify the mechanisms that explain group performance. If one initially cannot identify good decisionmakers, and if the group performs about as well as its best decisionmaker, then having a group make the decision greatly improves the probability that the decision will be correct. "Put another way, an advantage of group decisionmaking is that the group is sure to get the benefit of its best decisionmaker." BAINBRIDGE, *supra* note 235, at 25. If the cost of a wrong decision greatly exceeds the cost of having more than one individual involved in the decision, then employing a decisionmaking group makes economic sense.

²⁵⁰ I discuss this literature explicitly when focusing on some of the pathologies of group decisionmaking. See *infra* Part III.B.2(c).

²⁵¹ See *infra* Part III.B.2(c).

²⁵² In other words, work groups are teams rather than merely random collections of individuals, and this really could influence how such groups make decisions, including their susceptibility to biases. See Paul E. Jones & Peter H.M.P. Roelofsma, *The Potential for Social Contextual and Group Biases in Team Decision-Making: Biases, Conditions and Psychological Mechanisms*, 43 *ERGONOMICS* 1129, 1130–32 (2000). One study that was not concerned with accuracy in reaching an objectively determined, correct resolution of a problem, but rather involved a choice among three equally acceptable alternatives, supports the hypothesis that assigning expert roles to group members enhances pooling. See Garold Stasser et al., *Pooling Unshared Information: The Benefits of Knowing How Access to Information Is Distributed Among Group Members*, 82 *ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES* 102, 109–11 (2000). Even this study, however, which explicitly focused on group recall of information, demonstrated that pooling was far from perfect. *Id.* at 111 (reporting that even when expertise was assigned before discussion, groups discussed only 34% of items known to single group members).

particular task performs that task. Thus, the impact of pooling on individual biases should be much the same as the impact of expertise, and cannot be counted on to alleviate individual decisionmaking pathologies addressed in this Article.

Some who have studied group decisionmaking also assert that the interaction of group members engaged in the decisionmaking process fosters critical evaluation of internal judgments,²⁵³ which in turn can result in synergies that essentially improve the decisionmaking of the group's members compared to their decisions made without the benefit of group discussion.²⁵⁴ Such synergies could allow groups to perform better than the baseline of the best individual choices on each task. The fact that groups never approach this level of performance may mean that groups do not engage in the kind of self-critical evaluation that scholars of group processes envision. Again, however, one should not dismiss the synergy hypothesis too quickly. First, group decisionmaking may entail synergies, but the impact of these synergies on groups' ultimate decisions may be swamped by poor pooling of group resources.²⁵⁵ Second, agency decisions tend to have normative dimensions that the problems in controlled studies do not capture because, unlike those problems, the issues facing agencies call for tradeoffs between values. Hence, the inability of groups to outperform their members' best answers to each issue might be an artifact of the kinds of problems that group decision researchers have studied. Third, case studies of group decisionmaking in the negotiated rulemaking context find that such synergies occur when stakeholders directly negotiate to formulate proposed rules.²⁵⁶ This suggests, at a minimum, that groups which are properly structured and whose members have enough at stake can, at least on occasion, stimulate the kind of open yet critical assessments necessary to create synergies among group members.

If groups do engage in critical evaluation of internal judgment, they would be providing the very type of accountability that I postulate judicial review creates. Therefore, such group dynamics would tend to mitigate the same biases that judicial review does. The only exception would be the confirmation bias, which accountability generally amplifies unless the accountability mechanism explicitly requires decisionmakers to generate and consider alternatives to their working hy-

²⁵³ See Ernest J. Hall et al., *Group Problem Solving Effectiveness Under Conditions of Pooling vs. Interaction*, 59 J. SOC. PSYCHOL. 147, 154-55 (1963).

²⁵⁴ See BAINBRIDGE, *supra* note 235, at 24.

²⁵⁵ This swamping hypothesis is supported by one study in which the group performance bettered the mean of the individual members' decisions, although it did not exceed the best member's performance. See Hall et al., *supra* note 253, at 153-54 (concluding that group members' interactions improved the group's performance).

²⁵⁶ Freeman, *supra* note 204, at 33-55.

potheses.²⁵⁷ Nonetheless, I believe that judicial review is still valuable because, whether group decisionmaking does generate synergies remains uncertain and, as I argue below, without judicial review the composition, structure, and dynamics of agency work groups often will preclude whatever potential synergies the group might achieve.

