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Introduction

*[A] psychology of judgment and decision making that ignores intuitive skill is seriously blinkered.*¹

Judicial intuition is misunderstood. Labeled as cognitive bias, it is held responsible for stereotypes of character and credibility. Framed as mental shortcut, it is blamed for overconfident and mistaken predictions. Depicted as flashes of insight, it takes credit for unearned wisdom.

The true value of judicial intuition falls somewhere in between. When judges are making *judgments* about people (he looks trustworthy) or the future (she will be the better parent), the critics are correct: intuition based on past experience may close minds. Once a judge recognizes a familiar pattern in a few details, she may fail to see the whole fabric's color and design. When judges are *solving problems*, the critics are, however, incorrect: it is in this process that judicial intuition has the power to open minds. Visual and verbal cues point to similarities, triggering an intuition or recognition of potential parallels, unlocking patterns and unblocking paths. When judges are solving problems—and they are doing so when they are finding, interpreting, applying, and making law—both the lawyers

* © Linda L. Berger 2013. Family Foundation Professor of Law, University of Nevada, Las Vegas, Boyd School of Law. Thank you to the Boyd School of Law and former Dean John White for supporting the writing of this article; to Arizona State University's Carrie Sperling and her colleagues for inviting me to present an early version at the 2012 Rocky Mountain Regional Legal Writing Conference; and to a collection of "good readers" for their thoughtful responses: Linda Edwards, Bryn Esplin, Rebecca Scharf, Kathy Stanchi, and the LC&R peer reviewers. Deepest thanks to LC&R's unparalleled team of editors, Ian Gallacher, Jessica Clark, Sue Painter-Thorne, Joan Magat, and Ruth Anne Robbins.

¹ Daniel Kahneman & Gary Klein, *Conditions for Intuitive Expertise: A Failure to Disagree*, 64 *Am. Psychol.* 515, 525 (2009). Balancing this statement, the authors also conclude that "a psychology of professional judgment that neglects predictable errors [of intuition] cannot be adequate." *Id.*

seeking to persuade them and the judges themselves may effectively apply lessons suggested by studies of intuitive problem solving.²

An example of the kind of problem judges must solve is the legal question that lacks good precedent because cultural, social, or technological change has rendered the old rules a poor fit. In *United States v. Jones*,³ the Supreme Court was presented with such a problem, created by technological advances that have made it cheap and easy to carry out long-term police surveillance of criminal suspects. In the days before technology made it possible to remotely monitor the movements of suspected criminals, extended periods of surveillance were rare.⁴ As remote monitoring via Global Positioning System (GPS) tracking devices became more common, so did the legal question of when such monitoring becomes an unconstitutional search. In *Jones*, the Supreme Court was asked to decide whether a Fourth Amendment violation had taken place when a GPS device was attached to a car and the car's movements were subsequently tracked for almost a month.⁵

The *Jones* challenge to the warrantless "search" constituted a problem-solving situation because the prior precedents involved either a physical trespass onto the defendant's property or a more-personal intrusion into the defendant's reasonable expectation of privacy. Faced with the one-time installation of a GPS monitor followed by weeks of constant surveillance, the Supreme Court had to choose between applying the "trespass" rule, which did not appear to cover the month-long monitoring, and reinterpreting the "reasonable expectation" rule, which prior cases had said did not encompass surveillance on public streets such as those on which Jones's car had traveled.⁶ Because Jones was in possession of the Jeep registered to his wife, it was possible for the Court to find that the government had physically trespassed without a warrant onto the defendant's property when agents installed the device on the undercarriage of the car.⁷ Justice Scalia chose that route, and four other justices agreed that in *Jones* itself, the trespass rule was enough to decide the

² "Intuitive problem solving" is the term I will use for what the researchers refer to as the naturalistic decisionmaking approach or the recognition-primed decision model. Gary Klein, *Sources of Power: How People Make Decisions* 4–6, 15–30 (1998). Thank you to Chris Wren for recommending *Sources of Power* to those interested in legal persuasion.

³ 132 S. Ct. 945 (2012) (majority).

⁴ Although we take for granted that it is the law that protects our privacy from unwarranted government intrusion, "[i]n the pre-computer age, the greatest protections of privacy were neither constitutional nor statutory, but practical. Traditional surveillance for any extended period of time was difficult and costly and therefore rarely undertaken." *Id.* at 963 (Alito, J., concurring).

⁵ *Id.* at 947–48 (majority).

⁶ *Id.* at 949–51.

⁷ *Id.* at 954 (Sotomayor, J., concurring).

outcome.⁸ As the concurring opinions pointed out, however, the majority provided no answer to what would happen in a case where no physical trespass was necessary to install the monitoring device, but consistent and long-term monitoring nonetheless took place—a growing possibility given new technologies.⁹

The application of judicial intuition could help solve this problem, and others like it, by bringing to mind a series of potential answers that are “good enough” for testing. Whether prompted by lawyers seeking to persuade them or by the judges themselves, intuitive problem solving begins with cues pointing to similarities. As detailed in section III, intuition—the recognition of potentially parallel patterns and paths—may be triggered by factual analogies as well as by the use of metaphor and perspective. In *Jones*, a lawyer might have suggested a factual analogy to the unceasing observation that would occur if undercover police officers were stationed in every public space and workplace and on every road and street corner.¹⁰ Recognition of an alternative pattern might be prompted by a factual analogy to the use of fixed video cameras to detect traffic violations on highways and at major intersections. Cuing of another pattern might be invited by the metaphor of one-way glass through which those in authority observe the behavior of prisoners or the subjects of psychological experiments. How a judge views the omnipresent monitoring of individuals by government agents could be shifted by raising distinct philosophical and cultural perspectives (crime requires vigilance, freedom requires restraint). In intuitive problem solving, these cues and prompts provide the opening. Once a judge’s intuition triggers recognition of the potential parallels, the alternatives are tested by imagining and evaluating how they would play out over time.

As an example of the kind of problem that is not easily solved by available interpretations and precedents, the *Jones* decision illustrates the value of judicial intuition in suggesting patterns and paths for exploration. Intuitive problem solving is different from conventional legal argument because it does not rely *in the first instance* on deduction from rules or analogies to precedent. Instead, it begins in cues prompting intuitive recognition of similarities, followed by testing and evaluation, which may

8 Justice Scalia’s reasoning was that “[t]he Government physically occupied private property for the purpose of obtaining information. We have no doubt that such a physical intrusion would have been considered a ‘search’ within the meaning of the Fourth Amendment when it was adopted.” *Id.* at 949 (majority).

9 Justices Sotomayor and Alito wrote separate concurrences criticizing the majority opinion for failing to address the changing circumstances that have made physical intrusion unnecessary for many kinds of surveillance. *Id.* at 954 (Sotomayor, J., concurring); *id.* at 957 (Alito, J., concurring).

10 This analogy is based on a hypothetical advanced in Jed Rubenfeld, *The End of Privacy*, 61 *Stan. L. Rev.* 101, 104 (2008). Rubenfeld points out that existing Fourth Amendment doctrine would find no constitutional violations in this scenario.

or may not include the more-traditional argument structures. Intuition is the invitation to the dance, not the full ballet.

The argument for applying judicial intuition appears to run counter to recent findings of one branch of cognitive research and relies instead on a branch of decisionmaking research that has been mostly neglected by legal scholars.¹¹ The latter researchers define intuition as “nothing more and nothing less than recognition” of a pattern or path stored in the decisionmaker’s memory.¹² In this sense, intuition can pull up an instant snapshot of a perception or experience already present in our minds, and so it is easy to see why intuition may lead our *judgments* astray. But in exactly the same sense, intuition can provide the wide-angle or telephoto lens essential for the very different process of *problem solving*, a process in which these lenses can be used to reveal unusual angles and unseen corners.

To support the argument that lawyers and judges should learn from both, I will reconcile claims from the heuristics-and-biases branch of cognitive psychology (the branch that demonstrated that intuitive mental shortcuts, or heuristics, often lead to mistakes and cognitive biases) with findings from studies of intuitive problem solving (the branch that studies intuition as the primary method used by real-world experts to identify options for testing). Echoing the findings of other heuristics-and-biases research, studies involving trial judges indicate that intuition regularly misleads them when it comes to making *judgments*.¹³ When judges use

11 The first branch, heuristics-and-biases research, concentrates on the “overconfident and biased impressions” that grow out of intuition; the second branch, naturalistic decisionmaking, on the expertise that may lead to “true intuitive skill.” Kahneman & Klein, *supra* n. 1, at 515. Heuristics and biases are two sides of the same coin: the heuristic is an experience-based rule of thumb that often works well, but can also lead to systematic errors or cognitive biases.

This article draws on the work of Daniel Kahneman and Gary Klein as the leading representatives of these approaches. Kahneman, a psychologist, won the Nobel Prize in economics in 2002; he and his long-time partner, Amos Tversky, conducted the first study in the field now known as heuristics and biases in 1969. The best-selling success of Kahneman’s *Thinking, Fast and Slow* (2011), focusing on the “biases of intuition,” followed by only a few years the best-selling success of Malcolm Gladwell’s *Blink: The Power Of Thinking Without Thinking* (2005) (focusing on the wonders of intuition). Kahneman, though expressing admiration for Gladwell, said in a radio interview during his book tour that “Malcolm Gladwell definitely created in the public arenas the impression that intuition is magical That belief is false.” Interview by Charlie Rose with Daniel Kahneman, (Feb. 28, 2012) (available at <http://www.charlierose.com/view/interview/12185>).

Since 1985, Klein, an experimental psychologist, has studied and written about the field of naturalistic decisionmaking, examining how intuition triggers good decisionmaking in situations such as firefighting, nursing, and military leadership. See Klein, *Sources of Power*, *supra* n. 2, at 1–2; Gary Klein, *Streetlights and Shadows: Searching for the Keys to Adaptive Decision Making* (2009).

In a September 2009 article, Kahneman and Klein reported that after several years of collaboration, they had reached a “coherent view of expert intuition,” agreeing on the circumstances that would allow intuition to yield good decisionmaking. Kahneman & Klein, *supra* n. 1, at 524.

12 Herbert A. Simon, *What is an “Explanation” of Behavior?*, 3 *Psychol. Sci.* 150, 155 (1992).

13 See e.g. Chris Guthrie, Jeffrey J. Rachlinski & Andrew J. Wistrich, *Blinking on the Bench: How Judges Decide Cases*, 93 *Cornell L. Rev.* 1, 29–43 (2007) (suggesting an “intuition-override” model of judging in which judges make intuitive decisions that sometimes are overridden by deliberation) [hereinafter Guthrie et al., *Blinking on the Bench*]; Jeffrey J. Rachlinski, Chris Guthrie & Andrew J. Wistrich, *Inside the Bankruptcy Judge’s Mind*, 86 *B.U. L. Rev.* 1227 (2006) (reporting results of an experiment with specialist-court judges); Andrew J. Wistrich, Chris Guthrie & Jeffrey J. Rachlinski, *Can Judges Ignore*

heuristics based on past experience (these include mental shortcuts such as stereotypes, prototypes, scripts, and schema) to make inferences from what they observe or perceive and then follow those inferences to make judgments about character or to predict the future, intuition appears to *close* minds, excluding some relevant facts to hasten a “snapshot” judgment.

In comparison, the intuitive problem-solving branch of research has not before been applied to the psychology of judging.¹⁴ Based on studies of experts making decisions in the field, that body of work suggests that when it comes to solving problems, intuition *opens* minds. It prompts decisionmakers to recognize seemingly appropriate patterns and paths as well as possible parallels or alternatives. Rather than misleading expert problem solvers, intuition invites them to enter into a process that can lead to workable and effective decisions.¹⁵

The first two sections of the article explore these branches of cognitive research as well as current thinking about judicial decision-making. The third section analyzes the use of intuitive problem-solving methods in briefs and opinions, and the conclusion suggests that judges, lawyers, and other students of legal persuasion should apply these insights to their own problem-solving situations.¹⁶

Inadmissible Information? The Difficulty of Deliberately Disregarding, 153 U. Pa. L. Rev. 1251 (2005) (concluding that judges, like juries, are generally unable to disregard the influence of relevant, yet inadmissible, evidence); Chris Guthrie, Jeffrey J. Rachlinski, & Andrew J. Wistrich, *Inside the Judicial Mind*, 86 Cornell L. Rev. 777 (2001) (concluding that even though judges appeared to be less susceptible than non-judges to two cognitive illusions, framing effects and representativeness, judicial decisionmaking was significantly affected by each of five illusions tested).

