ARTICLES

CATEGORICALLY BIASED:
THE INFLUENCE OF
KNOWLEDGE STRUCTURES ON LAW
AND LEGAL THEORY

RONALD CHEN* & JON HANSON**

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"The real voyage of discovery consists not in seeking new landscapes but in having new eyes."
~ Proust

"We do not see things as they are. We see things as we are."
~ The Talmud

"A man receives only what he is ready to receive, whether physically or intellectually or morally, as animals conceive at certain times their kind only. We hear and apprehend only what we already half know . . . . The phenomenon or fact that cannot in any wise be linked with the rest of what he has observed, he does not observe."
~ Henry David Thoreau

"The social sciences are not staked out like real estate. Even in law the sanctions for harmless trespass are not heavy."
~ Karl N. Llewellyn

1. INTRODUCTION

You can spot a law review article a mile away. They’re the book-like bricks that no one reads and that have been famously likened to a “row of stiffs in a morgue.” Open them up and breathe in, with the dust, clever titles on sober and obscure topics. The better part of each page is weighed down by tens of footnotes showcasing, in barely readable size, elaborate font tricks that just cannot be found elsewhere. Look a little closer, and you can detect a common structure. Law review articles lead off with a quotation, sometimes two (and never four). They are divided clearly into distinct “parts” with roman numerals, names, and added spacing to be sure that, from the other side of the room, the reader understands that a transition is underway. The first part is usually titled, “Introduction” and, true to its name, introduces “the author’s theme and hypothesis.” The final
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"part" is often titled "Conclusion," a promising indicator to the reader that the end is near. The Conclusion, like the Introduction, summarizes the author's argument. And in between these two "parts" are several others containing the argument in full—many pages of text of the sort that Yale's Fred Rodell once described as filled with "[l]ong sentences, awkward constructions, and fuzzy-wuzzy words." And it is in these middle parts, of course, where the footnotes grow thickest.

Another key identifying characteristic is what the law review article does not contain—namely, any sense of informality and any glimpse of humor. As Rodell noted, "it seems to be a cardinal principle of law review writing and editing that nothing may be said forcefully and nothing may be said amusingly. This, I take it, is in the interest of something called dignity."10

Many others have complained about the basic form and shape of law reviews. Indeed, a cottage industry of Bluebook critics has recently emerged to argue that, in its mission to encourage efficiency, it has failed. Judge Richard Posner has likened the Bluebook to the pyramids of Egypt—both are "mindless elaboration[s] of social practices," making the Bluebook the "hypertrophy of law."11 Worse than mindless, the Bluebook has, according to Judge Posner, encouraged lawyers in their law review "larval stages" to "cultivate a most dismal sameness of style, a lowest-common-denominator style," and fostered "an atmosphere of formality and redundancy in which the drab, Latinate, plethoric, euphemistic style... flourishes."12

As indefensible as conventional practices, rules, and categories may be, their power is, as Judge Posner's lament assumes, significant—a power that seems to emanate in part from the psyches of those who practice them.

8. See Rodell, supra note 5, at 39.
9. See id. at 38–39. See also Zimmermann, supra note 6, at 679 (describing the prototypical law review as "abstract, colorless, and long-winded" and noting that "[h]umor and pithy formulations are obviously regarded as unacademic").
11. THE BLUEBOOK: A UNIFORM SYSTEM OF CITATION I.2, at 4 (Columbia Law Review Ass'n et al. eds., 17th ed. 2000) ("The basic purpose of a legal citation is to allow the reader to locate a cited source accurately and efficiently.").
14. Id. at 1349.
One critic observes that "a challenger to the Bluebook faces a monumental battle because the psychological barriers to entry are so high." That influence extends beyond citation form to include the entire practice of footnoting. Judge Abner Mikva's description of his relationship with footnotes, his renunciation of them, and the reaction he received is illustrative of that power:

I think footnotes are an abomination. If God had intended the use of footnotes to be a norm, He would have put our eyes in vertically instead of horizontally. When I was on law review, I think I was persuaded that an important measure of the scholarly worth of an article was the number of footnotes that it contained. I think some judges and law review editors still believe that. . . . I do believe that the footnote virus first attacks law review members. It hits them the hardest, and they are the most difficult to cure.

I got rid of my virus when then-Judge Stephen G. Breyer, now Justice Breyer, and I were having lunch with . . . Justice Arthur J. Goldberg. . . . Justice Goldberg was telling us that footnotes are terrible things, and we ought to get rid of them. We should not use them. And as we walked out after lunch, Judge Breyer said to me, "You know, I think that is a good idea. We should just stop using them." So we made a pact. From then on, we would not use footnotes in our opinions.

I went back to my chambers and told my clerks we would not be using footnotes in opinions. They went out of the chambers, and they caucused, obviously, and came back and said, "Judge, you cannot do this." I said, "Why? Where does it say in the commission or in the law that I have to use footnotes?" They said, "Well, you do not understand. You are still a new judge, and you are still being measured by law schools and other places where they look at what judges write, and you are not going to be perceived as being a very scholarly judge if you do not use footnotes."

I said, "That is ridiculous. Judge Breyer is not going to use them either." And they said, "Yes, but he is a schol-," and they stopped one syllable short.16

As for "scholars" writing scholarship, the virus may be tougher to kill. The concept of "legal scholarship" includes footnotes, and to foreswear eight-point font risks having one's work categorized as something else, something worse. Indeed, even the bold Judge Mikva acknowledges that he

15. Hurt, supra note 12, at 1280.
may not have had "the courage to write [his] first law review note without footnotes."\(^{17}\)

Most budding law professors know the experience of learning the categories and schemas of legal scholarship. But none has captured the power of those knowledge structures and the disorienting effects of operating outside of them more vividly than Robert A. Williams, Jr. In his recent virus-free article,\(^{18}\) Williams recounts his initiation into academia as "a marginally qualified American Indian with a Harvard Law School degree" on a faculty motivated by "the idea that every law school had to have at least one affirmative action baby":\(^{19}\)

The way for me to [get tenure], as I soon came to learn, was to publish three 100-page law review articles with 400 footnotes.

\[\ldots\]

These three articles . . . couldn't appear in just any old law review to count toward tenure. They had to be published in a select group of "Top Ten" law reviews.

Convincing my senior colleagues even further that I didn't belong at their law school, I asked several of them embarrassing questions like, "Could you please list for me the Top Ten law reviews?" As if anyone needed to actually ask to see the list. You found it in your head, stupid. It was like natural law—a universal, objective form of truth and knowledge that non-affirmatively actioned law professors unlike myself were just born with.

\[\ldots\]

The crazy thing is, I bought into it. Don't ask me why. My first article was 99 pages long (close enough, I thought), with 409 footnotes. I felt it was really something. It had to be, because I learned from a senior colleague that the Three Rules of Acquisition followed by Articles Editors at the Top Six or So law reviews were:

- Rule 1) Something by Someone.
- Rule 2) Nothing by Someone.
- Rule 3) Something by No One.

I was No One . . . \(^{20}\)

Williams continues his account:

\(^{17}\) Id. at 526.

\(^{18}\) It has no footnotes and it is published in a "Top Six or So" law review!


\(^{20}\) Id. at 744–45.
When one of the Old Farts finally read my article, and then told all the other Old Farts about it, they were shocked, absolutely shocked.

First of all, my article had only been accepted at the *Southern California Law Review*. Second, it really didn’t meet the formal standards in terms of publication length—it was only 99 pages; even if it did have 409 footnotes. But, third—and I heard that this is what really pissed off all the Old Farts...—they couldn’t understand my footnotes. How could I have done all those footnotes and cite to less than ten cases total in the whole damn article? A “big article” should cite at least a hundred cases, maybe even two hundred, at least, to be considered tenure-worthy, they hrumphed-rumphed to each other. They told me what I had done wasn’t “legal scholarship.” It was revisionist “history,” or something scurrilous like that. What business did I have doing “that type of thing” without a Ph.D. in the discipline? Here’s a dime, go call the History Department across campus and see if they want you. That type of thing.21

To most of us, shared knowledge structures feel, as Williams notes, “like natural law—a universal, objective form of truth and knowledge that [we are all] just born with.”22 But, as we will explore, that perception is an illusion. And whether we are conscious of them or not—and mostly, we are not—our categories and stereotypes define who we are and what we are doing, be it legal scholarship, history, or something else.