2. *The Potential for Groups to Amplify Individual Decisionmaking Biases*

a. *Group Polarization*

When decisions that a group is asked to make become not only nonverifiable by other group members, but predictive or normative in nature, group dynamics can actually reduce the quality of decisionmaking. One phenomenon of group decisionmaking is group polarization—the “process whereby group discussion tends to intensify group opinion, producing more extreme judgments among group members than existed before discussion.”²⁵⁸ When the outcome of a decision can be placed on a normative scale, such as being risky rather than safe, liberal rather than conservative, or certain rather than uncertain, then the dynamics of group decisionmaking can actually increase the tendency of the group to choose an outcome that is on one end of the scale rather than in the middle. For example, a group of individuals who are more prone than average to take risks will choose outcomes with greater risks than the average risk of outcomes that group members would choose individually.²⁵⁹ By the same token, if the group were comprised of individuals less prone to risk than average, the group decision will be safer than the average of the pre-meeting decisions of the group members.²⁶⁰

Group polarization appears to be caused by two psychological mechanisms, one informational and one normative.²⁶¹ Those who attribute the phenomenon to the informational mechanism posit that group discussion sways a member according to the number and

²⁵⁷ See Lord et al., *supra* note 192, at 1241; Sanbonmatsu et al., *supra* note 96, at 898–99.

²⁵⁸ ROBERT S. BARON ET AL., *GROUP PROCESS, GROUP DECISION, GROUP ACTION* 73 (1992).

²⁵⁹ Group polarization originally was demonstrated with respect to the riskiness of the group decision, and was even called the “risky shift.” DONALD G. ELLIS & B. AUBREY FISHER, *SMALL GROUP DECISION MAKING: COMMUNICATION AND THE GROUP PROCESS* 45–46 (4th ed. 1994); Noah E. Friedkin, *Choice Shift and Group Polarization*, 64 AM. SOC. REV. 856, 857 (1999). Subsequently, psychologists demonstrated that polarization can occur with respect to a wide range of attitudes and decision judgments. See BARON ET AL., *supra* note 258, at 73; ELLIS & FISHER, *supra*, at 46.

²⁶⁰ See David G. Myers & Helmut Lamm, *The Group Polarization Phenomenon*, 83 PSYCHOL. BULL. 602, 603 (1976).

²⁶¹ See BARON ET AL., *supra* note 258, at 74–75; Myers & Lamm, *supra* note 260, at 613–18.

strength of new arguments that the member hears in group discussions for or against an outcome.²⁶² If group members are predisposed to reach a certain outcome, that means that they are aware of more plausible arguments for that outcome than against it. Nonetheless, they may not all be aware of the same plausible arguments. In that case, group discussion is likely to expose a group member to more arguments in support of the favored outcome that are new to her. This tends to sway the group toward a more extreme outcome in the direction that the group initially favored.²⁶³

Those who favor a normative explanation believe that groups often have internal norms that reflect a preference for underlying values that decisions will ultimately trade off against other values.²⁶⁴ Individuals in a group in which there is a norm that bears on a decision do not want to be seen as weak with respect to the underlying value.²⁶⁵ They therefore strive to signal that they prefer the value at least at the level they believe to be the group average.²⁶⁶ Because this average level is unknown, however, the result is a competition in which group members' preferences for this value move in the direction favored by the group norm. This competition ultimately results in a shift in the mean preference of group members away from the level of that value preferred by society—that is, toward a more extreme level than the initial mean of members' preferences.²⁶⁷ The data on group polarization support both mechanisms, with the informational mechanism dominating polarization of factual predictions and the normative mechanism dominating polarization of value-laden choices.²⁶⁸

Group polarization is not, by itself, a decisionmaking pathology. It does not lead to irrational or inaccurate decisions, only to more variable ones.²⁶⁹ However, when group members share an individual bias, polarization can cause the group decision to magnify the impact of that bias.²⁷⁰ The egocentrism bias is one that frequently might be magnified by polarization. By way of illustration, suppose a group

²⁶² See Amiram Vinokur & Eugene Burnstein, *Effects of Partially Shared Persuasive Arguments on Group-Induced Shifts: A Group-Problem-Solving Approach*, 29 J. PERSONALITY & SOC. PSYCHOL. 305, 306–07 (1974).

²⁶³ See ELLIS & FISHER, *supra* note 259, at 47.

²⁶⁴ See Robert Steven Baron & Gard Roper, *Reaffirmation of Social Comparison Views of Choice Shifts: Averaging and Extremity Effects in an Autokinetic Situation*, 33 J. PERSONALITY & SOC. PSYCHOL. 521, 528–30 (1976); Glenn S. Sanders & Robert S. Baron, *Is Social Comparison Irrelevant for Producing Choice Shifts?*, 13 J. EXPERIMENTAL SOC. PSYCHOL. 303, 311 (1977).