14 As Gary Klein explains, his studies go “against the general stream of research” in cognitive psychology:

As long as the rational and analytical processes were defined as the ideal for reasoning, . . . [t]he job of researchers [was] to understand why people might generate the wrong values or inconsistent values. . . . Rather than helping to tie off loose ends, the sources of power I describe in this book are busily proliferating them.

Klein, *Sources of Power*, *supra* n. 2, at 286.

15 *Id.*

16 Complex problem solving of the kind required in *United States v. Jones* likely occurs in both trial courts and appellate courts. Although trial court judges depend more obviously on their judgments about credibility, probability, and the future, they also are the first in line to be asked to solve problems of legal interpretation and application. Similarly, though appellate judges may more often be called upon to solve problems of legal interpretation, they make the same kinds of “eyeball” judgments on many discrete issues along the way.

Though most judges and decisionmaking researchers characterize judicial decisionmaking as complex, two psychologists concluded in a 1984 article that “legal decisions are actually very simple, in the sense that very few factors are typically taken into account, and that the few factors which are taken into account are generally not those which the decisionmakers claim they are responsive to.” Vladimir J. Konecni & Ebbe B. Ebbesen, *The Mythology of Legal Decision Making*, 7 Intl. J. L. & Psych. 5, 6–7 (1984) (based on statistical analyses of arrest decisions, bail recommendations and decisions, sentencing recommendations and decisions, and personal-injury settlement recommendations). Elsewhere, the same authors concluded that decisionmakers within the criminal justice system “often report that they follow decision policies that either are so global as to be meaningless . . . or, when specific enough, describe policies that are inconsistent with their actual decision strategies.” Ebbe B. Ebbesen & Vladimir J. Konecni, *Criticisms of the Criminal Justice System: A Decision Making Analysis*, 3 Behav. Sci. & L. 177, 190 (1985).

I. Schools of Thought about Thinking

In this article, I will refer to the full range of choices that judges make as *decisionmaking*. Within that category, I will refer to the up-or-down, yes-or-no votes that judges cast on one-dimensional questions as *judgments* and to the process of resolving more-complex questions by choosing a workable and effective option as *problem solving*.¹⁷ Simply put, the distinction between *judgments* and *problem solving* is the difference between making predictions based on perceptions (judgments) and choosing among options to achieve particular goals (problem solving). Judgments may be right or wrong (as noted earlier, they call for a “yes” or “no” answer) while problem solving likely encompasses several workable answers.

So, for example, judges may be asked to (1) make judgments about witness credibility, future criminality, or the probability of one thing having caused another; or they may be asked to (2) solve problems by identifying a workable approach to new or previously unrecognized or unaddressed problems or by choosing the better alternative among a range of options.¹⁸ No matter what kind of decision a judge is making, judicial choices often occur within a context of “multiple, fallible, incomplete, and sometimes conflicting cues.”¹⁹

Although choosing the best among a group of options is only one of the kinds of problems that judges solve, the study of decisionmaking has assumed that most decisions involve exactly and only that: choosing the better alternative through a process that carefully lays out, weighs, and

¹⁷ According to Reid Hastie, behavioral researchers differentiate between “judgment” and “decisionmaking”; because the term “decisionmaking” has been used in the all-encompassing sense in much of the legal literature, I will use it that way in this article and distinguish between judgment and problem solving, intending to separate out judgments based on perception from choices based on a more complex process.

Hastie makes the distinction as follows:

Research on judgment has been inspired by analogies between perception and prediction. For judgment researchers, the central empirical questions concern the processes by which as-yet-obscure events, outcomes, and consequences could be inferred (or, speaking metaphorically, “perceived”): How do people integrate multiple, fallible, incomplete, and sometimes conflicting cues to infer what is happening in the external world? . . . The primary standards for the quality of judgment are based on accuracy [of] the correspondence between a judgment, and the criterion condition that was the target of the judgment.

On the other hand, decisionmaking research

was inspired by theories concerned with decision making that were originally developed by philosophers, mathematicians, and economists. These theorists were most interested in understanding preferential choice and action: How do people choose what action to take to achieve labile, sometimes conflicting goals in an uncertain world? These models are often expressed axiomatically and algebraically, in the tradition established for measurement theories in physics and economics.

Reid Hastie, *Problems for Judgment and Decision Making*, 52 Annual Rev. Psychol. 653, 657 (2001).

¹⁸ It is possible to view judgments of the first type as calling for decisions based primarily on perceptions about facts and problem solving of the second type as encompassing decisions based primarily on legal questions. This distinction is less helpful in complex decisions that mix factual and legal uncertainties.

¹⁹ Hastie, *supra* n. 17, at 657.

compares the pluses and minuses of each option in advance.²⁰ When making such decisions, the rational decisionmaker is assumed to evaluate each alternative course of action or choice by balancing its ability to meet his or her desired goals with the probabilities that those goals would occur. This decisionmaking framework, the rational-choice model, has been found to be incomplete, misleading, or wrong.²¹

But this does not mean that human decisionmaking is without reason. Even when decisionmakers appear biased or irrational, they often are using the abilities and resources most readily available to them to solve some problem or achieve some goal. As already indicated, the broad findings from experiments in cognitive psychology indicate that judges are just as prone to making mistakes as other individuals when they are making *judgments*. They apply biases in the same way, and their experience and expertise adds little to the accuracy of their judgments. On the other hand, in deciding among two or more alternatives or solving other kinds of unprecedented problems, judges may more accurately be viewed as experts in at least some circumstances.

This section introduces two schools of thought about decisionmaking: the heuristics-and-biases approach (Daniel Kahneman) and the intuitive problem-solving approach (Gary Klein). The first views intuition as more often leading to mistakes and overconfidence, while the second views intuition as essential to recognizing alternatives for solving a problem.

A. Heuristics and biases: intuition is an untrustworthy shortcut

For convenience, heuristics-and-biases researchers divide our thinking and reasoning processes into intuitive and analytical categories: System 1 (thinking “fast” or intuitively) and System 2 (thinking “slow” or analytically). In a typical shorthand description, System 1 “is rapid, intuitive, emotional, and prone to bias,” while System 2 “is more deliberate, more reflective, more dispassionate, and (it is said) more accurate.”²² Although the so-called “dual-process” model of information gathering and

²⁰ *Id.* at 657–58.

²¹ *Id.*

²² Dan Kahan, *What Is Motivated Reasoning and How Does It Work*, *Science and Religion Today*, <http://www.scienceandreligiontoday.com/2011/05/04/what-is-motivated-reasoning-and-how-does-it-work/> (May 4, 2011). Judge Posner vividly describes the two types of thinking:

The first is the domain of hunches, snap judgments, emotional reactions, and first impressions—in short, instant responses to sensations. Obviously there is a cognitive process involved But there is no conscious thought, because there is no time for it. The second type of thinking is the domain of logic, deliberation, reasoned discussion, and scientific method. Here thinking is conscious. . . . Articulate thinking is the model of rationality, while intuitive thinking is often seen as primitive, “emotional” in a derogatory sense

Richard A. Posner, *Blinkered*, *The New Republic* 27 (Jan. 24, 2005) (reviewing Malcolm Gladwell, *Blink: The Power of Thinking Without Thinking* (2004)).

information processing has been around for some time,²³ much of the recent visibility for System 1 and System 2 thinking can be attributed to Daniel Kahneman and his book, *Thinking, Fast and Slow*.²⁴

Kahneman's research began as an attempt to find out how and why intuition often leads us astray, and he has spent much of his career conducting experiments in which intuitive judgments are almost always found to be inaccurate. As a young lieutenant in the Israeli Defense Forces in 1955, Kahneman was asked to set up an interview system for recruits.²⁵ Before he set up a new system, a personal interview had served as the basis for an assessment of fitness for combat and for matching the personality of the recruit to the appropriate branch of the armed forces. Evaluations of the interview system found it was "almost useless" in predicting how recruits would perform in service. Kahneman concluded that the system failed because it allowed the interviewers to ask interesting questions when they instead should have been evaluating relevant personality traits based on past performance.²⁶

Among the best known of Kahneman's experiments is the "Linda problem," designed to show how predispositions affect judgment and trump logic (or at least overcome people's knowledge of statistical probabilities).²⁷ In the Linda problem, Kahneman posits that "Linda is thirty-one years old, single, outspoken, and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations."²⁸ The researchers ask a combination of questions, concluding with:

Which alternative is more probable?

Linda is a bank teller.

Linda is a bank teller and is active in the feminist movement.

A majority of those answering usually choose the second option, an answer contrary to the logic that tells you that the group of bank tellers must be larger than the group of people who are not only bank tellers but

23 The dual-process model described information as being processed along a continuum from (at the heuristic end) effortless perception of information using rules of thumb or stereotypes to (at the systematic end) careful study of the information.

24 Kahneman, *supra* n. 11.

25 *Id.* at 229–32.

26 *Id.* Kahneman was influenced in this early study by Paul Meehl's 1954 monograph that compared the accuracy of forecasts made by people with those made by statistical models. Paul E. Meehl, *Clinical vs. Statistical Prediction: A Theoretical Analysis and a Review of the Evidence* (1954).

27 Kahneman, *supra* n. 11, at 156–59. These experiments were conducted with Kahneman's long-time collaborator, Amos Tversky. *See id.* at 4–10.

28 *Id.* at 156.

also feminists. Kahneman explains the wrong answers as reflecting the respondents' judgments of "representativeness"; that is, the most coherent and plausible explanation is that a person with those personality attributes most likely would be a feminist, and so if she was a bank teller, she had to be a feminist too.²⁹

Though much of the book highlights the inaccurate judgments that result from fast (or intuitive) thinking, fast thinking often is not only good, but also essential to our lives. Knowing that the green light means *go* without having to think about it means that we can safely walk across the street within the seconds allowed by the timed traffic signal. System 1 routinely guides our thoughts and actions, and we continue to follow System 1 because it often serves us well. On the other hand, System 1 is the source of "implicit bias," the result of unconscious mental processes that affect perception, impressions, and judgment because of implicit memories, perceptions, attitudes, and stereotypes.³⁰

One of the characteristics that distinguishes System 1 from its counterpart is its relationship to affect or emotion: it "represents events in the form of concrete exemplars and schemas inductively derived from emotionally significant past experiences." Whether System 1 or System 2 has the greater influence in a particular circumstance depends both on the characteristics of the situation and the emotions affected: when the situations are the same, "the greater the emotional involvement, the greater the shift in the balance of influence from the rational to the experiential system."³¹ Not only does System 1's "reliance on affect and emotion [make it] a quicker, easier, and more efficient way to navigate in a complex, uncertain, and sometimes dangerous environment," failing to listen to System 1 can lead decisions astray when they include an emotional component.³²

On the other hand, slow thinking may be essential for complex decisions. From the perspective of this school of thought, application of System 2 thinking almost always improves decisionmaking.³³ The quick impressions created by System 1 will control our judgments and decisions unless they are modified or overridden by the deliberate operations of System 2.

29 *Id.* at 158–59.

30 John F. Irwin & Daniel L. Real, *Unconscious Influences on Judicial Decision-Making: The Illusion of Objectivity*, 42 *McGeorge L. Rev.* 1, 2 (2010).

31 Veronika Denes-Raj & Seymour Epstein, *Conflict Between Intuitive and Rational Processing: When People Behave Against Their Better Judgment*, 66 *J. of Personality & Soc. Psychol.* 819, 819 (1994).