This Article conforms to some of the stereotypes of legal scholarship. We believe in both the legitimating effect and “trashcan function”23 of footnotes, and so use them excessively.24 At the same time, this Article abandons some of the typical features of law reviews, in part to advance through example our larger purpose: to examine the very subject of stereotypes, categories, schemas, and knowledge structures more broadly, and their potential relevance for law and legal scholarship.25

This Article is the beginning of our attempt to understand better not only those who respond to the laws and those who make the laws, but also those who devise the theories on which those laws are based. Knowledge

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21. *Id.* at 749–50. Today, of course, the prototypical law review article should contain, after publication inflation, approximately 143 pages with 642 footnotes, and the *Southern California Law Review* clearly makes the top ten list (or will soon).

22. *Id.* at 744.

23. Mikva, *supra* note 16, at 524 (arguing that footnotes are “like having a trash can for... semirelevant material”).

24. See *infra* page 1253—this Article contains 642 footnotes.

25. This Article’s bulkish length and copious footnotes help demonstrate another important lesson of this Article, namely, the power and self-fulfilling nature of our schemas.
structures, as we shall see, influence virtually every feature of our cognitive processes and every thought we have—from the trivial and humorous to the profound and horrific. Let us begin, then, with a bit of humor.

A. Five Exemplars

1. The Punch Line

A lawyer was approached by a tall, bearded, mystical gentleman, who announced, "I'm about to make you very happy."

"Oh?" said the lawyer.

"Yes," said the bearded stranger.

"I'm going to grant you any three wishes you choose."

"You mean if I ask you to turn me into the number one rainmaker at my firm, you could do it?"

"Easy," said the stranger.

"And you could fix it so I win all my cases?"

"Nothing to it."

"How about getting clients never to complain about bills any more?"

"It's as good as done," said the stranger. "And all you have to do is sell me your soul."

The lawyer hesitated. "Alright," he said suspiciously. "What's the catch?"

What makes for a good joke? There are no doubt many ingredients, and, of course, picking on lawyers is always a good starting point. But the most important element of any good joke is its punch line. Punch lines are the ticklish manipulations of the categories and schemas in our minds. A joke leads us in one direction mentally, often through the use of stereotypical images of a particular group, and then jolts us with an unexpected twist. The lawyer joke is funny because we assume that no

26. Do not worry: we provide more complete definitions below, after first indicating some of the broad and profound influences of schemas and categories.

27. This twist is often either an incongruity that we are forced to resolve by drawing on our prior knowledge or is itself the unexpected resolution of an already incongruous set of information. See Jerry M. Suls, Cognitive Processes in Humor Appreciation, in 1 HANDBOOK OF HUMOR RESEARCH 39, 41–42 (Paul E. McGhee & Jeffrey H. Goldstein eds., 1983).
individuals would consciously sell their souls. The punch comes from the lawyer's obvious eagerness to do so, and the humor comes from remembering that this is a lawyer who, according to stereotypes, is too willing to make that trade. In this way, jokes often employ and toy with the way our thinking is organized. When it comes to understanding (and taking advantage of) the way we think, there are perhaps few people more expert at it than paid professionals.

Take the work of Wendy Liebman, one of the most successful comics currently on the circuit. In one routine about her personal life, Liebman begins, "Younger guys have been approaching me... and asking me to buy [them] alcohol." This method of suggestion demonstrates how the following jokes, also Liebman's, play on our expectations:

"Like a lot of women, I like to shop... lift."

"I can't have kids. They're not in my lease."

"Is there a doctor in the house? Because my mother wants me to marry you."

"I would spend all day filing, filing... my nails."

"My last boyfriend had no trouble committing. Adultery."

"My love life is like a fairy tale. Grimm."

Indeed, some of Liebman's lines contain several twists:

28. The lawyer joke follows the "incongruity-resolution" pattern of humor where the resolution of the incongruous information comes from a punch line that draws upon our stereotypes of lawyers. The incongruity-resolution model, as Jerry Suls writes, is that humor results when the perceiver meets with an incongruity (usually in the form of a punch line or a cartoon) and then is motivated to resolve the incongruity either by retrieval of information in the joke or cartoon or from his/her own storehouse of information. According to this account, humor results when the incongruity is resolved; that is, the punch line is seen to make sense at some level with the earlier information in the joke.

See id. at 42.


30. Teresa Gubbins, Ham on Wry, DALLAS MORNING NEWS, June 27, 1997, at 37A.


32. Johnson, supra note 29.

33. Id.


35. Id.
"I was flying back, and there was this guy sitting next to me, and I could tell he really wanted me... to shut up... because I'm chatting and chatting, and he's busy... flying the plane."36

"It was a very messy divorce... because there was a baby involved... Him... And I didn't want custody."37

"I like it when a man cries... when I hit him. No, I would never hit a man... if he were awake."38

"I'm a writer... I write checks... mostly fiction."39

That Liebman's zingers are manipulations of our mental categories and schemas—processes of which we are not consciously aware—is not missed by the more discerning members of her audience. As a critic from the New York Daily News wrote, "It's the typical set-up and punch line delivery, but followed by an almost subliminal afterthought."40 Similarly, a critic from the Dallas Morning News noted, "One of [Liebman's] best tools was her ability to take a familiar expression or scenario and give it an offbeat spin."41 The Los Angeles Times critic writes of Liebman, "She's a master of the throwaway line, of making a perfectly rational observation, then adding, almost subliminally, the punch line, which skews everything she has said before."42

2. A Riddle

In an episode of the popular 1970s television series, All in the Family, Archie Bunker43 was presented with a riddle:

A father and his son are out driving. They are involved in an accident. The father is killed, and the son is in critical condition. The son is rushed

37. Johnson, supra note 29.
38. Comedy Goddess, supra note 31.
40. Id.
41. Gubbins, supra note 30.
43. This was broadcast in the episode "Gloria and The Riddle," which first aired October 7, 1972. As Hal Erickson summarizes:
   A riddle posed by Gloria sparks a major brouhaha on the topic of Women's Lib. Gloria knows the answer to the riddle, and so does Edith, but Mike and Archie are stumped. Archie, of course, reacts with his usual bombast, while Mike begins to question the validity of his own liberal sentiments.
to the hospital and prepared for the operation. The doctor comes in, sees the patient, and exclaims, "I can't operate, it's my son!"

To Archie and much of his 1970s audience, the riddle was insuperable. A 1972 study by Larry Gorkin found that only eighteen percent of the subjects, almost all of who held feminism as an important value, could solve the riddle. The rest, it seems, were unable to overcome the gendered knowledge that defined their categorization of surgeons. Although more individuals than that would likely solve the riddle today, the mental phenomenon that fueled our inability to solve this riddle in the 1970s persists. Most riddles, like most jokes, depend on exploiting unseen features of our minds—features that in other circumstances can have significant social consequences.

3. The Category of "Woman"

Gender categories of the sort that stumped Archie Bunker are likely at least as old as our species—though they have varied significantly across cultures and times. The category of "woman" has long been understood (though less today than in the past) to be quite separate and in many ways inferior to the category of "man": women were fragile, emotional creatures that lacked wisdom and were unfit for many "manly" tasks and vocations. As Plato, with all his putative wisdom, wrote in _The Republic_,

There is no special faculty of administration in a state which a woman has because she is a woman, or which a man has by virtue of his sex, but the gifts of nature are alike diffused in both; all the pursuits of men are the pursuits of women also, but in all of them a woman is inferior to a man.

Plato was not alone in this view. Indeed, Aristotle went further and urged that we "look upon the female state as being as it were a deformity, though one which occurs in the ordinary course of nature" since "the male is by nature superior, and the female inferior; and the one rules, and the other is ruled; this principle, of necessity, extends to all mankind."