²⁶⁵ Sanders & Baron, *supra* note 264, at 304.

²⁶⁶ *Id.*

²⁶⁷ *Id.*

²⁶⁸ See BARON ET AL., *supra* note 258, at 74–75.

²⁶⁹ See Gigone & Hastie, *supra* note 237, at 162–63 (describing the circumstances in which the greater variability in group decisions might improve accuracy, but noting that an increase in variability is more likely to decrease accuracy).

²⁷⁰ See Sanders & Baron, *supra* note 264, at 304.

composed of professionals from a single discipline and office within an agency. Group members are likely to share a professional or office norm that may lead them all to advance one value over alternatives, and they are all unlikely to consider sufficiently how others who do not share that norm would assess the available choices. In that case, having these individuals make the choice as a group is likely to lead to polarization and hence to an outcome that is even farther from what others outside their profession or office might choose. As an example, consider the EPA's setting of an emission standard that an industry has thus far not achieved—a so called “technology-forcing standard.”²⁷¹ Engineers from the program office in the EPA may share an optimistic view of the industry's ability to develop technology that will meet the standard if money and resources are devoted to that task. Before the engineers were to meet, the egocentrism bias might lead them all to prefer a standard that is more stringent than that for which non-engineers outside the program office would opt. If the engineers were to choose the standard as a group, polarization would cause the final standard to be more strict than the average of the individual engineers' already stringent standard. Polarization might also magnify overestimation of the likelihood of an event due to the availability heuristic. Group members who were trained in a similar manner and work on similar projects are apt to be facile at recalling the same types of events and therefore might all overestimate the probability for the occurrence of that type of event. Polarization would then cause a group comprised of such individuals to overestimate that probability by an even greater amount.

Group polarization most likely will also exacerbate the impact of other biases, especially the confirmation bias. If group members start with a working hypothesis of what a rule should be, group polarization is likely to lead them to believe in that rule to a greater extent than before they engaged in discussion with fellow members. About the only bias not likely to be magnified by group polarization is the compromise bias, which can plague both individual decisionmakers and groups.²⁷² By encouraging decisions that are more extreme than the mean of group members' individual choices, polarization would appear to counteract this bias. Polarization, however, does not discourage compromise in a manner that necessarily drives the decision toward a best solution. Rather, the direction in which polarization pushes a group decision depends on the vagaries of the group members' preferences; it is just as likely to move a middle-of-the-road deci-

²⁷¹ For a discussion of some of the tradeoffs implicated by technology-forcing standards, see generally D. Bruce La Pierre, *Technology-Forcing and Federal Environmental Protection Statutes*, 62 IOWA L. REV. 771 (1977).

²⁷² See *supra* notes 104–13 and accompanying text.

sion farther away from the optimal outcome as towards it. Hence, the existence of the compromise effect does not eliminate the need to worry about group polarization.

b. *Group Confirmation Bias*

Like individuals, groups also tend to search unduly for information and pay too much attention to arguments that confirm initial hypotheses. If most of the members of a group share an initial view of the best decision, the group will seek predominantly information that supports that view.²⁷³ This is true even for groups of experts.²⁷⁴ Moreover, it is not simply a result of aggregating individual biases; the members' interaction increases the propensity of the group to prefer information supporting initially preferred decisions over and above the level that would occur if one simply pooled the individual requests for information.²⁷⁵ The phenomenon of biased information search decreases as the heterogeneity of members' opinions regarding the initial hypothesis increases.²⁷⁶ For groups of five, the bias became insignificant when two members of the group disagreed about the appropriate decision.²⁷⁷ Initial heterogeneity, however, did not curb the bias if the group had discussed the problem and reached some consensus on a preferred solution prior to seeking additional information.²⁷⁸

Even when some group members may be aware of information that undermines a group's initially preferred decision, the group may fail to consider the information to the same extent as it would consider confirming information. In other words, whether information is consistent with a group's preferred alternative affects the propensity of the group to discuss the information as well as its search for additional information. At the individual level, information consistent with the consensus group preference tends to be more salient and hence more easily recalled.²⁷⁹ In addition, there is often a group norm which expects group members actively to advocate their preferred outcome during debate.²⁸⁰ At the same time, groups try to simplify their decisionmaking tasks much as individuals do. Therefore, they try to narrow consideration early in the discussion to a few viable

²⁷³ See Schulz-Hardt et al., *supra* note 97, at 658, 665 (attributing the group bias to increased commitment to and confidence in a decision on which the group agreed).