32 Paul Slovic, *Affect, Reason, and Mere Hunches*, 4 *J. L. Econ. & Policy* 192, 201–04 (2007).

33 Because this article focuses on the less-appreciated benefits of System 1, I will not detail the many virtues of System 2 thinking.

B. Intuitive problem solving: intuition unlocks solutions to problems

The second school of thought³⁴ focuses on successful problem solving prompted by expert intuition. While Kahneman has “spent much of his career running experiments in which intuitive judgment was commonly found to be flawed,” scientist and author Gary Klein has spent most of his career studying expert decisionmaking and “thinking about ways to promote reliance on expert intuition.”³⁵ The kind of “intuition” Klein advocates is not the so-called *gut reaction* that leads to instant knowledge that someone is telling the truth or lying, but the flash of recognition that comes from a cue alerting the problem solver to an analogous pattern, allowing the expert to draw on past or known experiences to come up with parallel patterns or paths. Klein’s field studies began because he was impressed with the ability of firefighting commanders to make quick and accurate decisions under conditions of stress and uncertainty. Gathering information by extracting stories from a range of experts, Klein found that in real-life complex situations, experts rely on expert intuition to solve problems. It is not so much that their intuitions are correct, but that intuition is how they identify workable options to test.³⁶

A recent prototype of this kind of expert intuition is well known:

On January 15, 2009, at 3:25 p.m., US Airways Flight 1529, an Airbus 320, took off from LaGuardia Airport in New York on its way to Charlotte, North Carolina. Two minutes after the takeoff, the airplane hit a flock of Canada geese and lost thrust in both of its engines. The captain, Chesley B. “Sully” Sullenberger III, and the first officer, Jeffrey Skiles, safely landed the airplane in the Hudson River at 3:31 p.m. All 150 passengers plus the five crew members were rescued.³⁷

By the time of this apparently unprecedented landing,³⁸ Captain Sullenberger had been flying airplanes for almost 40 years. Many attributed the successful landing not only to his years of experience, but also to the breadth and depth of his knowledge of similar situations. He

³⁴ See Klein, *Sources of Power*, *supra* n. 2, at 1–2; Klein, *Streetlights and Shadows*, *supra* n. 11.

³⁵ Kahneman & Klein, *supra* n. 1, at 515. In a 1992 article, cognitive psychologist James Shanteau pointed out that while “judgment and decision research has shown that experts make flawed decisions due, in part, to the biasing effects of judgmental heuristics,” cognitive science research “views experts as competent and different from novices in nearly every aspect of cognitive functioning.” James Shanteau, *Competence in Experts: The Role of Task Characteristics*, 53 *Organizational Behavior & Human Decision Processes* 252, 252 (1992).

³⁶ Kahneman & Klein, *supra* n. 1, at 516.

³⁷ Klein, *Streetlights and Shadows*, *supra* n. 11, at 91–92.

³⁸ See *Welcome Aboard; Fear of Flying*, *The Economist* (Sept. 7, 2006) (available at www.economist.com/node/7884654) (“In the event of a landing on water, an unprecedented miracle will have occurred, because in the history of aviation the number of wide-bodied aircraft that have made successful landings on water is zero.”).

had been an Air Force fighter pilot and a glider pilot as well as a commercial airline pilot; he had participated in many airline crash investigations. In addition to studying the causes of airplane crashes, Sullenberger was involved in developing and teaching techniques for managing airplane emergencies.³⁹

Sullenberger's decisionmaking followed the process described in what Klein calls the recognition-primed, naturalistic, or intuitive decision-making model. He first considered the option of returning to LaGuardia, but quickly realized that the airplane would not make it that far; he then considered the option of finding another airport, but almost immediately decided that was too far as well. So he settled on the third option, landing in the Hudson River. Sullenberger

considered three courses of action, one at a time, starting with the most typical and ending with the most desperate. . . . [But] [h]e didn't set up the kind of decision matrix [we still think of as typical], . . . listing these three options and contrasting them on common evaluation dimensions such as shortest distance, best runways, least inconvenience to passengers who might need to re-book their flights. Sullenberger was satisficing, looking for the first option that would work.⁴⁰

The intuitive decisionmaking model blends two processes: (1) how decisionmakers "size up" a situation and thus recognize a possibly workable course of action and (2) how they evaluate the course of action by simulating or imagining its results.⁴¹ So, when a firefighting commander recognizes that the crew is facing a particular kind of fire, the commander also understands or recognizes (1) "what types of goals make sense"; (2) "which cues are important" (so the decisionmaker is not overloaded with irrelevant information); (3) "what to expect next"; (4) what are "the typical ways of responding"; and (5) which course of action is most likely to succeed.⁴²

³⁹ Stephany Schings & Clif Boutelle, *The Difference Between a Miracle and a Tragedy: Pilot's I-O Training May Have Helped Lead to Safe Landing on the Hudson*, Society for Industrial and Organizational Psychology, Inc. (available at <http://www.siop.org/Media/News/crash.aspx>) (accessed August 9, 2012).

⁴⁰ Klein, *Streetlights and Shadows*, *supra* n. 11, at 91–92. "Satisficing," a combination of "satisfy" and "suffice," means making a "good enough" choice. See Herbert A. Simon, *A Behavioral Model of Rational Choice*, 69 Q. J. Econ. 99 (1955). The National Transportation Safety Board concluded that one of the factors contributing to the survivability of the accident was the "decision-making of the flight crewmembers . . . during the accident sequence." National Transportation Safety Board, *Loss of Thrust in Both Engines After Encountering a Flock of Birds and Subsequent Ditching on the Hudson River*, US Airways Flight 1549, Airbus A320-214, N106US, Weehawken, New Jersey, Jan. 15, 2009, Aircraft Accident Report, NTSB/AAR-10-03 (2010) (available at <http://www.nts.gov/doclib/reports/2010/aar1003.pdf>).

⁴¹ Klein, *Sources of Power*, *supra* n. 2, at 24.

⁴² *Id.*

Klein points out that this process differs from the rational-choice model of decisionmaking (the decisionmaker lines up the pluses and minuses of each option and decides by weighing them) in several ways: first, the decisionmaker focuses on assessing a situation and finding familiar features, rather than on comparing options. The decisionmaker quickly evaluates possible courses of action by imagining how they would be carried out rather than going through a more formal comparison. Finally, the decisionmaker looks for the first workable option, rather than the best. Because the decisionmaker often finds the first option to be workable, the decisionmaker usually generates and evaluates alternatives one at a time. By imagining the first workable option being carried out, the expert can spot and fix weaknesses.⁴³

Although two schools of thought remain, Kahneman and Klein found in a collaborative project that they agreed about some basics of the thinking process, including the ways in which expert intuition may be developed.⁴⁴ For the purposes of this article, more important than their agreement on the basics is their continuing emphasis on the distinctive roles played by System 1 and System 2 thinking. In the Klein model of intuitive problem solving, experts engage in both an intuitive process “that brings promising solutions to mind and a deliberate activity in which the . . . solution is mentally simulated.”⁴⁵ In the Kahneman model, System 2 is involved in careful reasoning and decisionmaking as well as in continuous monitoring. “When there are cues that an intuitive judgment could be wrong, System 2 can impose a different strategy.”⁴⁶ Intuition opens minds for further thinking in the Klein approach, but intuition exists to be corrected in the Kahneman model.

II. Schools of Thought about Judicial Decisionmaking

The conclusion that judges are like the rest of us⁴⁷ seems to explain the results of experiments in which judges are asked to make *judgments* about credibility, risk, or probability. But judges may be different, and more expert in their use of intuition, when they are asked to *solve*

⁴³ *Id.* at 30.

⁴⁴ Kahneman & Klein, *supra* n. 1, at 515.

⁴⁵ *Id.* at 519.

⁴⁶ *Id.*

⁴⁷ For a discussion of whether there is something unique about judges' decisionmaking, see Frederick Schauer, *Is There a Psychology of Judging?*, in *The Psychology of Judicial Decision Making* 103 (David Klein & Gregory Mitchell eds.,

2010). “[T]he existing research tends to support the view that a judge’s attributes as a human being reveal more about the psychology of judging than does anything a judge might have learned in law school, acquired in the practice of law, or internalized by virtue of serving in the judicial role.” *Id.* at 103–04; see also Dan Simon, *In Praise of Pedantic Eclecticism: Pitfalls and Opportunities in the Psychology of Judging*, in *The Psychology of Judicial Decision Making* 131 (responding to Schauer).

problems in the courtroom. Whenever decisionmakers make complex decisions under conditions of uncertainty, it seems likely that both intuitive (System 1) and analytical (System 2) thinking will come into play, whether in interaction, in tandem, in sequence, or in interference. Such meshing, melding, or sequencing of fast and slow thinking finds support in studies of legal reasoning as well as in more-general decisionmaking research.⁴⁸

A. Legal decisionmaking as “sensemaking”⁴⁹

If a single theme can be drawn from current research and theories of how judges (and juries) make decisions, whether those decisions are based upon trial evidence or appellate records, it is that the decisionmaker engages in “sensemaking” or in constructing plausible stories or frameworks that make sense of what they have been told.⁵⁰ These theories describe an unconscious process in which the decisionmaker’s implicit knowledge and background experience intuitively affect his or her perceptions and impressions, and those in turn add up to an increasingly coherent and cohesive whole.

For example, the psychological model of coherence-based reasoning⁵¹ describes judicial decisionmaking as beginning in conflict but ending in closure. The decisionmaker’s understanding moves through a reasoning process that “genuinely manifests a transformation of the way the dispute is represented in the judge’s mind. During the course of deciding a hard case, the judge’s mental representation of the dispute evolves naturally towards a state of coherence.”⁵² At the beginning of the process, some

48 Studies of the influence of politics and ideology on judicial behavior are beyond the scope of this article. For a helpful discussion of how such studies might interact with psychological inquiry, see Lawrence Baum, *Motivation and Judicial Behavior: Expanding the Scope of Inquiry*, in *The Psychology of Judicial Decision Making*, *supra* n. 47, at 3–25. For a discussion of the studies themselves, see Brian Z. Tamanaha, *Beyond the Formalist-Realist Divide: The Role of Politics in Judging* 111–55 (2010).

49 The concept of “sensemaking,” which appears similar to the theories reported in this section, has been used in the organization sciences. See e.g. Karl E. Weick, *Making Sense of the Organization* (2001); Karl E. Weick, *Sensemaking in Organizations* (1995). Ryan Malphurs applied the concept to Supreme Court oral arguments in Ryan Malphurs, *Making Sense of “Bong Hits 4 Jesus”: A Study of Rhetorical Discursive Bias in Morse v. Fredrick*, 7 J. ALWD 247 (2010).

50 See e.g. Nancy Pennington & Reid Hastie, *A Cognitive Theory of Juror Decision Making: The Story Model*, 13 *Cardozo L. Rev.* 519 (1991) (suggesting that story construction is a central cognitive process when jurors are making decisions) [hereinafter Pennington & Hastie, *Cognitive Theory*]; Nancy Pennington & Reid Hastie, *Explaining the Evidence: Tests of the Story Model for Juror Decision Making*, 62 J. of Personality & Soc. Psych. 189 (1992) (reporting on experiments that support the story model); see also Kenworthy Bilz, *We Don’t Want to Hear It: Psychology, Literature, and the Narrative Model of Judging*, 2010 U. Ill. L. Rev. 429 (2010) (arguing that the narrative model should have inclusionary and exclusionary aspects).

51 Dan Simon, *A Third View of the Black Box: Cognitive Coherence in Legal Decision Making*, 71 U. Chi. L. Rev. 511 (2004).