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46. For example, the same riddle is used in current Mensa tests.
For those individuals with the natural "deformity" of womanhood, the opportunity to demonstrate equality or superiority to men was, at the time, rare. History demonstrates that similar categories, categorical assumptions, and categorical chains have been the rule—at least in most Western cultures. In 1792, in A Vindication of the Rights of Woman, the pioneering feminist Mary Wollstonecraft criticized the prevailing belief that the minds of women were not "of a healthy state":

The conduct and manners of women, in fact, evidently prove that their minds are not in a healthy state; for, like the flowers which are planted in too rich a soil, strength and usefulness are sacrificed to beauty; and the flaunting leaves, after having pleased a fastidious eye, fade, disregarded on the stalk, long before the season when they ought to have arrived at maturity. One cause of this barren blooming I attribute to a false system of education, gathered from the books written on this subject by men who, considering females rather as women than human creatures, have been more anxious to make them alluring mistresses than rational wives; and the understanding of the sex has been so bubbled by this specious homage, that the civilized women of the present century, with a few exceptions, are only anxious to inspire love, when they ought to cherish a nobler ambition, and by their abilities and virtues exact respect.

The education system not only reflected a certain conception of women, it also served to perpetuate that conception. Similarly, in A Room of One's Own, Virginia Woolf muses about the lack of female authors, attributing it to reasons other than a lack of ability: "a woman must have money and a room of her own if she is to write fiction." "Intellectual freedom," Woolf concludes,

depends upon material things. Poetry depends upon intellectual freedom. And women have always been poor, not for two hundred years merely, but from the beginning of time. Women have had less intellectual

of a man and of a woman, or the courage and justice of a man and of a woman, are not, as Socrates maintained, the same; the courage of a man is shown in commanding, of a woman in obeying." Id. at 1260a21-a24.


51. VIRGINIA WOOLF, A ROOM OF ONE'S OWN 2 (Harcourt Brace & Co. 1991) (1929). These feminists were, in effect, arguing that gender distinctions were more likely the consequence of the situations of men and women than the dispositions of men and women. The tendency to mistake situation for disposition is extremely common and tends to reinforce existing power imbalances. See Jon Hanson & David Yosifon, The Situation: An Introduction to the Situational Character, Critical Realism, Power Economics, and Deep Capture, 152 U. Pa. L. Rev. 129, 136–37 (2003) [hereinafter The Situation]; Jon Hanson & David Yosifon, The Situational Character: A Critical Realist Perspective on the Human Animal, 93 GEO. L.J. 1 (forthcoming Fall 2004) [hereinafter The Situational Character].
freedom than the sons of Athenian slaves. Women, then, have not had a
dog’s chance of writing poetry.\textsuperscript{52}

Even when women seized upon opportunities to defy expectations of
their category, those accomplishments were often overlooked, ignored, or
quickly forgotten. For instance, a historian of women’s education at
Cambridge University described the “successes” of a female student:

In 1880, a Girton [Cambridge] student, Charlotte A. Scott, was
informally bracketed with the Eighth Wrangler [eighth in order of merit]
in the first part of the Mathematics Tripos. This was a great success for
the women, more especially as it had come in a subject that was
supposedly beyond their mental capacity. But Charlotte Scott received no
recognition of her success from the University. Unlike her co-Wranglers,
her name was not published in the class list and she could never look
forward to the day when she could write the initials ‘BA’ after her
name.\textsuperscript{53}

Unwilling to formally categorize a woman as successful in intellectual
pursuits (and math, at that!), the university was able to ignore the reality
that a factual assessment—indeed of the schemas that they had long
held—might reveal. Men in the university were able to maintain that denial
of admission to women was for their own sake; it was to prevent harm to
the “female constitution,” which was poorly equipped for such things as
education—including, of course, law school education.\textsuperscript{54}

The Supreme Court’s decision in \textit{Bradwell v. Illinois},\textsuperscript{55} a case in
which a female applicant sued to be admitted to law school, reflects the
well-accepted categorization of women in 1872 and the general
understanding of the nature of the “female constitution.” Concurring with
the Court’s conclusion that the guarantees of the Fourteenth Amendment
did not extend to women, Justice Bradley reasoned:

On the contrary, the civil law, as well as nature herself, has always
recognized a wide difference in the respective spheres and destinies of
man and woman. Man is, or should be, woman’s protector and defender.
The natural and proper timidity and delicacy which belongs to the female
sex evidently unfit it for many of the occupations of civil life. The
constitution of the family organization, which is founded in the divine
ordinance, as well as in the nature of things, indicates the domestic

\textsuperscript{52}. \textit{Woolf}, \textit{supra} note 51, at 118.
\textsuperscript{54}. \textit{See id.} at 84.
\textsuperscript{55}. \textit{Bradwell v. Illinois}, 83 U.S. 130 (1872).
sphere as that which properly belongs to the domain and functions of womanhood.

It is true that many women are unmarried and not affected by any of the duties, complications, and incapacities arising out of the married state, but these are exceptions to the general rule. The paramount destiny and mission of woman are to fulfill the noble and benign offices of wife and mother. This is the law of the Creator. And the rules of civil society must be adapted to the general constitution of things, and cannot be based upon exceptional cases.\(^5\)

The acceptance of the man’s sphere and the woman’s sphere in the law, justified by the “timidity” and “delicacy” of the female sex, only helped to perpetuate such justifications. Laws, Justice Bradley reasoned, must be adapted to the “general constitution of things”; human laws must comport with “natural laws.” Bradley never recognized the ways that this seemingly natural constitution of women might be as much the consequence as the cause of the laws themselves.\(^6\)

It was a long time before women were afforded opportunities that enabled them to trigger a questioning of many attributes long attached to their category, whether it was a lack of education, money, a room of one’s own, or the many other factors that stood and stand as obstacles to women.\(^7\)

Laws, written and unwritten, made attempts to defy categorizations extremely difficult, thus reinforcing stereotypes and reproducing the legal and social pressures on women to conform to these stereotypes. Without

\(^5\) Id. at 141-42.
\(^6\) For a compelling account of the separate spheres of men and women, including some of the benefits, see generally NANCY F. COTT, THE BONDS OF WOMANHOOD: “WOMAN’S SPHERE” IN NEW ENGLAND, 1780-1835 (1977).
\(^7\) See generally PHYLLIS STOCK, BETTER THAN RUBIES: A HISTORY OF WOMEN’S EDUCATION (1978) (describing inequality in education and other obstacles to women’s advancement).

Debates about the relevance of the category of “woman” in lawmaking continue to this day. For example, in a recent decision opening the states to lawsuits over violations of the Family and Medical Leave Act, the Court determined that Congress was justified in attempting to combat state laws that reflected and reinforced stereotypes of women. Justice Rehnquist criticized the practice of offering different leave policies for men and women as “not attributable to any differential physical needs of men and women, but rather to the pervasive sex-role stereotype that caring for family members is women’s work.” Nev. Dep’t of Human Res. v. Hibbs, 538 U.S. 721, 731 (2003). Some commentators have suggested that Rehnquist’s sensitivity to stereotypes in this instance reflect his own nonprototypical life experiences of late. See, e.g., Linda Greenhouse, Ideas & Trends: Evolving Opinions; Heartfelt Words from the Rehnquist Court, N.Y. TIMES, July 6, 2003, § 4 (Magazine), at 3 (“His daughter, Janet, is a single mother who until recently held a high-pressure job and sometimes had child-care problems. Several times this term, the 78-year-old Chief Justice of the United States left work early to pick up his granddaughters from school.”).
the opportunity to demonstrate their mental capacities or, when they did, without the recognition that would help to alter the stereotypes, the belief in Plato or Aristotle's description of women triggered little critical reflection in most. Elizabeth Cady Stanton thus observed that

[man's intellectual superiority cannot be a question until woman has had a fair trial. When we shall have had our freedom to find out our own sphere, when we shall have had our colleges, our professions, our trades, for a century, a comparison then may be justly instituted. When woman, instead of being taxed to endow colleges where she is forbidden to enter—instead of forming sewing societies to educate "poor, but pious," young men, shall first educate herself, when she shall be just to herself before she is generous to others; improving the talents God has given her, and leaving her neighbor to do the same for himself, we shall not hear so much about this boasted superiority.]