²⁷⁴ See *id.* at 659-60 (using middle managers as research subjects).

²⁷⁵ See *id.* at 665.

²⁷⁶ See *id.* at 658.

²⁷⁷ *Id.*

²⁷⁸ See *id.* at 665 n.9.

²⁷⁹ Garold Stasser & William Titus, *Pooling of Unshared Information in Group Decision Making: Biased Information Sampling During Discussion*, 48 J. PERSONALITY & SOC. PSYCHOL. 1467, 1470 (1985).

²⁸⁰ *Id.*

alternatives.²⁸¹ As a result, groups tend to discuss information consistent with the position preferred by a majority of members, and to ignore information supportive of positions preferred by a minority of members.²⁸² Even if a group has no initial majority position, a significant plurality preference can bias information discussion in favor of that preferred outcome and can repress discussion of minority positions.²⁸³ When only a plurality of the group favors a particular outcome, however, debate of alternatives preferred by minorities is not shut down, but tends to be limited to only one minority-preferred outcome.²⁸⁴ In sum, group dynamics tend to focus both search and discussion toward information that supports the initially preferred outcome of a majority of group members. This phenomenon creates a group analog to the individual decisionmaker confirmation bias to which agency staff groups could be subject.

c. *Inadequate Reporting and Utilization of Unshared Information*

In addition to interactions that might increase individual decisionmaking biases, group decisionmaking exhibits its own set of pathologies that could affect agency rulemaking. As already mentioned, groups tend to be imperfect at pooling the totality of information available to their members. A key to understanding group consideration of information is the concept of "shared information." Information is "shared" when it is known to all members of the group prior to deliberation; it is "unshared" when it is known to only one member prior to deliberation.²⁸⁵ One of the major impediments to optimal decisionmaking by groups is their tendency to focus on shared rather than unshared information.²⁸⁶ This is a particular concern when unshared or partially shared information not only counsels a different choice than that supported by shared information, but ac-

²⁸¹ Craig D. Parks & Nicole L. Nelson, *Discussion and Decision: The Interrelationship Between Initial Preference Distribution and Group Discussion Content*, 80 ORGANIZATIONAL BEHAV. & HUM. DECISION PROCESSES 87, 96 (1999).

²⁸² See *id.* at 95-96.

²⁸³ *Id.* at 96.

²⁸⁴ *Id.*

²⁸⁵ See Stasser & Titus, *supra* note 279, at 1468. When information is known to more than one member of the group but not the entire group, it is "partially shared." Dennis D. Stewart & Garold Stasser, *The Sampling of Critical, Unshared Information in Decision-Making Groups: The Role of an Informed Minority*, 28 EUR. J. SOC. PSYCHOL. 95, 99 (1998).

²⁸⁶ See Daniel Gigone & Reid Hastie, *The Common Knowledge Effect: Information Sharing and Group Judgment*, 65 J. PERSONALITY & SOC. PSYCHOL. 959, 971 (1993); James R. Larson, Jr. et al., *Discussion of Shared and Unshared Information in Decision-Making Groups*, 67 J. PERSONALITY & SOC. PSYCHOL. 446, 458 (1994); Stasser & Titus, *supra* note 279, at 1477 (noting situations in which ignoring unshared information would be undesirable).

usually reveals that the choice favored by the unshared information is the superior one.²⁸⁷

In many instances the problem is not merely that the group chooses to underutilize unshared information which is raised in discussion, but rather that the member who is privy to unshared information simply fails to mention the information in group discussion.²⁸⁸ This may be a statistical artifact of the group process—because unshared or partially shared information by definition is known to fewer group members, the chance of some member raising it is less than the chance that some member will raise information known to everyone.²⁸⁹ But there appear to be mechanisms other than mere statistical probability at work in suppressing unshared information. Even after a group member introduces unshared information into the group discussion, groups spend less time considering that information than they do shared information,²⁹⁰ and unshared information influences their decisions less than shared information does.²⁹¹ In addition, the likelihood of a group hearing unshared information and relying on it depends on the status of the member who has the information. If the member is perceived by the group to be particularly competent at the task that the group is discussing, she is more likely to speak and to use unshared information to persuade the group to follow her preferred choice.²⁹² Group leaders would thus be more apt to mention and prompt the group to rely on unshared information than would low-status members.