52 Dan Simon, *A Psychological Model of Judicial Decision Making*, 30 *Rutgers L.J.* 1, 20 (1998); see also Dan Simon, *In Praise of Pedantic Eclecticism*, *supra* n. 47, at 138–43; Dan Simon, *Freedom and Constraint in Adjudication: A Look through the Lens of Cognitive Psychology*, 67 *Brook. L. Rev.* 1097 (2002) (suggesting that judicial coherence results from basic cognitive functions as well as from elements specific to the judicial role, including the need to make binary judgments and to decide).

arguments seem to support one decision and other arguments support another outcome. While deciding the case, the judge's mental model of the dispute moves toward coherence; the facts, the rules, and the propositions involved are cognitively changed, that is, they undergo *coherence shifts*, resulting in a tightly consistent justification for the final result.⁵³ In other words, decisionmakers are actively engaged in constructing mental models of the situation, and their perceptions of the evidence change, unconsciously, as they move through the situation. The reasoning process moves in both directions:

People . . . do not only infer a decision from the evidence, but also reason backwards, from options to the evidence. . . Information supporting the favored interpretation is highlighted whereas the perceived importance or reliability of information that speaks against this interpretation is reduced.⁵⁴

The research and theory gathered under the term “cultural cognition” also support the overall perspective of judicial sensemaking sparked by intuition or recognition of parallel patterns and paths.⁵⁵ Cultural-cognition theory suggests that rather than providing a self-conscious motive for making decisions, the decisionmaker's values are subconsciously influencing cognition during the reasoning process. The decisionmaker's cultural outlook is not the source of his or her judgments, but unconsciously influences how the decisionmaker perceives the facts.⁵⁶

“Motivated cognition,” a related theory, refers to “the unconscious tendency of individuals to fit their processing of information to conclusions that suit some end or goal.”⁵⁷ In the classic experiment,

53 As Simon describes the process,

A mental model of a decision task is deemed “coherent” when the decision-maker perceives the chosen alternative to be supported by strong considerations while the considerations that support the rejected alternative are weak. Such is the case, for example, when the prosecution's eyewitness is reliable, the forensic evidence is compelling, and the defendant has a strong motive and a weak alibi. A mental model is considered “incoherent” when the decision-maker perceives the considerations as providing equivocal support for both alternatives.

Simon, *Black Box*, *supra* n. 51, at 516.

54 Andreas Glöckner & Christoph Engel, *Can We Trust Intuitive Jurors? Standards of Proof and the Probative Value of Evidence in Coherence Based Reasoning 2*, Preprints of the Max Planck Institute for Research on Collective Goods Bonn 2008/36

(Oct. 2008, rev'd Mar. 2010) (available at http://www.coll.mpg.de/pdf_dat/2008_36online.pdf).

55 For a general description, see The Cultural Cognition Project at Yale Law School, <http://www.culturalcognition.net>; Dan M. Kahan & Donald Braman, *Cultural Cognition and Public Policy*, 24 *Yale L. & Policy Rev.* 149 (2006); see also Dan M. Kahan, *Culture, Cognition, and Consent: Who Perceives What, and Why*, in *Acquaintance-Rape Cases*, 158 *U. Pa. L. Rev.* 729 (2010); Paul M. Secunda, *Cultural Cognition at Work*, 38 *Fla. St. U. L. Rev.* 107 (2010) (applying cultural-cognition theory to labor and employment decisions).

56 Kahan & Braman, *supra* n. 55, at 149–50.

57 Kahan, *What is Motivated Reasoning*, *supra* n. 22.

students from two colleges reviewed a film of a football game; students from each school were more likely to view a referee's call as correct when it went in favor of their school. Researchers attributed what the students "saw" to their emotional connection to their schools. Like coherence-based reasoning and cultural cognition, motivated cognition is unconscious: the decisionmaker does not have a conscious reason for perceiving evidence in a particular way. Instead, the processor's goal "motivates the cognition in the sense that it directs mental operations—in this case, sensory perceptions; in others, assessments of the weight and credibility of empirical evidence, or performance of mathematical or logical computation—that we expect to function independently of that goal or end."⁵⁸

Juror research provides a compelling description as well as further support for the "story model" of decisionmaking, one that is triggered by an early intuitive recognition of an appropriate pattern or path.⁵⁹ In the story model, jurors impose a narrative framework on the information they receive during trial. In addition to the evidence presented, jurors use their knowledge of similar situations as well as expectations arising from how they generally view the issues raised by the case.⁶⁰ The evidence is incorporated into several plausible accounts or stories of what happened. The story framework helps jurors understand the evidence and reach a tentative decision. After hearing the possible verdicts in the case, the juror matches the story with the most fitting verdict category.⁶¹

B. The Role of intuition in judging

Although others may distrust judicial intuition, judges acknowledge and value its role. Early in the 20th century, Judge Joseph Hutcheson famously described his decisionmaking process:

[A]fter canvassing all the available material at my command, and duly cogitating upon it, [I] give my imagination play, and brooding over the cause, wait for the feeling, the hunch—that intuitive flash of under-

58 *Id.*

59 Pennington & Hastie, *Cognitive Theory*, *supra* n. 50, at 520–33. Another assessment concluded that "jurors' thinking can be accounted for both by the story model and dual-process model." Ryan J. Winter & Edith Greene, *Juror Decision-Making*, in *Handbook of Applied Cognition* 739, 757 (2d ed. 2007).

60 Pennington & Hastie, *Cognitive Theory*, *supra* n. 50, at 521–29.

61 *Id.* at 529–33. A key distinction of the story model is the finding that jurors construct an intermediary structure that becomes the basis for the decision. *Id.*

62 Joseph C. Hutcheson, Jr., *The Judgment Intuitive: The Function of the "Hunch" in Judicial Decision*, 14 *Cornell L. Q.* 274, 278 (1929).

standing which makes the jump-spark connection between question and decision⁶²

Richard Weisberg characterized Justice Benjamin Cardozo's writing about the judicial process as illustrating his recognition that "[j]udgment requires refined intuition as well as cold logic. It requires an instinctive awareness of the correct outcome on the facts, an outcome that is 'correct' not solely from the judge's personal perspective."⁶³ For Justice Cardozo, "flashes of insight" came from "experience usually extensive and often profound."⁶⁴ As Dan Simon described it, Justice Cardozo's view was that "[m]aking decisions is akin to groping in the dark, an exercise of testing and retesting hypotheses, a process informed by 'a hint, an illustration, a suggestion.'"⁶⁵

Justice William Brennan gave Justice Cardozo credit for "having awakened America to the human reality of the judicial process."

From him we learned that judging could not properly be characterized as simply the application of pure reason to legal problems, nor, at the other extreme, as the application of the personal will or passion of the judge. Cardozo drew our attention to the interplay of forces, rational and emotional, conscious and unconscious, by which no judge could remain unaffected.⁶⁶

In *How Judges Think*, Judge Richard Posner marshals support for his view that most judges are pragmatists⁶⁷ (motivated by consequences) by quoting, among others, Justice Anthony Kennedy:

You know, all of us have an instinctive judgment that we make. You meet a person, you say, "I trust this person. I don't trust this person. I find her interesting. I don't find him interesting." Whatever. You make these quick judgments. That's the way you get through life. And judges do the same thing. And I suppose there's nothing wrong with that if it's just a beginning point.⁶⁸

63 Richard H. Weisberg, *Law, Literature and Cardozo's Judicial Poetics*, 1 *Cardozo L. Rev.* 283, 307 (1979).

64 *Id.* at 308 (quoting Address by Benjamin N. Cardozo, N.Y. St. Bar Ass'n. (Jan. 22, 1932), reprinted in *Selected Writings of Benjamin Nathan Cardozo* 27 n. 4 (3d ed. 1947) [hereinafter *Selected Writings*]).

65 Dan Simon, *The Double-Consciousness of Judging: The Problematic Legacy of Cardozo*, 79 *Or. L. Rev.* 101, 111–12 (2000) (quoting Benjamin N. Cardozo, *The Paradoxes of Legal Science*, in *Selected Writings*, *supra* n. 64, at 253; Benjamin N. Cardozo, *The Nature of the Judicial Process*, in *Selected Writings*, *supra* n. 64, at 175–76, 183; and Benjamin N. Cardozo, *The Growth of the Law*, in *Selected Writings*, *supra* n. 64, at 214).

66 William J. Brennan Jr., *Reason, Passion, and "The Progress of the Law"*, 10 *Cardozo L. Rev.* 3 (1988) (address delivered at the Ass'n of the B. of the City of N.Y. on Sept. 17, 1987).

67 Richard A. Posner, *How Judges Think* 256–63 (2008).

68 Anthony Kennedy Interview, *Academy of Achievement: A Museum of Living History* (Oct. 22, 2006) (quoted in Posner, *How Judges Think*, *supra* n. 67, at 257).

At the trial-court level as well, judges acknowledge that they apply their intuition, recognizing familiar patterns based on experience. For example, in *United States v. Shonubi*,⁶⁹ the sentencing judge was told by a higher court to reestimate the amount of cocaine smuggled into the country by the defendant and to resentence him.⁷⁰ After much expert testimony and time, the judge estimated a somewhat smaller amount, but made no change in the sentence.⁷¹ In a 61-page opinion describing his decisionmaking process, the judge wrote that “[i]t should come as no surprise that in addition to rational analysis, the forensic factfinder depends upon assumptions and methods of thinking that may introduce biases and errors.”⁷² Among these, the judge said, were inferences based on prior information and training; “[a] trial judge’s ‘hunch’ is generally based on the evidence and experience, albeit with the inferential chain unstated.”⁷³

Judicial intuition is viewed less favorably in one of the best-known models of judicial decisionmaking, the intuition-override model. This model is based on the blend of intuitive and analytical thinking suggested by the heuristics-and-biases researchers.⁷⁴ Rather than view intuition as key to discovery or recognition of potential similarities, an essential step toward testing of workable options for solving problems, the intuition-override model assumes that judges usually reach a conclusion by applying their intuition, but holds out hope that judges will sometimes be able to override that intuitive judgment with slower, more deliberative thinking.⁷⁵ As Kahneman and his coauthor had described the process earlier, System 1 quickly proposes intuitive answers as problems come up, and System 2 monitors their quality so that it may enforce, correct, or override the intuitive response.⁷⁶

Backing up the intuition-override model with the results of their research involving trial-court judges, Professors Guthrie, Wistrich, and Rachlinski concluded that not only when confronted with ordinary, nonlegal tasks, but also when faced with some specific categories of problems they are likely to encounter on the bench, judges are inclined to make inaccurate intuitive judgments, and they are vulnerable to distractors like absurd settlement demands and vivid facts.⁷⁷ Specifically,

69 895 F. Supp. 460 (E.D.N.Y. 1995).

70 *Id.* at 467–68.

71 *Id.* at 464.

72 *Id.* at 464–65.

73 *Id.* at 482–83.

74 See Daniel Kahneman & Shane Frederick, *A Model of Heuristic Judgment*, in *Heuristics of Intuitive Judgment* (T. Gilovich, D. Griffin & D. Kahneman eds., 2002).

75 Guthrie et al., *Blinking on the Bench*, *supra* n. 13, at 27–29.

76 Kahneman & Frederick, *supra* n. 74.

77 Guthrie et al., *Blinking on the Bench*, *supra* n. 13, at 27–28.

they found that “judges who employed intuitive thinking allowed an irrelevant settlement demand to influence their damage awards, allowed an impressionistic assessment of statistical evidence to shape their liability determinations, and allowed outcome information to influence their assessments of the ex ante predictability of appellate courts.”⁷⁸ Among the negative effects of intuition, they also noted that it might be the path “by which undesirable influences, like the race, gender, or attractiveness of parties” affected judicial choices.⁷⁹ Finally, the authors asserted that judicial intuition would remain unreliable because “judges are unlikely to obtain accurate and reliable feedback on most of the judgments they make.”⁸⁰

My argument here is not that the findings reported in *Blinking on the Bench* are incorrect. Instead, it is that the results of these experiments add little to the discussion of the use of intuition in judicial problem solving; for the most part, the reported experiments tested judgments based on perceptions, rather than the problem-solving process.⁸¹ As a result, though they provide helpful reminders about the shortcomings of intuition in making predictions about the future or assessments of probability, the findings shed little light on the role of intuition in problem solving.