And, similarly, Wollstonecraft challenged, "Let men become more chaste and modest, and if women do not grow wiser in the same ratio, it will be clear that they have weaker understandings."

4. Hitler's "Jews"

While Hitler's hatred of Jews was monstrously intense, it would be a mistake to assume that he did not occasionally struggle to spare certain Jews by manipulating categories. This occurred particularly for Jews who served important functions within his military hierarchy. In a recent analysis of that topic, Bryan Mark Rigg writes,

Some of his actions suggest that Hitler believed Jewish "blood," even in minute amounts, could ruin a person. Other actions suggest that Hitler believed Mendel's theory of genetics by which a Mischling [men of partial Jewish descent] could be 100 percent Aryan if he inherited all his blood from the Aryan parent. But Hitler consistently wavered on facts about race. Some of his own decisions did not reflect the pure categories of race so central to Nazi rhetoric and philosophy.

Hitler was not the only one who found the need to adjust his categories. At the same time many soldiers worked toward the extermination of Jewish people, they fought alongside Jewish comrades.


60. WOLLSTONECRAFT, supra note 50, at 20.

These generals could make exceptions for *Mischlinge* they viewed as Germans and comrades-in-arms.... Although they felt certain *Mischlinge* were worth saving, they agreed that Jews should be exterminated, especially the ‘Asiatic’ and Communist Ostjuden. One must not forget that even Hitler helped many *Mischlinge* at the same time he ordered Jews to be exterminated.62

Such exceptions are especially remarkable in light of the fact that Hitler’s anti-Semitism was race-based—rather than religion or culture-based—and thus relatively inflexible.63 Nonetheless, some Jews managed to defy the stereotypes promulgated by Hitler and avoid or postpone the fate he eventually directed for them. Even less well-known are the formal exceptions that Hitler made for Jews who he deemed should be considered of German blood, or *deutschbluetig*. One colonel advocating in support of a half-Jewish Unteroffizier’s application for recategorization as *deutschbluetig* wrote, “[He] has an irreproachable character and he’s altogether German with soldierly values ... and [he’s] the opposite (Gegentyp) of the typical Jew who served in the offices ... during World War I—he’s honorable, dutiful, German and thoroughly a militarist.”65

Yet, as that example illustrates, the exceptions that Hitler made for Jews may have reinforced the stereotypes undergirding anti-Semitism, and may have been exceptions only because of other crosscutting, salient categories and schemas (for example, the good German soldier). Furthermore, the exceptions were not very stable. Hitler was relatively lenient in the early days of his consolidation of power, but his categories became less elastic as his war effort began to falter.66 This phenomenon of strange trench-fellows is surprisingly common:

62. *Id.* at 269.


64. RIGG, *supra* note 61, at 211.

65. *Id.* This practice of enveloping into one’s stereotypical fold those who do not conform to some or all of the fold’s features, but who are willing to assimilate in other ways, has been referred to as “passing.” See, e.g., DERRICK BELL, RACE, RACISM AND AMERICAN LAW 9 (4th ed. 2004) (referencing the practice of seeking to avoid racial oppression through assimilation); PASSING AND THE FICTIONS OF IDENTITY (Elaine K. Ginsberg ed., 1996) (containing a collection of essays discussing the politics of passing and the construction of identity).

66. Rigg writes that

[the] number of exemptions granted to Mischling soldiers between 1941 and 1943 sharply decreased from what it had been between 1938 and 1940. By 1944, Hitler regretted having treated Mischling soldiers leniently. He expressed his change of heart by discharging many who had exemptions and deporting them and other half-Jewish veterans to OT forced labor camps.

RIGG, *supra* note 61, at 272.
The predicament of people fighting for a regime that did not recognize their basic human rights is not new. Throughout the American Civil War, thousands of free blacks and slaves, as well as some mulattoes... fought for the Confederate States of America. A few mulattoes even served as Confederate officers. Some of these African-Americans were slave owners 'willing to fight for the protection of their slave property.' Historians estimate that some forty thousand African-Americans served in the Confederate armed forces. These men fought to preserve a social order that sought to keep the majority of southern African-Americans as slaves. African-Americans also fought in the armed forces during World War I and II, long before the civil rights movement gained popular support in the United States. Japan conscripted Koreans for the Japanese army during World War II. A few hundred Japanese-Americans... served in the American armed forces in World War II, although the U.S. government interned some of their families. Many returned home in 1945 to find their property sold and anti-Japanese sentiment rampant.  

These examples are only a few of the many instances in which people, even in their daily lives, defy stereotypes. But Rigg's analysis of Hitler and his soldiers' reactions to their Jewish cohorts also demonstrates how ambiguities in category boundaries and in the characteristics and behaviors of those being categorized enable individuals to manipulate their assessments in self-serving ways. Despite a desire to classify all people of partial Jewish descent as Jewish and therefore as members of an evil or contaminated category of people, Hitler found himself making exceptions for certain Mischlinge who demonstrated what he considered to be Aryan characteristics—"soldierly values," honor, duty, and militarism—in part because he very much wanted such people on his side of the war effort. Because such characteristics belied the attributes that his Jewish category was thought to contain, he was willing to recategorize those soldiers and sometimes even declare them of German blood.

The extent to which our categories are manipulable is often obscured by the appearance of "natural" categories, or categories into which people or things naturally fall. Yet, as the example above illustrates, even seemingly clear or natural categories may be susceptible to our own biases. In a recent book, geneticist Joseph Graves has argued that racial categorizations have no biological foundations—"that there is no biological basis for separation of human beings into races"—and racial categorizations should be viewed as a "relatively recent social and political

67. Id. at 267.
68. Id. at 16.
construction."69 "There is more genetic variability," Graves observes, "in one tribe of East African chimpanzees than in the entire human species!"70 Indeed, genetic variability within racialized groups, which is far greater than that between racialized groups, is magnified by external influences that make the variability seem an acceptable and even obvious dimension of categorization.71 As a basis for further action, racial categorizations have served to highlight the differences between groups of individuals and obscure the fact that these individuals are much more similar than they are different. Rather than natural, these categories are largely created and maintained by society and, as with Hitler's ability to define and redefine the Jewish category, may be heavily influenced—consciously or unconsciously—by our biased motivations.72

Just as Jews with soldierly virtues found a haven in their perceived dignity, those perceived as "economically useful" were often excepted from the regime's gamut of discrimination. The extermination efforts often were limited explicitly by an effort to prevent the execution of "craftsmen" or otherwise economically useful Jews.73 In one situation, a commanding officer "emphasized that a liquidation of the Jews could not take place arbitrarily. The larger portion of Jews still present in [one] city consisted of craftsmen and their families. One simply could not do without the Jewish craftsmen."74 Something about the craftsmen made them simply indispensable despite a competing category, Jewishness, that called for instant disposal.

Likewise, even though many private German citizens—that is, the non-Nazi, nonmilitary population of the Third Reich—increasingly tolerated the schematic Jew as a subject of official discrimination,75 when the salient schema and motivating factor of economic gain came into conflict with this racial schema, the population and the regime responded. In the Spring of 1933, the Nazi party sponsored a boycott of Jewish

70. Id. at 9.
71. Id. at 168.
72. To say that race is not biological is not to say that it does not matter. As we will see, categories and schemas can have an immense influence, even when they are more or less socially constructed.
74. Id. at 20.
75. ROBERT GELLATELY, BACKING HITLER 7 (2001). Recently, this has famously been called society's "escalating indifference." Ulrich Herbert, Extermination Policy: New Answers and Questions About the History of the "Holocaust" in German Historiography, in NATIONAL SOCIALIST EXTERMINATION POLICIES: CONTEMPORARY GERMAN PERSPECTIVES AND CONTROVERSIES 1, 27 (Ulrich Herbert ed., 2000).
businesses, but other businesses and consumers simply did not follow along, and the boycott failed. Various other anti-Jewish laws passed around the same time with no opposition, leading historians to agree that anti-Semitic policy that interfered with "pragmatic-economic motives" would arouse opposition in a unique way. Economic usefulness provided some immunity to an otherwise doomed category of people.