The failure of groups adequately to learn about and consider unshared information has been demonstrated primarily for groups in which individual members were randomly assigned and did not have special expertise. In addition, many of the problems on which the groups were assigned to work are simplistic, and the data sets given to the participants may contain only a few cues about the best resolution of each problem. One study, however, did assign each member a unique role within the decisionmaking group, and supplied each with

²⁸⁷ Stewart & Stasser, *supra* note 285, at 96 (defining “hidden profile” as a decision problem in which unshared information favors a superior alternative to that favored by shared information); see also Gwen M. Wittenbaum, *Information Sampling in Decision-Making Groups: The Impact of Members’ Task-Relevant Status*, 29 SMALL GROUP RES. 57, 58 (1998) (pointing out that “incomplete information exchange can result in the group overlooking a decision alternative that is supported by the collective knowledge of all members”).

²⁸⁸ See Larson et al., *supra* note 286, at 458; Stasser & Titus, *supra* note 279, at 1476.

²⁸⁹ See Stasser & Titus, *supra* note 279, at 1477.

²⁹⁰ See Larson et al., *supra* note 286, at 458 (proffering several explanations for why shared information is repeated more often than unshared information that is introduced into group discussions).

²⁹¹ Gigone & Hastie, *supra* note 286, at 971.

²⁹² See Wittenbaum, *supra* note 287, at 77 (finding that members of a group experienced at a task tended to mention more unshared information than did inexperienced members).

role-appropriate unshared information. This study concluded that such groups of "experts," while less prone to focus only on shared information than are groups of nonexperts, nonetheless consider shared information more than they do unshared information.²⁹³ Moreover, this study used an experimental method involving a complex decision for which members had hundreds of relevant cues—a decision task not dissimilar from one an agency might face.²⁹⁴ Thus there is some support in the literature for the conclusion that groups similar to agency staff groups, working on problems similar to those that agency groups might encounter, tend to underutilize unshared information.

d. *Groupthink and Related Phenomena*

Another group decisionmaking pathology that has attracted attention is that of "groupthink." Irving Janis, who coined the term, defines it as "a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when the members' strivings for unanimity override their motivation to realistically appraise alternative courses of action."²⁹⁵ Essentially, groupthink involves a dynamic in which the desire to be part of the group and to share its values and prestige leads members to feel that the group is morally superior to its opponents, to stifle dissent, and to fail to subject the group consensus to critical consideration.²⁹⁶ The result frequently is a decision that reflects incomplete analysis after a biased information search, and that fails to include contingency plans in case the decision does not work as expected.²⁹⁷ According to Janis, groupthink is apt to occur when a group is cohesive and insulated from outside feedback during the decisionmaking process, especially when its members are homogeneous in terms of social background and ideology, when the group leader and decisionmaking norms and processes tend to direct the group toward a preselected outcome, and when the group believes that it faces a crisis situation in which there is high stress and little opportunity for a decision that will improve the status quo.²⁹⁸

Janis developed the concept of groupthink by analyzing various public policy fiascos during the 1960s and 1970s. The very nature of

²⁹³ See Dennis J. Devine, *Effects of Cognitive Ability, Task Knowledge, Information Sharing, and Conflict on Group Decision-Making Effectiveness*, 30 SMALL GROUP RES. 608, 616–17, 626 (1999).

²⁹⁴ *Id.* at 616–17 (studying group creation of a strategic business plan for a fictional regional airline).

²⁹⁵ IRVING L. JANIS, *GROUPTHINK: PSYCHOLOGICAL STUDIES OF POLICY DECISIONS AND FIASCOS* 9 (1982).

²⁹⁶ *Id.* at 256–58.

²⁹⁷ *Id.* at 175.

²⁹⁸ See *id.* at 242–56.

some of the predicates for groupthink, however, make Janis's hypotheses extremely difficult to test in controlled laboratory settings. This has led to some controversy about the actual prevalence of groupthink as a phenomenon,²⁹⁹ and whether Janis's predicates for and effects of groupthink actually characterize many real-world decisions.³⁰⁰ For example, although Janis includes groups' cohesiveness as an essential predicate for groupthink, laboratory studies have found that such cohesiveness does not affect the propensity of groups to fail to subject their decisions to intragroup critical thought.³⁰¹ Of course it is possible that the level of cohesiveness that can be achieved in the laboratory simply cannot approach that which inheres in a group whose members "meet together for many weeks and work on decisions to which each member will be committed."³⁰² Nonetheless, some groupthink behaviors have been induced in groups by manipulating the directiveness of group leaders.³⁰³ Leaders who both stressed the importance of the group reaching unanimity when faced with a crisis situation and suggested their own solution at the outset of the group meeting significantly discouraged other members from proposing alternative solutions or introducing facts into the discussion.³⁰⁴ Moreover, this result occurred in groups whose leaders were simply designated and briefed before the meeting about the style they should use during the discussion.³⁰⁵ Thus, the legitimacy of being designated a group leader may be enough, when coupled with a directive leadership style, to cut off debate and critical evaluation of the leader's initially suggested decision.³⁰⁶