C. Viewing judges as experts in problem solving

Firefighting commanders and jet pilots make split-second decisions in life-threatening circumstances. Split-second timing is not typical of the courtroom, but both trial and appellate judges make high-stakes choices with incomplete, uncertain, or conflicting information. The problems these judges face seem at first glance analogous to the problems confronting the experts in Klein’s studies: the problems are often poorly defined; they require the judge to use “domain-specific” knowledge (here, specialized legal knowledge); they carry real, and serious, consequences; and the judges are required to decide under significant “real-time” pressures and without full information.⁸²

To determine the kinds of problems that might be subject to intuitive expertise by judges, let’s start with what Kahneman and Klein agree upon as a “coherent view of expert intuition.”⁸³ First, they acknowledge that “intuitive judgments can arise from genuine skill . . . but that they can also arise from inappropriate application of . . . heuristic [or shortcut]

78 *Id.* at 31.

79 *Id.*

80 *Id.* at 32.

81 The differences are discussed in section III, *infra*.

82 Klein, *Sources of Power*, *supra* n. 2, at 4.

83 Kahneman & Klein, *supra* n. 1, at 524.

processes.” They agree as well that a mark of intuition in both skilled and unskilled judges is that they “are often unaware of the cues that guide them.” Not surprisingly then, confidence is an unreliable indicator of the validity of intuitive judgments and choices. But if a decisionmaking “environment provides valid cues and good feedback,” they also agree that “skill and expert intuition will eventually develop in individuals of sufficient talent.” And even some uncertain environments provide valid cues; for example, making the best moves in situations like poker and warfare has been found to reliably increase success.⁸⁴

Although the heuristics-and-biases branch of cognitive research has shown that even experts are led astray by intuition, other researchers have concluded that many “experts within their domains are skilled, competent, and think in qualitatively different ways than novices.”⁸⁵ Some of the earliest research in the field of expert intuition studied how master chess players decide which pieces to move and where to move them on a chessboard.⁸⁶ The researchers found that master players were able to size up a complex position and quickly, or intuitively, identify the best moves. These expert chess players had 50,000 to 100,000 recognizable patterns in their heads, allowing them to intuitively pluck the better responsive move from their repertoire.⁸⁷

The chess-master studies prompted the definition of intuition that Klein later adopted:

The situation has provided a cue; this cue has given the expert access to information stored in memory, and the information provides the answer. Intuition is nothing more and nothing less than recognition [of a parallel pattern or path stored in memory].⁸⁸

Intuitive judgments or choices “come to mind on their own, without explicit awareness of the evoking cues and . . . without an explicit evaluation of the validity of these cues.”⁸⁹ As a result, all intuitive judgments appear to belong to System 1: “They are automatic, arise effortlessly, and often come to mind without immediate justification.”⁹⁰

But intuitive judgments are of two different classes. Some intuitive choices “arise from experience and manifest skill,”⁹¹ while less-accurate intuitions, although they “also arise from the operations of memory,” are

84 *Id.*

85 Shanteau, *Competence in Experts*, *supra* n. 35, at 5.

86 Kahneman & Klein, *supra* n. 1, at 515–16.

87 *Id.*

88 Simon, *supra* n. 12, at 155.

89 Kahneman & Klein, *supra* n. 1, at 519.

90 *Id.*

91 *Id.*

92 *Id.* at 521.

based on the shortcuts that have become known as heuristics and biases.⁹² Intuitive expertise develops within a particular domain or area of expertise; it develops in stages and is limited in scope. Whether intuitive expertise develops depends in large part on the situation in which experts work, that is, their performance depends on the characteristics of the tasks they are assigned.⁹³

Kahneman and Klein concluded that expert intuition is more reliable (1) when the expert's prior experience occurs within an environment that provides valid, or regular, cues and (2) when the expert has many opportunities for practice and receives prompt, accurate, and consistent feedback.⁹⁴ For example, when a driver applies the brakes on a car, the driver receives immediate and unambiguous feedback. With enough experience, the driver's intuition about using the brakes becomes more reliable. Similarly, anesthesiologists are thought to be better able to develop expert intuition because the effects of their mistakes are quickly evident (their patients wake up in the middle of the operation or don't wake up at all) while radiologists may not have the same intuitive reliability because their mistakes (failing to detect an abnormality on an x-ray) take a while to show up.⁹⁵

Kahneman and Klein's conclusions indicate that judges' expert intuition will be better when they make decisions in an environment that is sufficiently regular, in the sense of having predictable outcomes, and when the judge has had a chance to learn its regularities.⁹⁶ In those circumstances, the judge's intuition may allow the judge to quickly size up the situation as resembling a recognizable pattern or path and to generate quick and accurate options. In environments that are less certain or where the judge receives less or less-reliable feedback, judicial intuition is more likely to consist of cognitive shortcuts that result in biased or misleading judgments.

As already noted, judges are not much different from the rest of us when it comes to making *judgments* of the first kind. To give just one example, researchers have flatly concluded that "[d]ecision makers are not capable of predicting behavior, given the information that is available to them."⁹⁷ No one appears to be very good at estimating damages, assessing statistical probabilities, predicting the future, or judging credibility, casting

93 James Shanteau, *The Psychology of Experts: An Alternative View*, in *Expertise and Decision Support* 11, 13–14 (G. Wright & F. Bolger eds., 1992). For example, expertise is thought to develop more readily when the expert is making decisions about objects or things rather than about human behavior. *Id.*

94 Kahneman & Klein, *supra* n. 1, at 520.

95 Daniel Kahneman, *Don't Blink! The Hazards of Confidence*, N.Y. Times Mag. (Oct. 23, 2011) (available at <http://www.nytimes.com/2011/10/23/magazine/dont-blink-the-hazards-of-confidence.html>).

96 Kahneman & Klein, *supra* n. 1, at 520.

97 Ebbesen & Konecni, *supra* n. 16, at 192.

doubt on our determinations of what custody arrangement will meet the best interests of the child over time and whether a defendant will engage in future criminal behavior. Judges, like most of us, find it difficult to disregard relevant evidence, or to avoid shortcuts, predispositions, stereotypes, and biases.⁹⁸ Judges are not experts at finding facts or weighing evidence.⁹⁹ That judges have not developed expert intuition when it comes to these kinds of judgments makes sense in terms of Kahneman and Klein's guidance: judges receive almost no meaningful feedback on whether their prior judgments in similar situations have been right or wrong.¹⁰⁰

Still, there is reason to think judges are able to develop more-expert and more-reliable intuition when they make choices in the second category, problem solving. Expert intuition is more likely to develop when certain conditions converge: the environment provides outcomes that are more predictable and the decisionmaker receives feedback that is more accurate and more consistent. So judges are more likely to become more reliably intuitive when they are deciding issues that they decide frequently in situations where they receive relatively prompt feedback (from lawyers, parties, their clerks and colleagues, the community, the media, and eventually from appellate courts) even though the feedback may not be as immediate or accurate as is ideal.

Research to date has not answered this question of whether judges actually do develop reliable intuitive expertise in solving problems. The existing research focuses on "the fact-finding and verdict-rendering tasks that judges share with jurors" and "tends to slight those aspects of judging—most obviously selecting the relevant law, interpreting the law, and sometimes making law—that are more or less the exclusive province

98 Judges' decisionmaking processes also appear to be affected by workloads and time pressures. See e.g. Bert I. Huang, *Lightened Scrutiny*, 124 Harv. L. Rev. 1109 (2011); Brian Sheppard, *Judging Under Pressure: A Behavioral Examination of the Relationship Between Legal Decisionmaking and Time*, 39 Fla. St. U. L. Rev. 931 (2012).

99 Barbara A. Spellman, *Judges, Expertise, and Analogy*, in *The Psychology of Judicial Decision Making*, supra n. 47, at 154 (citing P.N. Robinson & Barbara A. Spellman, *Sentencing Decisions: Matching the Decisionmaker to the Decision Nature*, 105 Colum. L. Rev. 1124 (2005); Barbara A. Spellman, *On the Supposed Expertise of Judges in Evaluating Evidence*, 156 U. Pa. L. Rev. PENNumbra 1 (2007)).

100 As noted earlier, the authors of *Blinking on the Bench* conclude that judges are unlikely to obtain the right kind of feedback on their judgments. Guthrie et al., *Blinking on the Bench*, supra n. 13, at 32.

A 1992 review of the then-existing studies concluded that court judges were among the kinds of experts who appeared to be less able to develop expertise, along with stockbrokers and clinical psychologists. Shanteau, supra n. 35, at 256–58. In a later article, Shanteau and a coauthor wrote that there is "considerable empirical support for the view that experts are competent in certain tasks specific to their domain" and "there are reasons to believe this view holds with respect to court judges." James Shanteau & Len Dalglish, *Expertise of Court Judges*, in *The Psychology of Judicial Decision Making*, supra n. 47, at 269. Shanteau and Dalglish suggested that previous judgment and decision researchers had "unknowingly adopted the experts-should-be perfect view of expertise," leading to the conclusion that experts are not as competent as might otherwise be seen. *Id.* at 275. They pointed out that "the situations faced by experts are different and more complex than the simplified situations considered by most analysts." *Id.*

of the judge.”¹⁰¹ Very little research about expert reasoning discusses whether judges reason better or differently from others.¹⁰²

One area in which judges may have developed reliable intuitive expertise is the use of analogy. Barbara Spellman concludes that even if judges are not experts in using analogy, “judges . . . know that when using analogies it is important to look for relational similarities and—because of their specialized training in legal content—they know which relational similarities matter within their domains of expertise.”¹⁰³ Thus, being an expert in the use of legal analogies means seeing the importance of structural similarities rather than being distracted by the similarities or differences in surface features.

The connections between studies of analogical processing and the findings of expertise in intuitive problem solving are striking. An emerging consensus by cognitive scientists surrounds a hybrid model of how analogical processing works. This “structural alignment” model incorporates alignment and projection. First, a relevant analogy or metaphor is accessed from long-term memory. The processor then begins mapping the source onto the target to identify matches and align the corresponding parts of the target and the source. The mapping allows analogical inferences to be made about the target, creating new knowledge to fill in gaps. The inferences are evaluated and adapted if needed. As a result, new categories and schemas may be generated.¹⁰⁴ For analogies, the model showed that the most important similarities were found in the *relationships* within the domains rather than in the *features* of those domains.¹⁰⁵

Although it is doubtful that judges receive consistent and immediate feedback from the appellate judges who occasionally review their decisions, norms and conventions of judging may enhance the development of reliable intuitive expertise. Judges are constantly engaged in a back-and-forth process of making decisions, advancing positions and receiving immediate feedback by listening to and reading the arguments of counsel;¹⁰⁶ many judges are required to produce written opinions; in at

101 Schauer, *supra* n. 47, at 104.

102 *Id.* at 113–14. As an example, Frederick Schauer identifies second-order legal reasoning—reasoning “not about what is, but instead about what to do”—as one form of reasoning that “can plausibly be understood to set lawyers apart from others.” *Id.* at 107–09.

103 Spellman, *supra* n. 99, at 149, 162–63.

104 Keith J. Holyoak et al., *Introduction: The Place of Analogy in Cognition*, in *The Analogical Mind: Perspectives from Cognitive Science* 1, 9–10 (Dedre Gentner et al., eds., 2001).

105 *Id.* at 8.