Understanding economic (and other) motivations is therefore critical to understanding our use of schemas and categories. At the same time, as our next example illustrates, understanding our schemas and categories also may help us to understand economic analysis better.

5. The Economic Approach to Law

In his popular primer, An Introduction to Law and Economics, legal economist A. Mitchell Polinsky provides a guide to evaluating policy decisions "in the form of three questions that should be considered in every economic analysis of a legal problem." Polinsky's approach, illustrative of the general economic approach, relies on the categorization of considerations and the analysis of those categories. "The first question," Polinsky writes, "is concerned with choosing the criterion for evaluating legal rules. The second and third questions are concerned with determining the effectiveness of legal rules in satisfying the criterion."

According to Polinsky, policymakers must first ask themselves the following question: "Should efficiency be the sole criterion used to evaluate legal rules, or should equity be taken into account as well?" Reflecting and advancing a long tradition of economic analysis, Polinsky's conclusion is clear: "efficiency generally should be the primary criterion for evaluating legal rules."

This answer is often described in terms of a familiar pie-baking metaphor. As conceived by legal economists, the law is able to pursue either (or both) of two categories of objectives: maximizing the size of the pie, or dividing the slices of the pie more equally. Laws, legal economists

77. A. MITCHELL POLINSKY, AN INTRODUCTION TO LAW AND ECONOMICS 115 (1983).
78. Id.
79. Id.
80. Id. at 117.
81. Id. at 7.
generally conclude, should seek to maximize the size of the pie, leaving to other institutions the responsibility for slicing it up more equally.  

Accepting this, policymakers should then ask a second question: “Does the legal rule create incentives for the relevant individuals or firms to behave efficiently?” In considering the answer to that question, policymakers should analyze two aspects of behavior, the “care decision” and the “activity-level decision.” Evaluating those decisions will help policymakers ensure that the rule provides the efficient deterrence-related incentives.

Finally, policymakers should ask a third question: “Does the legal rule efficiently allocate risk among the relevant individuals or firms?” Having established that the sole focus should be on efficiency considerations, and having chosen a policy that creates efficient behavioral incentives, the final step is to ensure efficient insurance arrangements.

Polinsky’s three-step guide—by breaking the policy issues into basic categories such as efficiency and equity, insurance and deterrence, and activity-level deterrence and care-level deterrence—has been the basic template used by legal economists and, increasingly, policymakers in approaching and analyzing all policy problems. This three-step approach occurs against a background desire to generate clear policymaking advice by minimizing the number of issues considered and avoiding particularly complex, value-laden issues. As such, a traditional justification for a focus on efficiency, rather than equity, was legal economists’ self-professed inability to consider difficult issues that required value judgments.

The set of relevant policy considerations has been even more narrowly tailored for certain areas of law. In tort theory, for example, conventional wisdom has it that insurance considerations can be virtually eliminated from any efficiency analysis because it will generally be true that either market-provided insurance is cheaper than tort-provided

82. Id.
83. Id. at 117.
84. Id. The care decision has to do with how much care individuals take when engaging in the activity, and the activity-level decision has to do with how much activity the individual engages in at a given level of care.
85. Id. at 119.
86. See Ronald Chen & Jon Hanson, Distribution Versus Efficiency: Missing the Taste of the Pie (Working Paper 2004, on file with authors). This institutional competence argument was soon supplemented and surpassed by another institutional competence argument, this time based on the supposed relative competencies of the legal system and the tax-and-transfer system. For a more thorough review and analysis of this point, see id.
insurance or that no insurance is desired (no matter its source). And one leading tort scholar has argued further that activity-level deterrence considerations should be ignored in the efficiency analysis, owing to the difficulty and costliness of making meaningful activity-level determinations. Because of this perspective, the bulk of law and economics analysis of tort law in recent years has focused predominantly on the deterrence effects of various liability and damage rules.

Similarly, the dominant theoretical approach to corporate law has adopted and refined the categorical contours of the general law and economics approach. Like other substantive areas, corporate theorists first make the problem tractable by limiting the focus of the law to one constituency—shareholders—on the ground that other constituencies enjoy adequate protection through other institutions. And for shareholders, legal economists focus on maximizing the size of the pie, a theoretical focus that is said to maximize the pie for all constituencies. This basic analysis, according to legal economists, is the foundation for the shape of corporate law today.

As these examples help to illustrate, the economic approach relies at its basic level on the creation of categories of considerations and on the search for the "best" institution to bear responsibility for each category. This categorization of norms and appropriate institutional venues renders many of the most complex social problems tractable and thus renders the categories themselves extremely attractive.

With that insight in mind, we end this section, as we began it—with a joke. Only this one is not about lawyers, but economists:

A shipwreck has left a physicist, a chemist, and an economist without food on a deserted island. A few days later a can of beans is washed up

92. See, e.g., id. at 440–41.
on the shore. The physicist proposes the following method of opening the can:

I've calculated that the terminal velocity of a one-pound object—the weight of the can—thrown to a height of twenty feet is 183 feet per second. If we place a rock under the can the impact should just burst the seams without spilling the beans.

The chemist's response is:

That's risky since we can't be sure we will throw it to the correct height. I've got a better idea. Let's start a fire and heat the can on the coals for one minute, thirty-seven seconds. I've calculated that this should just burst the seams. This method is less risky since we can always push the can off the fire if it starts to burst sooner [plus we get hot beans].

The economist's reaction is:

Both of your methods may work, but they are too complicated. My approach is much simpler: Assume a can opener.93

The aspiration of the economic and legal economic approach is, as this now-tired joke emphasizes, to reduce complex problems to simple questions (with simple answers). Although economists are the butt of this joke, this tendency is, in fact, a general human tendency. As this Article will highlight, it is a tendency that likely biases all of legal theoretic analysis, and not just law and economics analysis, far more than we legal theorists care to admit.

B. COGNITIVE THEMES

The examples above, ranging from the comedic to the tragic to the seemingly academic, might appear to have little in common, and some might appear to have even less to do with the law. In our view, however, they share an important characteristic: they all reveal and reflect the human tendency to create and rely on knowledge structures—and in particular on categories and schemas—in processing information, drawing conclusions, and in making sense of the world around us. This common tendency reveals itself not only in the minds and behaviors of those who face the laws, but also in the minds and behaviors of those who make the laws and of those who grapple with the theories on which those laws are based.

The examples above are only a few illustrations, some common and some not, of how helpful and harmful categories and schemas can be.

93. POLINSKY, supra note 77, at 1.
Liebman's stand-up comedy is based on her ability to manipulate our commonly held schemas. When she delivers a punch line that skews everything she has previously said, Liebman is simply adding the few words that she knows will jolt our minds—signaling to us that the schema we have been applying is completely wrong. Archie Bunker is victim to the same cognitive biases as Hitler and the rest of us; we all use categories and schemas to help make sense of our worlds. The problem for Archie is a familiar one even outside of social cognition research—the problem of stereotypes. Stereotypes are one of the topics in social cognition that has been applied most broadly, partly due to the general interest in stereotypes as a source of discrimination. The problem for Hitler was also partially one of stereotypes—what to make of evidence that some members of the stereotyped group behaved in nonstereotypical ways.