Some researchers have surmised that groupthink might not be rare in government decisionmaking.³⁰⁷ Tom McGarity has even suggested that a potential drawback to the team model for staff develop-

²⁹⁹ See Kroon et al., *supra* note 182, at 92 (noting that groupthink's "theoretical and empirical status has yet to be established in a firm and unequivocal manner").

³⁰⁰ Although there has been little research to replicate Janis's findings, and laboratory experiments have not always supported his hypotheses, there is "a sufficient body of case study findings that substantiate the basic idea of groupthink." *Id.*; see also Annette R. Flippen, *Understanding Groupthink from a Self-Regulatory Perspective*, 30 SMALL GROUP RES. 139, 158 (1999) (asserting that groupthink "can occur in almost any type of group"); Matie L. Flowers, *A Laboratory Test of Some Implications of Janis's Groupthink Hypothesis*, 35 J. PERSONALITY & SOC. PSYCHOL. 888, 888 (1977) (concluding that if Janis's hypothesis is correct it could be "especially relevant in understanding governmental decisions, both at a local and a national level").

³⁰¹ See Flippen, *supra* note 300, at 140-41.

³⁰² JANIS, *supra* note 295, at 242.

³⁰³ Flippen, *supra* note 300, at 141 (summarizing the literature).

³⁰⁴ See Flowers, *supra* note 300, at 889, 893 (reporting that teams with "open leaders" proposed more solutions and introduced more facts into their analyses of the posed problem than did "closed leaders").

³⁰⁵ See *id.* at 890.

³⁰⁶ See *id.* at 895.

³⁰⁷ *E.g., id.* at 888.

ment of a rule is the potential for the work group to engage in groupthink.³⁰⁸ Certainly, agencies frequently deal with pressure situations in which a rule is a response to some unforeseen turn of events or even legislative and judicial compulsion that the agency adopt a rule. Thus, the group of staff members formulating and analyzing a potential rule frequently will have reasons to favor quickly reaching a unanimous decision over taking time to ensure the decision is sound.³⁰⁹ Moreover, work group leaders tend to come from the program office for the area in which the rule will operate, and hence have perhaps the broadest base of relevant expertise.³¹⁰ Leaders often can select team members,³¹¹ and may share the program office's agenda regarding what the rule should achieve. Therefore, they have the authority that comes with expertise and some power over group members, as well as the legitimacy of being designated leaders.

Nonetheless, I suspect that groupthink is more of a problem when the work group's interactions become hierarchical. In those situations, the group that actually formulates the rule is likely to be dominated by members from the program office who share a professional and workplace background. Meanwhile, in the team model, members of the work group have an allegiance both to the group and to their home offices within the agency. They often will be required to report to those offices from time to time, which makes the group less isolated and more subject to reality checks by staff outside the work group.

IV

THE IMPACT OF JUDICIAL REVIEW ON RULEMAKING WORK GROUPS' STRUCTURE AND DYNAMICS

My analysis of the institutional nature of agency rulemaking demonstrates that the rulemaking process involves a group effort and for that reason holds the potential to improve the quality of staff decision-making. Group dynamics, however, usually do not live up to their potential, and my analysis indicates that when the institutional dynamics work imperfectly, they threaten to amplify individual decisionmaking biases as well as to introduce additional biases into the process. In particular, this Article has identified four pathologies that can affect group decisionmaking: group polarization, group confirmation bias, inadequate reporting and utilization of unshared information, and groupthink. What remains for discussion is the influence of judicial

³⁰⁸ McGarity, *supra* note 8, at 92.

³⁰⁹ *See id.*

³¹⁰ *See id.* at 73; *see also* KERWIN, *supra* note 91, at 148 (asserting that "[t]he leaders of work groups are usually selected because of their expertise in the subject matter of the new rule").

³¹¹ McGarity, *supra* note 8, at 73.

review on rulemaking work groups' dynamics. In particular, is review likely to mitigate or reinforce the propensity for group decisionmaking to aggravate decisionmaking bias? There is some psychology research that addresses the impact of accountability on group decisionmaking processes, but not much. Therefore, assessing the impact of judicial review on these processes requires some speculation. The key to this assessment, however, lies in the observation that the undesirable impacts of group decisionmaking stem from three attributes of the structure or dynamics of the group—its homogeneity, its hierarchical nature, and the style of its leader. There are reasons to believe that judicial review beneficially influences all three.