106 Expertise takes time but also develops out of “deliberate practice, . . . study with appropriate feedback includ[ing] identifying errors and working on procedures to eliminate them.” Spellman, *supra* n. 99, at 163.

least some courts, judges go through informal “pre-mortem” processes, arguing with their clerks or with each other about what should be the outcome.¹⁰⁷

In summary, judges may reasonably be viewed as potentially expert problem solvers when they are engaged in tasks that have not been tested in psychological experiments, that is, “law-finding, law-applying, law-interpreting, and law-making.”¹⁰⁸ The analysis in the next section tentatively supports application of the intuitive problem-solving approach in at least the following situations: when there’s a question of the application of old law to changed circumstances, when there’s new law to be interpreted, or when two or more theories of law or lines of cases reasonably could be applied. In other words, intuitive problem solving may be helpful whenever the answer to what should happen next is open to argument for reasons having more to do with the law than with uncertainty about the facts. In these situations, not only is there no one right answer, but an accurate result may not be a realistic goal; instead, the judge may strive to make “a ‘reasonable’ (practical, sensible) decision, as distinct from a demonstrably correct one.”¹⁰⁹

III. Using Intuitive Problem Solving for Legal Persuasion

Persuasive lawyers must fashion appeals to both System 1 and System 2 thinking. From the point of view of intuitive problem solving, System 1 (or intuitive) thinking provides the openings that are essential for System 2 thinking to make a difference. This section explores examples of decision-making that seem to be rooted in intuition. The appeals to System 1 thinking in these briefs and opinions *look* different because appeals to intuition do not look like “legal” arguments. They are not based on deduction from rules or analogies to precedent. Instead, these arguments are invitations to ways of seeing: they appear more as sketches and less like architectural renderings.

Through their work in the field, researchers who study naturalistic decisionmaking have identified an expert problem-solving process.¹¹⁰ The

107 The authors of *Blinking on the Bench* found that the inappropriate use of intuition, in the form of hindsight bias, was less influential when judges were asked to make a ruling on whether there was probable cause—and thus constrained by the rules surrounding their judicial roles—rather than to predict an outcome. Guthrie et al., *Blinking on the Bench*, *supra* n. 13, at 24–29.

108 Schauer, *supra* n. 47, at 104.

109 Richard A. Posner, *The Problems of Jurisprudence* 456 (1990).

110 See Klein, *Sources of Power*, *supra* n. 2, at 15–30; Herbert A. Simon & Associates, *Decision Making and Problem Solving*, in *Research Briefings 1986: Report of the Research Briefing Panel on Decision Making and Problem Solving* (1986) [hereinafter Simon, *Decision Making and Problem Solving*].

problem solver begins by recognizing that a problem-posing situation is familiar and in some way typical.¹¹¹ This recognition occurs through a highly selective search through a number of options. Unlike laboratory experiments, the search through options is highly selective in real-problem situations because so many options are so frequently available.¹¹² During the search, the problem solver uses rules of thumb as mental shortcuts, performing quick evaluations to identify a possibly workable course of action.¹¹³ In most situations, expert problem solvers look for the first workable option, not the best one. Then they visualize or simulate what would happen should they pursue that option. By imagining the options being carried out one at a time, they are able to spot weaknesses and improve the first workable option, making it less necessary to compare alternative options to find the “best” one.¹¹⁴

When the problem solver is an expert, the expert relies on information stored in memory and retrieved when the expert recognizes a cue signaling that a particular piece of information is relevant.¹¹⁵ The ability to use intuition to find the starting point of a good decision stems from an expert’s learned capacity to recognize cues rapidly and to link them to a large amount of stored knowledge. If intuition fails or a prospective solution needs more study and evaluation, the expert “falls back on the slower processes of analysis and inference.”¹¹⁶

A. Persuasion and legal problem solving

For lawyers and students of legal persuasion, the intuitive problem-solving process appears to provide openings for persuasion. Intuition is involved both in the lawyer’s recognition of the cues that might be suggested to prompt judicial appreciation of particular alternatives and in the judge’s recognition of the patterns and paths that might be tested.¹¹⁷

For both lawyer and judge, the process of “intuition” is the same as that identified for expert problem solvers more generally: the situation provides a cue or a prompt. This cue allows the lawyer to suggest a comparison or the judge to tap into information stored in memory to find

111 Klein, *Sources of Power*, *supra* n. 2, at 24–25, 30.

112 Simon, *Decision Making and Problem Solving*, *supra* n. 110, at 12.

113 Klein, *Sources of Power*, *supra* n. 2, at 24–26, 30.

114 *Id.* at 26, 30.

115 Simon, *Decision Making and Problem Solving*, *supra* n. 110, at 13.

116 *Id.*

117 That is, judges “may choose relevant analogies (or precedents) as better or worse, applicable or inapplicable, not because of any particular desired outcome but rather because of their own preexisting knowledge. The influence of such knowledge on the decision process may be entirely unconscious.” Spellman, *supra* n. 99, at 149.

a comparison. Because “[i]ntuition is nothing more and nothing less than recognition” of a parallel or alternative pattern or path, the flash of recognition is only the first step. The intuitive problem-solving process blends fast and slow thinking. First, it calls for the use of cues to prompt the intuition to trigger recognition of parallels: these allow the judge to size up the problem situation quickly and identify a workable option. Second, it requires the judge to think through a mental simulation, which helps the judge imagine how the responsive course of action might be carried out.

During both movements, analogies, metaphors, perspectives, and stories are the “sources of power” for lawyer and judge alike. Analogies, metaphors, and perspectives enable the lawyer to tap into the judge’s experience by suggesting parallels between the current situation and experiences the judge has had in the past.¹¹⁸ Storytelling guides the lawyer and judge through the experimental simulation and testing of whether a responsive course of action will be workable and what changes will be needed. And finally, the frameworks provided by analogy, metaphor, and storytelling organize, make sense of, and store past experiences so they will be available to the decisionmaker in the future.¹¹⁹

B. Using analogy, metaphor, and perspective to prompt intuition

The results and recommendations set forth in the remainder of this section are based on analyzing appellate briefs and opinions from the perspective of intuitive problem solving. As will become clear, the distinctive aspect of intuitive problem solving is that its beginning and its ends are different from those of deductive legal reasoning. Rather than the formal argumentation framework we might expect, it is possible to see in these examples that a cue or a prompt has triggered the decisionmaker’s intuitive recognition of a likeness or similarity, a pattern or path stored in memory. The decisionmaker may be persuaded, it appears, not because new information was provided to change the judge’s mind but because the cue that led to the intuitive recognition allowed the judge to see the situation in a changed way.

118 Judge Posner also describes analogy as supporting the application of judicial intuition:

Analogy belongs to the logic of discovery rather than to the logic of justification. Whether a judge in a common law case starts with other cases or with some sense of what a reasonable decision on grounds of policy would be, he has to make an initial selection from all possible cases, and all possible policy concerns, of those most relevant to the case at hand. . . . At this stage, pattern recognition, a deeply ingrained capability of the human mind, plays a useful sorting role.

Posner, *How Judges Think*, *supra* n. 67, at 183.

119 Klein, *supra* n. 2, at 286.

1. Like it or not, judges will use their intuition.

Intuition is double-edged. A lawyer seeking to persuade an audience will sometimes want a judge to rely only on the automatic, intuitive processing of System 1 thinking (rather than on the more-complex processing that begins, but does not end, with intuition). If the evidence is that the defendant was carrying an umbrella and shaking water off his jacket and shoes when he arrived at the crime scene, and the prosecutor wants the judge or jury to conclude that the defendant had been walking in the rain, there's no need to apply the intuitive problem-solving approach suggested here. The intuitive conclusion that the prosecutor wants the decisionmaker to reach will arrive automatically. If, however, the prosecutor wants the judge or jury to conclude on the same evidence that the defendant had not been outside his apartment all day, the prosecutor will have to provide a cue that prompts the decisionmaker's intuition to recognize a parallel that leads to a different result. Once the prosecutor has turned the decisionmaker's attention toward an alternative, but parallel, path, the prosecutor's argument will have to provide the information needed to channel the decisionmaker's thinking along the path. In the first situation, intuition is enough. In the second, the persuasive lawyer will need to imagine and provide a cue that triggers the door-opening intuition of an alternative.

An example that appears to be the result of the automated, intuitive processing of System 1 is found in *Michael H. v. Gerald D.*¹²⁰ There, the Supreme Court held that a birth or natural father has no protected Constitutional interest in a relationship with his daughter. The second paragraph of Justice Scalia's opinion began,

The facts of this case are, we must hope, extraordinary. On May 9, 1976, in Las Vegas, Nevada, Carole D., an international model, and Gerald D., a top executive in a French oil company, were married. The couple established a home In the summer of 1978, Carole became involved in an adulterous affair with a neighbor.¹²¹

Later in the opinion, Justice Scalia disagreed with the claim in the dissent that his is a "pinched conception of 'the family'":

We disagree. The family unit accorded traditional respect in our society . . . is typified, of course, by the marital family, but also includes the household of unmarried parents and their children. Perhaps the concept can be expanded even beyond this, but it will bear no resemblance to

traditionally respected relationships—and will thus cease to have any constitutional significance—if it is stretched so far as to include the relationship established between a married woman, her lover, and their child, during a 3-month sojourn in St. Thomas, or during a subsequent 8-month period when, if he happened to be in Los Angeles, he stayed with her and the child.¹²²

Once a cue existing within the situation prompted Justice Scalia's intuition to recognize from his memory bank that this was an *extraordinary* pattern—a pattern involving an international model, a French oil-company executive, an adulterous affair with a neighbor, sojourns in St. Thomas, and people who stay with other people merely because they happen to be in the same town at the same time—the conclusion that such a pattern could not constitute a family was easily reached. In this way, Justice Scalia was able to further conclude that there is no constitutionally protected “right to legal parentage on the part of an adulterous natural father.”¹²³ In doing so, he made clear that there was no contest about which of the parties would be giving up a greater interest: “Michael by being unable to act as father of the child he has adulterously begotten, or Gerald by being unable to preserve the integrity of the traditional family unit he and Victoria have established.”¹²⁴

Why is this an example of judicial intuition recognizing a stored pattern rather than an example of deductive reasoning? To deduce that the natural father has no right to legal parentage, the argument would have to begin with an accepted legal rule defining the family, parentage, or even fatherhood. Instead, the intuition that this pattern was so extraordinary that it could not constitute a family appears to have taken hold unconsciously. Nowhere does Justice Scalia address the reasons for his thinking that this situation is so extraordinary or that being unable to act as the father of a child is giving up so little. Moreover, at least some of the evidence supports a different conclusion about how a family might be constituted: “The evidence is undisputed that Michael, Victoria, and Carole did live together as a family; that is, they shared the same household, Victoria called Michael ‘Daddy,’ Michael contributed to Victoria’s support, and he is eager to continue his relationship with her.”¹²⁵ In short, the decision in *Michael H.* appears to be based on the automatic, intuitive processing of System 1.

122 *Id.* at 123 n. 3.

124 *Id.* at 130.

123 *Id.* at 130 n. 7.

125 *Id.* at 143–44 (Brennan, J., dissenting).

2. The use of analogy to suggest parallel patterns may support intuitive openings in interpreting the law.¹²⁶

In law, arguments from analogy are thought to be structured as if they were employing deductive logic. A holding is derived from a case, and the advocate argues that the rule does or does not apply because the case is or is not analogous. By contrast, the more common form of analogy or comparison is based on factual similarity alone. When the lawyer suggests such an analogy to evoke intuitive recognition of a similar pattern as the first step in interpreting the law, the analogy is more of an implicit comparison, often advanced in “hedging” or cautious language, designed to subtly invite the judge to recognize a similarity.

An example may be found in the briefs filed in the lawsuit in which the Supreme Court upheld the minimum-coverage provision of the Affordable Care Act. In doing so, Chief Justice Roberts relied on Congress’s tax power to uphold the constitutionality of the so-called mandate.¹²⁷ Although the tax power had been mentioned as one of the arguments in favor of the provision, the legal fulcrum of the dispute was thought to be Congress’s power to regulate interstate commerce.¹²⁸

Justice Roberts began this section of the majority opinion by noting that the tax-power argument required the Court to look at the statute from a different perspective:

In making its Commerce Clause argument, the Government defended the mandate as a regulation requiring individuals to purchase health insurance. The Government does not claim that the taxing power allows Congress to issue such a command. Instead, the Government asks us to read the mandate not as ordering individuals to buy insurance, but rather as imposing a tax on those who do not buy that product.¹²⁹

Even though Justice Roberts conceded that “[t]he most straightforward reading of the mandate is that it commands individuals to purchase insurance,” given the majority’s holding that the Commerce Clause does not authorize such a command, “it is therefore necessary to ask whether the Government’s alternative reading of the statute—that it only imposes a tax on those without insurance—is a reasonable one.”¹³⁰ He

126 In Judge Posner’s view, whatever reasoning by analogy is, “it is not the application, by means resembling deduction, of clear, preexisting rules to found facts.” Posner, *How Judges Think*, *supra* n. 67, at 180. Instead, he writes, “Analogies can be suggestive, like metaphors, similes, and parallel plots in literature But analogies cannot resolve legal disputes intelligently.” *Id.* at 181.