Recent Supreme Court decisions provide further evidence of the centrality of stereotypes to the law. In its decision allowing parties to sue states for violations of the Family and Medical Leave Act, Chief Justice Rehnquist noted that "states continue to rely on invalid gender stereotypes in the employment context, specifically in the administration of leave benefits" and argued that "reliance on such stereotypes cannot justify the States' gender discrimination in this area." Similarly, Justice O'Connor, writing for the majority in the case affirming the University of Michigan Law School's admissions policy, grounded her decision in the importance of breaking down stereotypes. She noted that "the law school's admissions policy promotes 'cross-racial understanding,' helps to break down racial stereotypes, and 'enables students to better understand persons of different races.'" As influential as stereotypes are, however, they are merely the best known example of a far broader phenomenon documented by social psychologists.

The importance of knowledge structures more generally in understanding the way we view the world is well demonstrated in the Court's decision in Lawrence v. Texas. Justice Kennedy observed that the absence of laws directed solely against homosexual conduct historically "may be explained in part by noting that . . . the concept of the homosexual as a distinct category of person did not emerge until the late

94. See infra text accompanying notes 505-21 (discussing several examples of legal scholarship devoted to this topic).
19th century." Until that categorization occurred, Justice Kennedy claims, conduct between homosexuals was not distinguished from that between heterosexuals. The category is part of what makes discrimination possible—part of the “power of naming.” The same is true, as we indicated, of racial categories. Similarly, the category of “woman” (and less evidently, that of “man”) has itself been—and continues to be—a necessary ingredient of sexual discrimination and an unfortunate example of how our schemas help shape our reality. Thus, an education system created within a society in which women were thought intellectually inferior to men excluded women based on that schema, and thereby served to reinforce it. Our schemas and the practices they “make sense” of are mutually constitutive.

Scripts, another type of schema that helps us process information efficiently, give us a handle for understanding, remembering, and drawing inferences about salient events. When we see people in a restaurant paying their bills, we need not have witnessed them eating in order to surmise that they have eaten. So too when legal economists encounter efficiency-based policy analysis, they require no explanation for why that analysis excludes numerous considerations. The ability of scripts to guide and often constrain our thinking was identified with concern as a justification for approving Michigan Law School’s admissions policy. The plaintiff’s brief noted that

[s]tudents learn more and think in deeper, more complex ways in a diverse educational environment. Extensive research in social psychology demonstrates that active engagement in learning cannot be taken for granted . . . . Complex thinking occurs when people encounter a novel situation for which, by definition, they have no script, or when the environment demands more than their current scripts provide. Racial diversity in a college or university student body provides the very features that research has determined are central to producing the conscious mode of thought educators demand from their students.

98. Id. at 578.
99. See ANDREA DWORKIN, PORNOGRAPHY: MEN POSSESSING WOMEN 17 (1979) (“This power of naming enables men to define experience, to articulate boundaries and values, to designate each thing its realm and qualities, to determine what can and cannot be expressed, to control perception itself.”).
100. See supra text accompanying notes 69–72.
101. See supra text accompanying notes 77–86.
Schemas do much more than simply constrain or bias our thinking in humorous or harmful ways. The human system of processing information is, in many cases, an efficient means of understanding our worlds and ourselves. Classification of people, objects, and other stimuli is often both indispensable and ineluctable. Like Polinsky's economic schema, our day-to-day schemas can be very useful in providing us a workable procedure for solving complex problems.

Still, as social psychologists have demonstrated, "virtually any of the properties of schematic functioning that are useful under some circumstances will be liabilities under others."103 The categories and schemas that operate, usually automatically, influence all aspects of information processing—from what information we focus on, to how we encode that information, to which features of that information we later retrieve and remember, and to how we draw inferences and solve problems based on that information. Given the unconscious and biasing influence of our schemas, combined with the fact that our schemas themselves will often reflect our unconscious motives, we should be mindful, even distrustful, of our schemas and the conclusions that they generate.

These effects, the processes that drive them, and the biases they engender are the primary subject of this Article. A central goal is to offer a broad understanding of how individuals utilize categories, schemas, and scripts to help make sense of their worlds. In doing so, we serve another main objective: to provide a comprehensive (yet manageable) synthesis of a vast body of social psychology literature.104 This overview should transform how we make sense of our laws and legal-theoretic world.

As will become clear, few of us are any better equipped than Archie Bunker was at recognizing or understanding the role that categories and schemas play in guiding our judgments. Indeed, this is what makes these social psychology insights important for legal theory: even the seemingly most sophisticated of legal scholars are, like the law, categorically biased. The influence of our categories is tantamount to the influence of the can in the joke about the marooned academics. The categories, like cans, have an important place in containing, labeling, arranging, and storing what would otherwise be, like spilled beans, an intractably messy world. The


104. Even in social psychology literature, the various features of knowledge structures that we synthesize in this Article have not been given the compendious treatment that we offer. As we hint below, that may reflect an absence of shared knowledge structures about knowledge structures.
CATEGORICALLY BIASED

(widespread, implicit) assumption that the categories do not sometimes constrain us, like an impenetrable can, is preventing us from achieving our purported end. We will not get to the beans by merely assuming a can opener.

C. THIS ARTICLE IN CONTEXT

This Article is part of a larger project or legal-theoretic approach—dubbed "critical realism"—intended to bring to legal theory and the law the best evidence available on how real humans behave, on how they make sense of their worlds, and on what moves them. This project, described at length elsewhere,\(^\text{105}\) rejects the tendency of most legal theories—including most prominently law and economics—to assume that human actors behave according to unrealistic intuitions or falsified models. Critical realism, therefore, rejects various "rational actor" constructs and embraces instead a view of the human animal as a "situational character." The human animal, unlike the actors that most of us see and presume ourselves to be, does not act mostly in response to a stable set of preferences informed by well-ordered cognitions. Instead, the human animal behaves largely in response to a set of largely unseen situational influences in its environs or within its skin—that is, exterior and interior situations. In that sense, the human animal behaves less as the choice-making, autonomous agent so commonly and self-affirmingly assumed in laws and legal theories and more as

an individual who does not act with total freedom (even if she does sometimes act extemporaneously) and who does not often choose her stage. She instead finds herself, and we as legal scholars find her, already in action on a given stage, among other characters, with dialogue and plot proceeding apace around her, and subject to the powerful (if less visible) influence of scripts, props, backdrops, and directors.\(^\text{106}\)

This situational character is as unfamiliar in legal literatures as she is demonstrated in, among other places, the social psychology literature. The focus of this Article is on one key interior attribute of the situational character. In other words, we will focus primarily on one slice of social psychology research, namely the vast and vibrant field examining the integral role that knowledge structures play in the way we attend to,

\(^{105}\) For more complete introductions to critical realism and the assertions we make about it in this section, see Hanson & Yosifon, The Situation, supra note 51, at 179–91; Hanson & Yosifon, The Situational Character, supra note 51.

\(^{106}\) Hanson & Yosifon, The Situation, supra note 51, at 155.
remember, and draw inferences about information we encounter and, more generally, the way we make sense of our world.\textsuperscript{107}

Part II of this Article is devoted to describing the significance of knowledge structures. At times, our synthesis of the related literatures will be challenging to the uninitiated: existing knowledge structures, as we will highlight, can be a hindrance as much as a help when encountering new concepts and theories. But the biggest hurdle for readers may be in fully appreciating the relevance of knowledge structures for legal-academic scholarship. Unfortunately, readers initially must take somewhat on faith our assertion that such an overview provides an extremely valuable foundation for better understanding legal theories and laws.\textsuperscript{108} We will introduce social scientific research and findings that, viewed in isolation or even within the threads of our larger synthesis, may seem unrelated to what people think about when they think about law.

The good news is that Part III is devoted to providing a sample of evidence that begins to vindicate our assertion. And our related work, which builds on this foundation, will, we believe, fully vindicate it. Part III briefly summarizes how legal scholars have thus far applied insights about knowledge structures and argues that their most profound implications have yet to be appreciated. Part III then provides a set of predictions regarding the influence of knowledge structures and the biases they likely engender for legal theories and laws. It will also preview our related articles that test those predictions in several of the most prominent legal-theoretic debates of the last half century, including disagreements over the role of distributional considerations in legal rulemaking and over the goal of corporate law and many of its numerous doctrinal applications. The relevance of knowledge structures and the foundational overview that the next section provides will, we expect, be important not just for our own work, but for the work of all legal scholars who share our commitment to better understanding laws, legal theories, and ourselves.