Homogeneity is perhaps the most critical group attribute because it complicates all four of the identified pathologies that can afflict group decisionmaking. Group polarization does not occur every time a group makes a decision.³¹² A prerequisite for group polarization is that the initial preferences of the group fall on one side of the societal norm, and even then the final group disposition may not be significantly more extreme than the average of its members' initial preferences.³¹³ When groups start with mixed initial preferences, the individual attitudes of group members actually depolarize.³¹⁴ In other words, polarization is likely to occur when groups are "attitudinally homogenous," which, in turn, is more likely to be the case when members share similar professional and work backgrounds than when they pursue different disciplines and come from different offices within the agency. This makes sense when one thinks of the normative explanation for polarization. Without homogeneity, the group members are less likely to share a norm that inspires symbolic competition.

Similarly, the group dynamic leading to the confirmation bias depends on the group's reacting to consensus about the preferred outcome prior to completing their search for information or discussion of the problem. People use social consensus information to determine the point at which the group tries to converge on a particular solution.

However, this guideline is only accurate to the degree that the group composition itself is "unbiased" (i.e. that the group composition somehow represents the opinion distribution in the population). . . . [A] problem of homogeneous groups could be that they don't recognize this *similarity bias* in the group composition and thus overestimate the validity of their social consensus information.³¹⁵

³¹² See Amiram Vinokur & Eugene Burnstein, *Depolarization of Attitudes in Groups*, 36 J. PERSONALITY & SOC. PSYCHOL. 872, 884 (1978).

³¹³ See *id.* at 872, 884.

³¹⁴ See *id.*

³¹⁵ Schulz-Hardt et al., *supra* note 97, at 667.

This would explain why homogeneous groups are more susceptible to the confirmation bias than are heterogeneous groups.³¹⁶

Homogeneity magnifies the propensity of groups to focus on shared information in a more direct fashion. When group members all come from a common background, their knowledge relevant to the problem the group faces is likely to overlap substantially. Homogeneity not only restricts the knowledge base of the group, it also results in the narrow knowledge base being shared by the group members, and thus increases the probability that the group will not seek to expand that base before making a decision. In other words, in a heterogeneous group, little information is likely to be fully shared prior to group discussion. This lack of shared information forces the group to consider information initially known only to one or a few group members. Not so in homogeneous groups.³¹⁷

According to Janis, homogeneity also increases the probability that an otherwise susceptible group will fall victim to groupthink. "Lack of disparity in social background and ideology among the members of a cohesive group makes it easier for them to concur on whatever proposals are put forth by the leader"³¹⁸ Thus, the willingness of members of homogeneous groups to follow the leader, as well as their propensity to know the same information, make such groups more susceptible to groupthink than heterogeneous groups.

Hierarchical structures in groups amplify problems stemming from ignoring unshared information and perhaps from the willingness of group members to accept the solutions put forth by directive leaders. Low-status members in a group are less likely to mention unshared information than are those with recognized experience or task-related competence.³¹⁹ In other words, for a group in which all members are valued for what they bring to the task, the likelihood that members will share information known uniquely to them increases. Moreover, to the extent that group leaders are seen as high-status members with significant task competency,³²⁰ a directive leader could channel discussion toward information to which she alone is privy, tending to support her preferred outcome. Other members aware of information that would support a different outcome frequently might fail to mention it to the group. This would contribute to the formation of an early consensus around the leader's initial suggestion, one

³¹⁶ See *id.* at 666.

³¹⁷ *Id.*

³¹⁸ JANIS, *supra* note 295, at 250.

³¹⁹ Wittenbaum, *supra* note 287, at 77.

³²⁰ Recall that leaders of agency work groups often come from the lead office, which has the most directly relevant experience with the problem the rule will address, and usually are chosen for their expertise on the subject. See KERWIN, *supra* note 91, at 148; McGarity, *supra* note 8, at 73.

of the prime contributors to groupthink. Directive leadership is the only factor identified by Janis that has been shown to cause groupthink behavior in controlled laboratory studies.³²¹ Moreover, directive leadership induces such behavior even when groups are not particularly cohesive.³²² Therefore, directive leadership may be the primary culprit for the fiascos that Janis explored to discover the phenomenon of groupthink.