127 *Nat’l Fed’n of Indep. Bus. v. Sebelius*, 132 S. Ct. 2566 (2012).

128 See *e.g. id.* at 2609 (Justice Ginsburg, concurring in part, concurring in the judgment in part, and dissenting in part) (“This rigid reading of the [Commerce] Clause makes scant sense and is stunningly retrogressive.”).

129 *Id.* at 2593 (Roberts, J.).

130 *Id.* at 2594.

concluded that the alternative reading was reasonable because the mandate “looks like a tax in many respects”: the payment for not having health insurance is paid into the Treasury with tax returns; the requirement “is found in the Internal Revenue Code and enforced by the IRS”; and “it produces at least some revenue for the Government.”¹³¹ The label given to the payment, a penalty rather than a tax, should not affect the analysis of whether it is within Congress’s constitutional tax power. So, Justice Roberts concluded, even though “[t]he Federal Government does not have the power to order people to buy health insurance, . . . the Federal Government does have the power to impose a tax on those without health insurance.”¹³²

The government briefs had relegated the tax-clause argument to a backup alternative, but one amicus brief presented only the tax-power argument and did so in depth, illustrating that once having prompted recognition of a parallel path, lawyers can help judges visualize the outcome of following that path. This brief argued that the challenged provision addressed the problem of uncompensated healthcare services “by requiring individuals either to purchase a minimally adequate health insurance plan for themselves and their families or to pay an annual tax.”¹³³ Because the provision “function[ed] as a tax . . . it was a ‘pecuniary burden laid upon individuals or property for the purpose of supporting the government,’” and because the provision itself contained numerous references consistent with its characterization as a tax, including a specification that the amount owing would be paid as part of an individual’s annual tax requirements, the provision should be considered a tax and within Congress’s tax powers.¹³⁴

Why is this invocation of the tax power an example of an intuitive prompt rather than a deductive argument based on analogy? Had there been precedent holding that anything remotely similar to the minimum-coverage provision should be viewed as a tax, the reliance on the tax power likely would have followed the standard framework of building an argument around analogous precedent. Here, however, the argument that this provision functioned as a tax was primarily suggestive,¹³⁵ providing

131 *Id.* (emphasis added).

132 *Id.*

133 Amici Curiae Br. of Const. L. Scholars in Support of Petrs. (Minimum Coverage Provision), *Nat’ Fed’n of Indep. Bus. v. Sebelius*, 2012 WL 135050 at *3 (Jan. 13, 2012) (132 S. Ct. 2566 (2012)).

134 *Id.* at *5–6.

135 The dissenters characterized the government’s tax argument as literally unprecedented:

The Government contends, however, as expressed in the caption to Part II of its brief, that “THE MINIMUM COVERAGE PROVISION IS INDEPENDENTLY AUTHORIZED BY CONGRESS’S TAXING POWER.” The phrase “independently authorized” suggests the existence of a creature never hitherto seen in the United States Reports: A penalty for constitutional purposes that is *also* a tax for constitutional purposes. In all our cases the two are mutually exclusive.

Id. at 2650–51 (Scalia, J., dissenting).

another way of looking at the provision, and thus it opened up a potential solution to the problem.

3. The use of metaphor to prompt recognition of patterns may support changes in legal interpretation.

Metaphor is a close cousin of analogy.¹³⁶ Analogy retains its implicit suggestiveness because of its phrasing (the minimum coverage provision *looks like* a tax). Although metaphor appears more explicit (the minimum-coverage provision *is* a bear), it retains its status as merely inviting a comparison because it is nonliteral. In metaphor, even though the speaker quite clearly says one thing, the listener most likely understands that the meaning is something other than the literal definition of the words.

In the following cases, the brief and opinion writers explicitly stated that when the government compels a person to salute a flag or punishes a person for wearing a jacket bearing an offensive message, the government is regulating “speech.” The speech metaphor has become so accepted that such statements seem almost literally true today, but at the time of these decisions, characterizing such conduct “as” speech was unprecedented, and the authors used the metaphor to prompt intuitive recognition of a pattern that fit within First Amendment protection.

First, viewing the flag salute as if it were speech, the Supreme Court in 1943 overruled a decision made only a few years earlier and held that the West Virginia State Board of Education had violated the First Amendment when it compelled students to salute the flag and say the pledge of allegiance.¹³⁷ In the opinion for the new majority, Justice Jackson wrote that “[t]here is no doubt that, in connection with the pledges, the flag salute is a form of utterance.” Such symbolism is, he said, a “primitive but effective way of communicating ideas.”¹³⁸ By recognizing this pattern—that the flag salute should be “seen as” speech—Justice Jackson was able to shift the discussion away from the prior, unsuccessful claim by Jehovah’s Witnesses that their religious beliefs should allow them to be free of the requirements of a general rule regulating conduct in schools.¹³⁹ By metaphorically characterizing the flag salute as compelled speech, rather than unprotected conduct, Justice Jackson was able to find that “the action of the local authorities in compelling the flag salute and pledge transcends constitutional limitations on their power.”¹⁴⁰

136 Cognitive researchers have concluded that “metaphor is like analogy” and shares the same basic processes: “structural alignment, inference projective, progressive abstraction, and re-representation.” Dedre Gentner et al., *Metaphor Is Like Analogy*, in *The Analogical Mind: Perspectives from Cognitive Science* 202 (D. Gentner et al. eds., 2001).

137 *W.V. St. Bd. of Educ. v. Barnette*, 319 U.S. 624, 642 (1943) (overruling *Minersville Sch. Dist. v. Gobitis*, 310 U.S. 586 (1940)).

138 *Id.* at 632.

139 *Id.* at 635–36.

140 *Id.* at 642.

Similarly, when *Cohen v. California*¹⁴¹ came before the Supreme Court in 1970, the Court had very recently distinguished between unprotected conduct and protected speech under the First Amendment.¹⁴² In *Cohen*, the Court was asked to decide whether the defendant could be punished for wearing a jacket bearing an offensive phrase. The brief for the jacket-wearer prompted recognition of an alternative, but parallel, path through its use of the metaphor of “speaking”:¹⁴³

While in the courthouse corridor outside Division 20 of the Los Angeles Municipal Court, Appellant wore a jacket upon which were inscribed the words “Fuck the Draft.” Also inscribed on the jacket were the words “Stop War” and two “peace symbols.” . . . Appellant testified that by wearing the jacket as thus inscribed the public was made aware of the depth of feeling against the draft shared by himself and his friends¹⁴⁴

The Court had recently held that burning a draft card was conduct, not speech,¹⁴⁵ and thus not protected by the First Amendment, and the dissent in *Cohen* concluded that “Cohen’s absurd and immature antic, in my view, was mainly conduct and little speech.”¹⁴⁶ But the author of the *Cohen* brief (without pausing to discuss the conduct–speech distinction) suggested recognition of the parallel path and then helped the decisionmaker simulate the appropriate course of action:

We begin with the incontrovertible fact that Appellant was engaging in speech. Since his expression was formulated in words, and since he was arrested because of his words, there is presented in this case, at least *prima facie*, an abridgment of Appellant’s freedom of speech in violation of the First and Fourteenth Amendments. Highly respected authority has advanced the view that speech is entitled to First Amendment protection “without any ifs, buts, or whereases.”¹⁴⁷

Once wearing a jacket was equated with speech, the brief followed the path of a more conventional free speech argument—speech is protected unless some special category applies.¹⁴⁸ In an opinion by Justice Harlan, the majority agreed.¹⁴⁹

How do these uses of metaphor support intuitive problem solving rather than merely exemplify arguments stating the proposition that some

141 403 U.S. 15 (1971).

142 *United States v. O’Brien*, 391 U.S. 367 (1968).

143 Br. for Appellant, *Cohen v. Cal.*, 1970 WL 122788 (Aug. 21, 1970) (403 U.S. 15 (1971)).

144 *Id.* at *7.

145 *O’Brien*, 391 U.S. at 382.

146 403 U.S. at 27 (Blackmun, J., dissenting)

147 Br. for Appellant, *supra* n. 143, at *9.

148 *Id.* at *9–16.

149 *Cohen*, 403 U.S. at 24.

conduct is speech? The metaphorical process of “seeing as” does not change *what* we see, but instead changes *how* we see it. Rather than changing what exists, “[i]t imaginatively alters *how* we structure and color our thoughts about what *is* so.”¹⁵⁰ Again, the distinction is between a prompt leading to recognition of a pattern already stored in the mind of the decisionmaker and an argument seeking to change the mind of the decisionmaker by providing new information. Had the brief writer been pursuing the latter, the brief would have begun with a deductively structured argument based on the distinction between conduct and speech. Instead, the brief begins with the statement that Cohen was engaging in speech. If the reader accepts that cue as evoking recognition of the familiar path for speech claims, the rest of the brief need only follow the path.

4. Prompting intuitive recognition of a perspective or worldview may influence statutory interpretation.

When a metaphor is used as a prompt for recognition of a pattern in our memory, it influences how we see something fairly discrete and specific, such as a flag salute. Using a perspective, or an alternative worldview, as a prompt can influence how we see a much broader range of concepts. For example, if the decisionmaker’s overall perspective is that every individual is solely responsible for his or her own success or failure, that worldview will influence the patterns the decisionmaker is likely to recognize in a range of situations.

Perspectives thus have the same effect as metaphors, but at a higher level of generality: they are more general modes of interpretation and are not tied to a particular subject. “[A] perspective provides an intuitive, holistic principle for organizing our thoughts about some topic” around “a complex structure of relative prominence . . . so that some features stick out in our minds while others fade into the background, and by making some features especially central to explain others.” A perspective may carry attitudes, emotions, and values. Rather than a complete, complex thought, a perspective provides a tool for thinking that “helps us to *do* things with the thoughts we have: to make quick judgments based on what’s most important, to grasp intuitive connections, and to respond emotionally.”¹⁵¹

A comparison of excerpts from the majority and dissenting opinions in a divisive legal argument illustrates the effects of evoking such

¹⁵⁰ Elisabeth Camp, *Two Varieties of Literary Imagination: Metaphor, Fiction, and Thought Experiments*, *Midwest Studies in Philosophy*, XXXIII 116, 110–11 (2009). ¹⁵¹ *Id.*

perspectives. In the Supreme Court decision upholding the federal power to regulate immigration and striking down major portions of Arizona's immigration statute,¹⁵² the majority and dissenting justices appeared to be under the influence of two very different perspectives. In his opinion for the majority, Justice Anthony Kennedy describes the United States as a nation of immigrants, but this is not the important metaphor. He characterizes the power of the "Government of the United States" with regard to immigration as "broad [and] undoubted," resting not only on the Constitution but also on the inherent power of a national sovereign to conduct relations with foreign nations.¹⁵³ He depicts a national government that exercises its significant power with the restraint and discretion necessary when human concerns are immediately at stake:

The National Government has significant power to regulate immigration. With power comes responsibility, and the sound exercise of national power over immigration depends on the Nation's meeting its responsibility to base its laws on a political will informed by searching, thoughtful, rational civic discourse. Arizona may have understandable frustrations with the problems caused by illegal immigration while that process continues, but the State may not pursue policies that undermine federal law.¹⁵⁴

This characterization of the national government, its power, and its restraint is the lens through which Arizona's law may be seen as undermining federal law. From a larger perspective, Justice Kennedy views the United States as a member of the international community of nations.¹⁵⁵ Trying on this perspective, an audience might realign its patterns of thought even if Justice Kennedy did not explicitly state the proposition that only the national sovereign has the power to control and conduct relations with foreign nations.