\textsuperscript{107} For other interior attributes of the situational character, see Hanson & Yosifon, \textit{The Situational Character}, supra note 51.

\textsuperscript{108} But such an assertion should not be surprising, unless there is some reason to believe that today's lawmakers and legal scholars do not rely on knowledge structures or somehow manage to immunize themselves from the sometimes dangerous influences to which social psychology and history have demonstrated them to be subject. As we will argue here and in other articles, there is no evidence to support such an optimistic belief and much evidence to the contrary.
II. SCHEMAS, CATEGORIES, AND HUMAN COGNITION

A. INTRODUCTION

Categories and schemas are critical building blocks of the human cognitive process. They allow humans to process or at least cope with the infinite amount of information in their environs. Categories and schemas influence every feature of human cognition, affecting not only what information receives attention, but also how that information is categorized, what inferences are drawn from it, and what is or is not remembered.

Unfortunately, before we can elaborate on those effects, we face a small schematic hurdle. The definitions of, and the dividing line between, categories, schemas, and similar concepts are somewhat ambiguous in the social psychology literature, with the terms used in often quite different ways by different scholars.


111. Although the definition of a schema may be, in comparison to that of a category, somewhat confusing, this stems more from the occasional variance in the terminology used than from a disagreement over the concept itself. The definitions used by social psychologists vary, beginning with F.C. Bartlett's definition, which inspired modern schema theory: he defined a schema as "an active organization of past reactions, or of past experiences, which must always be supposed to be operating in any well-adapted organic response." F.C. Bartlett, Remembering: A Study in Experimental & Social Psychology 201 (1932). Susan Fiske and Shelley Taylor describe a schema as "a cognitive structure that represents knowledge about a concept or type of stimulus, including its attributes and the relations among those attributes." See Susan T. Fiske & Shelley E. Taylor, Social Cognition 98 (1991). By comparison, Reid Hastie chooses a broad definition of a schema—including "almost any of the abstract hypotheses, expectations, organizing principles, frames, implicational molecules, scripts, plans, or prototypes that have been proposed as abstract mental organizing systems or memory structures." Reid Hastie, Schematic Principles in Human Memory, in Ontario Symposium, supra note 103, at 39, 39. William Brewer and Glenn Nakamura define schemas to be "unconscious mental structures and processes that underlie the molar aspects of human knowledge and skill," see William F. Brewer & Glenn V. Nakamura, The Nature and Functions of Schemas, in 1 Handbook of Social Cognition 119, 140 (Robert S. Wyer, Jr. & Thomas K. Srull eds., 1984), while David Rumelhart and Andrew Ortony define schemas as "data structures for representing the generic concepts stored in memory . . . . A schema contains, as part of its specification, the network of interrelations that is believed to generally hold among the constituents of the concept in question." David E. Rumelhart & Andrew Ortony, The Representation of Knowledge in Memory, in Schooling and the Acquisition of Knowledge 99, 101 (Richard C. Anderson et al. eds., 1977). Ziva Kunda refers to "concepts" as a general term that includes both categories and schemas. Kunda writes, "A concept is a mental representation of a category . . . . a class of objects that we believe belong together . . . . It embodies our
Ironic: as we will describe below, one of the key findings of social cognition literature is that the absence of clear concepts and categories increases the cognitive energies required to process information and thus deters individuals from learning new ideas or processing new information. The lack of shared knowledge structures inhibits clear discussion about difficult ideas. Thus, of all social scientific inquiries, social cognition research should be most sensitive to the drawbacks of ambiguity, complexity, and uncertainty. (These insights may help explain both the relatively meager application of such research to disciplines such as the law and the relative prominence of legal theories with seemingly robust categories, schemas, and scripts—topics to which we return.)

To render the relevant literatures more cognitively digestible we will begin by clearly defining our terminology, although we do not expect our definitions to take on much meaning right away. Social psychologists sometimes treat the processes of categorization and application of schemas as one and the same. Here, categorization and the use of categories will refer only to the classification of elements, experiences, instances, or arguments into groups. Once an element is categorized, an individual can apply a schema to it in order to draw inferences and derive predictions. Where categorization focuses on the classification of instances, schemas represent knowledge about the categories and focus on the “application of organized generic prior knowledge to the understanding of new information.” Put slightly differently, where categories are the

knowledge about the category and its members. . . . Psychologists have used many different terms to refer to concepts. Some of these are general enough to refer to just about any concept. These include mental representations, knowledge structures, and schemas. See Ziva Kunda, Making Sense of People, Social Cognition 16–17 (1999). Thus, Kunda does not really address the idea of categorization at all, but focuses on categories with the knowledge that we attach to them (or what we call schemas in this Article).

See, e.g., Hazel Markus & R.B. Zajonc, The Cognitive Perspective in Social Psychology, in 1 The Handbook of Social Psychology 137, 143 (Gardner Lindzey & Elliot Aronson eds., 3d ed. 1985) (citing both categories and schemas as different names given to similar internal cognitive structures).

As we will explain, the categorization process is generally influenced itself by the schemas active in our minds, which is one important reason why scholars often conflate the processes.

While this division is helpful in understanding the cognitive process, it is only a heuristic. As will become clear, the effects of categorization and of the application of schemas are often difficult to disentangle, and, hence, there is necessarily some overlap and repetition in the research attempting to document their effects. Authors often treat categories and schemas as interchangeable for just that reason. Again, however, we will adhere to Fiske and Taylor’s attempt to model them as distinct. See Martha Augustinos & Iain Walker, Social Cognition: An Integrated Introduction 34 (1995).

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Put slightly differently, where categories are the
classifications into which we place the information we encounter, schemas refer to the embodiment of "our knowledge about the category and its members." 116

That distinction between categories and schemas helps make clear what role schemas play in our thinking. Social psychologists Shelley Taylor and Jennifer Crocker describe a schema as

a cognitive structure that consists in part of the representation of some defined stimulus domain. The schema contains general knowledge about that domain, including a specification of the relationships among its attributes, as well as specific examples or instances of the stimulus domain. As such, one of the chief functions of a schema is to provide an answer to the question. [sic] "what is it?" The schema provides hypotheses about incoming stimuli, which include plans for interpreting and gathering schema-related information. 117

Schemas can answer other questions, too, such as "How does it work?," "Why is it here?," and "What will it do?" Martha Augoustinos and Iain Walker explain that "[a] schema is conceptualized as a mental structure which contains general expectations and knowledge of the world." 118 Individuals utilize these mental structures "to select and process incoming information from the social environment." 119 Schemas "guide what we attend to, what we perceive, what we remember and what we infer." 120

B. SCHEMAS CATEGORIZED

People have schemas for everything (from places to arguments to objects), including schemas that are "content-free." 121 An example of content-free schemas are processing rules that specify "the links among elements but not much rich informational content," 122 such as the rule of transitivity that underlies rules of logic. Yet, most empirical social cognition research focuses on schemas for ourselves (self schemas), for other people (person schemas), and for the roles that people assume or are born into (role schemas). In addition, a considerable amount of social

117. Taylor & Crocker, supra note 103, at 91.
118. Augoustinos & Walker, supra note 114, at 32.
119. Id.
120. Id. at 33.
121. Id. at 36; Fiske & Taylor, supra note 111, at 120.
122. Fiske & Taylor, supra note 111, at 120.
cognition research has focused on the event schema, or, as it is more commonly called, the script.

1. Self Schemas

Self schemas, as their name suggests, contain our knowledge and expectations about ourselves, including the traits, dispositions, and characteristics we possess. Individuals can be either schematic or aschematic with regard to particular traits. People are said to be schematic on a trait if the trait is important to them and if they believe that they embody and exhibit one or another form of the trait. People are said to be aschematic on a trait if they “are not invested in, involved with, or concerned about a particular attribute” and they believe it is not self-descriptive. For example, if we think intelligence is an important attribute and we have a clear sense of where we fit along or within the intelligence domain, then we are schematic on intelligence. Such self schemas, as mentioned above, have effects on categorization, memory, and inference about all types of information regarding ourselves.