Judicial review discourages agencies from relying on homogeneous groups to formulate rules because the agency must address any question or problem that a challenger might raise on review and that a judge might consider important, regardless of the background of the judge. Thus, early on in the rulemaking process, the agency needs to take into account perspectives that may be held by those with different professional training and whose work might focus on different effects of the rule.

For similar reasons, judicial review is likely to discourage hierarchical structures in agency work groups. The prospect of judicial review might encourage those with knowledge of unshared information that undermines an original majority consensus to communicate it to the group. This is because group members are less likely to regard the information as threatening if its introduction is necessary to protect the group's decision from a surprise attack at the judicial review stage. In other words, the input of each member becomes valuable, if only as a means of identifying potential avenues of challenge in the courts. Judicial review therefore makes group members less likely to regard colleagues who bring a unique perspective to the rulemaking process as less deserving of respect, which in turn encourages these colleagues to contribute their knowledge to the group discussion. Even a work group leader with an agenda will be apt to abide dissent from other group members in order to assure that the rule that emerges is well insulated against judicial challenge.

Judicial review also holds great potential to alleviate groupthink and the impact of directive leadership. First, there is empirical evidence that requiring a group to explain its decisions reduces groupthink behavior.³²³ Moreover, suggested antidotes to the groupthink phenomenon include fostering of open discussion of alternatives to the group's ultimate decision, consideration of worst-case scenarios, preventing group leaders or other high-status members

³²¹ See Flippen, *supra* note 300, at 140–41.

³²² See *id.*

³²³ See Kroon et al., *supra* note 182, at 109–10 (reporting that group accountability reduced pressures towards uniformity and counteracted leader-centered decisionmaking, but that individual accountability for contributions to the group decision did so to a greater extent).

from championing their preferred outcomes early in the decisionmaking process, and having outside experts review the group decision.³²⁴ Arbitrary and capricious review explicitly calls for the consideration of alternatives, encourages the work group to consider devil's advocates' positions, and provides the agency with incentives to get feedback on the rule from individuals outside the work group. Thus, judicial review provides an effective mechanism for enhancing the impact of accountability and discouraging the impact of directive leadership.

CONCLUSION

Those who have recently written about the impact of judicial review on agency decisionmaking have not treated the practice kindly. Many express concern about the burdens that review places on agencies, and some even conclude that judicial review hurts the quality of the decisions that the agency makes when adopting a new rule. These critics, however, assume that the agency, and the particular decisionmakers within it, react as rational maximizers of utility toward the incentives created by judicial review. At most, they give some passing reference to psychological constructs of how individuals and groups make decisions.

This Article takes as a major premise that psychology has much to tell us about the ways in which decisions deviate from the assumptions that public choice theorists and others who rely on economic rationality use in evaluating the workings of our governmental institutions. Individuals do not tend to optimize every decision, but instead rely on habitual decision rules and other rules of thumb as shortcuts to making decisions. In certain situations, these shortcuts can lead to avoidable bad decisions. One mechanism for avoiding careless or improper reliance on such shortcuts is to hold the decisionmaker accountable for her choice. If structured properly, accountability can attenuate many of the systematic biases that flow from improper use of decision-making shortcuts.

The structure of beneficial accountability corresponds very well to the nature of judicial review of agency rulemaking under current standards of arbitrary and capricious review. There is also reason to believe that agency staff members react to judicial review of a rule as they do to direct accountability for a personal decision. In addition, arbitrary and capricious review is likely to reduce any magnification of individual biases that result from the group nature of agency decisionmaking. Therefore, arbitrary and capricious review provides incentives for agency staff to take appropriate care and to avoid many systematic biases when formulating rules and ushering them through

³²⁴ See JANIS, *supra* note 295, at 262–71.

the rulemaking process. This does not mean that judicial review will eliminate all decisionmaking biases. There is at least one bias, the propensity of individuals to avoid extreme choices even when logic would not dictate that they do so, that judicial review might even exacerbate. In addition, review will never prevent all biased decisionmaking, but instead can only encourage decisionmaking processes that reduce the probability of bias.

Finally, a note of caution is appropriate: the psychological results which I discuss all come from laboratory experiments, some of which involve very different individuals performing very different tasks than those involved in the formulation of agency rules. Thus, the suggestion that judicial review improves the quality of agency rulemaking must be seen as just that—a suggestion. Nonetheless, I believe that there is enough evidence to warrant further consideration of the likely impact of review on the performance of agency staff, and, more particularly, to refute critics who, without considering this evidence, conclude that judicial review has a deleterious impact on the quality of rulemaking.