In his opinion concurring in part and dissenting in part, Justice Antonin Scalia proposes a different metaphor:

The United States is an indivisible "Union of sovereign States." Today's opinion, approving virtually all of the Ninth Circuit's injunction against enforcement of the four challenged provisions of Arizona's law, deprives States of what most would consider the defining characteristic of sovereignty: the power to exclude from the sovereign's territory people who have no right to be there.¹⁵⁶

152 *Ariz. v. United States*, 132 S. Ct. 2492 (2012).

155 *Id.*

153 *Id.* at 2498.

156 *Id.* at 2511 (Scalia, J., dissenting).

154 *Id.* at 2510.

These characterizations accord prominence and centrality to the sovereign character of the States, and they make the central feature of sovereignty the power “to forbid the entrance of foreigners.”¹⁵⁷ Justice Scalia describes the “human realities” this way: “Arizona bears the brunt of the country’s illegal immigration problem. Its citizens feel themselves under siege by large numbers of illegal immigrants who invade their property, strain their social services, and even place their lives in jeopardy.”¹⁵⁸

But this is not the only danger:

[T]he specter that Arizona and the States that support it predicted [has come to pass]: A Federal Government that does not want to enforce the immigration laws as written, and leaves the States’ borders unprotected against immigrants whom those laws would exclude. So the issue is a stark one. Are the sovereign States at the mercy of the Federal Executive’s refusal to enforce the Nation’s immigration laws?¹⁵⁹

Through the filter provided by Justice Scalia’s characterizations, Arizona’s legislation is seen as warranted. Trying on his overall perspective that the States have always had the authority to protect themselves from foreign invasion, an audience might adjust its thinking to conclude that when left unprotected, Arizona must have authority to act.

Arizona’s brief may well have prompted recognition of an overall perspective or worldview already present in the reader’s mind and ready to be activated:

Arizona and its 370-mile border are a conduit for rampant illegal entries and cross-border smuggling to a degree unparalleled in any other State. The public-safety and economic strains that this places on Arizona and its residents have created an emergency situation¹⁶⁰

[The result of federal enforcement efforts focusing on California and Texas] has been the funneling of an increasing tide of illegal border crossings into Arizona. . . . These illegal entries are not quick dashes across the border. They instead often involve multi-day hikes by large groups through rural areas, typically escorted by heavily armed smugglers. This flood of unlawful cross-border traffic, and the accompanying influx of illegal drugs, dangerous criminals and highly

157 *Id.* at 2514.

158 *Id.* at 2522.

159 *Id.* at 2521.

160 Br. for Petrs., *Ariz. v. United States*, 2012 WL 416748 at *1 (Feb. 6, 2012) (132 S. Ct. 2492 (2012)).

vulnerable persons, have resulted in massive problems for Arizona’s citizens and government¹⁶¹

The City of Phoenix has experienced numerous “home invasions” and hundreds of reported kidnappings¹⁶²

[L]arge portions of public and private lands have become extremely dangerous and environmentally degraded.¹⁶³

Private ranchers living near the border constantly face the epidemic of crime, safety risks, serious property damage and environmental problems¹⁶⁴

The intuitive prompts for Justice Kennedy’s more outward-looking worldview may have included the amicus brief filed by “former officials in the foreign policy, defense, and national security establishments of the United States government”:¹⁶⁵

Immigration policy has been part and parcel of U.S. foreign relations since the country’s founding. As this Court has recognized, the text, history, and structure of the Constitution require that the U.S. government speak with one voice on all issues of international relations. . . .¹⁶⁶

Arizona’s S.B. 1070 illustrates the ways in which state immigration laws can interfere with and thereby harm the Nation’s foreign relations. It inherently undermines the exclusivity and uniformity of federal foreign relations power, threatens negative consequences for U.S. relations with other countries, and risks retaliation to U.S. citizens abroad.¹⁶⁷

How do these briefs illustrate the use of prompts triggering intuitive recognition of a perspective already familiar to the decisionmaker? Although both briefs make the deductive legal arguments that would be expected on one or the other side, these briefs also appear to be designed to trigger an intuition that will filter the decisionmaker’s perceptions of the facts and the legal arguments through the lens of a particular worldview. In one brief, the pattern is etched by a heavy-handed but incompetent federal government, unable or unwilling to protect an endangered state; in the other brief, a portrait is drawn of state interference with the nation’s necessary relationships with the rest of the world.



161 *Id.* at *2–3.

162 *Id.* at *4.

163 *Id.* at *5.

164 *Id.* at *6.

165 Amici Br. for Madeleine K. Albright et al. in support of Respt., *Ariz. v. United States*, 2012 WL 1044365 at *2–3 (Mar. 26, 2012) (132 S. Ct. 2492 (2012)).

166 *Id.* at *2.

167 *Id.* at *3.

5. The invocation of a familiar pattern may allow the decisionmaker to avoid a more difficult question.

In the Appellant's Brief in *Citizens United v. Federal Election Commission*,¹⁶⁸ attorney (and former Solicitor General) Ted Olson first prompts the reader to recognize a familiar pattern in the facts: Citizens United has made a critical, fact-filled 90-minute documentary about a political figure that an audience may want to watch. Because the reader is familiar with the informative value and First Amendment protection generally granted to documentaries, it is not a stretch for the legal argument to begin with the text of the First Amendment: "Congress shall make no law . . . abridging the freedom of speech," and to immediately claim that "[t]his constitutional injunction evidently was not in the forefront of Congress's mind when it enacted BCRA, a statute that imposes sweeping restrictions on core political speech."¹⁶⁹

The brief supports its prompt evoking intuitive recognition—a documentary is valuable political speech—by discussing Citizens United's history of distributing its political views through documentary movies, including movies about illegal immigration, the War on Terror, and the United Nations.

These movies have been shown in theaters across the country and sold on DVD by national retailers. A number of them have met with critical and popular success. Citizens United's 2007 documentary film *Rediscovering God in America*, for example, was the top-selling historical documentary on Amazon.com soon after its release.¹⁷⁰

The current documentary is more of the same: *Hillary: The Movie* is a biographical documentary about Senator Hillary Clinton, offering a "critical assessment of Senator Clinton's record as a U.S. Senator and as First Lady in order to educate viewers about her political background." In fact, the documentary focuses on five specific situations: "the Clinton Administration's firing of the White House Travel Office staff; incidents of official retaliation against a woman who accused President Clinton of sexual harassment; Senator Clinton's failure to adhere to campaign finance restrictions while a candidate for U.S. Senate; her record on job-creation, health-care, and national security issues; and the Clinton Administration's abuse of the pardon power."¹⁷¹ Like any other documentary, it is based on facts and interviews.¹⁷²

¹⁶⁸ Br. for Appellant, *Citizens United v. Fed. Election Comm'n*, 2009 WL 61467 (Jan. 8, 2009) (130 S. Ct. 876 (2010)).

¹⁶⁹ *Id.* at *1–2.

¹⁷⁰ *Id.* at *6–7 (citations omitted).

¹⁷¹ *Id.* at *6.

¹⁷² *Id.* at *7–8.

Having invoked the familiar pattern, the brief goes on to help the reader visualize the proper result, assuming the court accepts the brief’s assumption that as a documentary, the Citizens United production must constitute political speech:

This Court has identified only one compelling interest that is even conceivably sufficient to justify governmental restrictions on political speech: preventing *quid pro quo* corruption and the appearance of such corruption in the electoral process.

[] Although that compelling anti-corruption interest may be served by government restrictions on 30- or 60-second broadcast advertisements that constitute express advocacy or its functional equivalent, that interest is categorically inapplicable to restrictions on feature-length movies distributed through Video On Demand. In contrast to short broadcast advertisements—which generally target unwilling recipients—feature-length movies are directed at a self-selected audience willing to invest 90 minutes of their time to watch a movie. And where that movie is offered through Video On Demand, the viewers must affirmatively request the movie from their cable provider. *Hillary* and other feature-length political movies distributed through Video On Demand are therefore far less likely than broadcast advertisements to reach and persuade undecided voters and thereby influence the outcome of an election.

[] Moreover, any anti-corruption interest that the government might have in regulating some feature-length political movies distributed through Video On Demand would not reach movies that, like *Hillary*, are funded primarily through individual donations.¹⁷³

The Supreme Court majority subsequently held that corporate spending for “electioneering communications” and candidate advertisements during election campaigns was speech protected by the First Amendment.¹⁷⁴ The majority assumed that the spending regulated by the statute not only constituted speech but in fact constituted political speech, the most favored kind.

How does the Olson brief illustrate the persuasive use of intuitive problem solving? Rather than confront the legal question—whether corporations are the kinds of speakers intended to be protected by the First Amendment—the brief suggests that the relevant comparison is to a documentary, the kind of speech that everyone agrees should be covered by the First Amendment. The argument is not shaped by the typical

173 *Id.* at *12–13.

174 *Citizens United v. Fed. Election Comm’n*, 558 U.S. 310 (2010).

framework of deduction and analogy. Instead, the brief invites the decisionmaker to begin by seeing the strong factual comparison, opening the way for the more complex evaluation process to follow. In this way, the brief supports the view that there may be more effective “ways of changing someone’s mind than changing his or her beliefs.” What we are after is not so much different beliefs, but “changes in the associations and comparisons one makes, differences in the vivid or ‘felt’ appreciation of something already known, or changes in one’s habits of attention and sense of the important and the trifling.”¹⁷⁵

Conclusion

Lawyers and scholars (not to mention judges themselves) share an abiding interest in explaining and influencing judicial decisionmaking. Viewing judges as human beings makes more understandable the results of studies showing that intuition regularly misleads judges when it comes to making *judgments*. When we are asked to judge character, credibility, or probability based on our perceptions, we should be forewarned that intuition sometimes *closes* minds and excludes relevant facts: we choose instead to rely on a quick picture or snapshot of what we are able to observe.

But when it comes to solving problems, lawyers and judges should turn to the decisionmaking research that illustrates the ways in which intuition *opens* minds. By suggesting and inviting different ways of seeing, intuition helps decisionmakers recognize both parallels and alternatives. Rather than misleading decisionmakers, intuition in these circumstances often leads to workable and effective decisions.

Judges may reasonably be viewed as potentially expert problem solvers when they are engaged in “law-finding, law-applying, law-interpreting, and law-making.”¹⁷⁶ The analysis presented here supports lawyers and judges in their use of intuitive problem solving when the answer to what should happen next is just not clear.¹⁷⁷ This may occur when there is a question about whether it is still appropriate to apply old law to changed circumstances, when new law has not yet been interpreted, and when two or more theories of law or lines of cases could reasonably be applied to the present situation. As in *United States v. Jones*, where applying two existing lines of precedent left the important question unanswered, the intuitive problem-solving approach might provide cues and prompts—taking the

¹⁷⁵ Richard Moran, *Seeing and Believing: Metaphor, Image, and Force*, 16 *Critical Inquiry* 87, 100 (1989).

¹⁷⁶ Schauer, *supra* n. 47, at 104.

¹⁷⁷ See section III, *supra*.

form of factual analogies, metaphors, and perspectives—that would enable decisionmakers to envision a range of potentially workable solutions.

For those who study and practice law, “intuition has a bad reputation [especially when] compared with a judgment that comes from careful analysis of all the relevant factors and shows each inference drawn and traces the conclusion in a clear line to all of the antecedent conditions.”¹⁷⁸ The argument here is that such analytical processes are not the only, and sometimes not the best, sources for solving problems. Instead, loose ends are good things to follow.¹⁷⁹

178 Klein, *supra* n. 2, at 34.

179 Klein, *supra* n. 2, at 286–88.