Self schemas can range from ideological labels, such as conservative and liberal, to distinctions commonly made according to race, gender, and sexual preference. Our Introduction provides several examples of self schemas. At the same time that the pioneering feminists of their day might be schematic on traits that would shock Aristotle and Plato (not to mention Justice Bradley), those very men probably held self schemas of open-mindedness. Similarly, some soldiers in Hitler’s army could be termed schematic on their “patriotism” and aschematic on their “Jewishness,” for they saw themselves along one characteristic rather than another. In addition, many women, internalizing the norms (that is, the role and person schemas) of society that highlighted and essentialized differences in women and men, might have found themselves holding strong self schemas of attributes that were thought to comprise the “female constitution.” Notice that the self schemas individuals rely on are not necessarily accurate. Archie Bunker might consider himself a clear-thinking, unbiased observer, even as his thoughts and responses might suggest otherwise. And legal economists who approach problems through the economist’s script outlined earlier would certainly hold self schemas in which traits such as “rigorous,” “scientifically minded,” and “unbiased” would be prominent.

123. Id. at 183. See also Hazel Markus, Self-Schemata and Processing Information About the Self, 35 J. PERSONALITY & SOC. PSYCHOL. 63, 75–76 (1977).
124. FISKE & TAYLOR, supra note 111, at 184.
As we argued before and in other work, however, the economists’ scripts have themselves been a major source of bias.  

2. Person Schemas

Person schemas represent knowledge structures about other individuals—their characteristics, behaviors, and goals. We use the information contained in those schemas to help guide our categorization, inference, and memory processes with respect to the people we encounter. Two popular types of person schemas include trait schemas and goal schemas. The trait schema focuses on the classification of individuals based on characteristics they hold and on the inferences that we are able to draw based on those traits. “In the language of the lay person… trait terms are used to describe important ingredients of a personality that provide explanations of a person’s behavior, influence our evaluation of the person, and guide our decisions about how to interact with this person.” Thus, “we are more apt to accept a blind date with someone who is described as attractive, friendly, and intelligent than with someone who is described as domineering, humorless, and provincial.” And on that blind date, we are more likely to see our dates as “attractive, friendly, and intelligent” because our expectations direct our attention (at the time and in retrospect) to the features of our dates’ behavior that demonstrate these qualities. Of course, as many who have been on blind dates will attest, even favorable pre-date descriptions are often insufficient to make the experience a good one (a result that itself may be partially the result of event schemas, discussed below).

In our earlier examples, Archie might have a difficult time applying a doctor schema to a woman, even if she exhibits traits that might suggest to most others that such a schema would be accurate—even obvious. Like Archie, Aristotle and Plato might have their own apparently sound person schemas that explain a particular woman’s behavior and guide their interactions with her. Similarly, the traits of Jewish soldiers enabled Hitler

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125. See supra text accompanying notes 92–93. This tendency to see ourselves as unbiased processors of reality is ubiquitous and is itself a bias. Hanson & Yosifon, The Situational Character, supra note 51 (discussing naïve realism).
126. FISKE & TAYLOR, supra note 111, at 118.
128. Id.
129. See infra Part II.B.4.
to generate separate classifications so that he could understand their behaviors.

Goal schemas are simply schemas that we use to guide our categorizations, memories, and inferences based on what we know about a person's goals. For example, in one experiment, subjects watched as a student entered a room in order to register for classes. As the student approached the registration desk, he appeared to accidentally drop some books and papers, pick them up, and successfully register for his classes. Some of the subjects were told that the student's goal was to complete a chemistry degree while others were told that the student's goal was to finish a music degree. Depending on what the subjects were told, they tended to create schema-consistent memories. For instance, subjects who believed the goal of the student was to complete a music degree recollected that the student dropped sheet music and also that he registered in a few music classes.

Told that the surgeon in the riddle cannot achieve the goal of operating on the patient because the patient is a son, Archie's goal schema is unable to guide him to the correct answer; told that a Jew's goal is to fight for his army, Hitler construes him to be sympathetic to his cause and may infer additional "militaristic" characteristics about the individual. Person schemas help us to categorize, remember, and draw inferences about the characteristics of the people we observe, though (as the examples above suggest) the person schema may result in very misleading conclusions.

As the examples in this section indicate, person schemas can be applied at various levels, from a single individual to groups, classes, categories of persons, and all humans. Indeed, the tendency to see people according to traits and goal schemas is itself a manifestation of a more general (and often quite biasing) tendency to attribute behavior to dispositions rather than situation.

131. See id. at 38.
132. See id. at 38-39.
134. See supra note 51.
3. Role Schemas

Role schemas help to organize our knowledge about "the set of behaviors expected of a person in a particular social position." Such schemas can apply to roles that are, for instance, achieved, ascribed, or acquired at birth. Like self and person schemas, role schemas help us to make sense of and predict people's characteristics and behaviors. Role schemas aid us in knowing what to expect and what not to expect from, for example, a doctor. From what other stranger would we be unsurprised to be asked to "say 'ahhhhhhh'" or to disrobe? And yet most of us would be shocked to have a doctor ask to see our tax returns, forms that we would eagerly turn over to an accountant. Archie is as befuddled by the idea of a women surgeon as Justice Bradley is by the idea of a women lawyer.

Role schemas and person schemas have been the subject of extensive study due to a general interest in stereotypes. Stereotypes organize "people's expectations about other people who fall into certain social categories." Our schemas for surgeon and women yield(ed) categories—stereotypes—of each that are mutually exclusive. The stereotypical surgeon is (was), among other things, a man, and the stereotypical woman is (was) not a surgeon. Role schemas and person schemas are by no means applied only to humans. The same sorts of schemas apply to all sorts of institutions and entities that we tend to dispositionalize, from corporations to nations, and from administrative agencies to interest groups. Thus, just as Justice Bradley's schemas clearly separate the roles of men and women, most policy analysts have equally robust role schemas for market actors and regulators.

4. Event Schemas (Scripts)

A fourth type of schema is an event schema or, alternatively, a script. Scripts help us to understand the different steps or sequence of events involved in a given process. Thus, readers are struck by a law review article devoid of footnotes, and law review writers buck that script at their peril. Similarly, there is a three-step schema for doing law and economics scholarship—no matter how many footnotes may be involved. Outside

135. Fiske & Taylor, supra note 111, at 119.
136. See id.
137. See id.
138. Id.
139. Chen & Hanson, supra note 90, at Part II (describing the market and regulatory schemas in detail).
140. See supra text accompanying notes 77–85.
legal academia, most of us would be pleasantly surprised by a doctor who greeted us in the waiting room and invited us back personally to the examination room and would be taken aback by a doctor who began the examination in the waiting room—even if unoccupied.

Similarly, people are generally familiar with a restaurant script, which contains information that helps us predict and understand the sequence of events. In one experiment, subjects were asked to list the twenty most important events in going to a restaurant. Although there was variation in the answers, over seventy percent of the subjects included the following common steps: sit down, look at the menu, order, eat, pay the bill, and leave. Such a finding is unsurprising, indicating the extent to which the restaurant script is ingrained in all of us. Those familiar with the restaurant industry know that one of the initial challenges for fast food chains eager to lower labor costs was to train customers to bus their own tables. Doing so was difficult because of the well-established script that left busing to restaurant employees or, more specifically, to “busboys.”

An understanding of scripts may enable us to understand better the things we see. Scripts may help us understand which jokes will be funny and which ones will fall flat. For not only do good jokes, such as Liebman’s, often rely on a sudden shift of schemas, good jokes may themselves follow a particular script. Jennifer Cooper finds evidence that jokes that people find especially funny will often follow their own schema, including three elements: premise distancing, in which listeners are introduced to “obviously fictitious characters, times or locales”; setup parsimony, in which an “incongruity is apparent and remains unresolved long enough to build up tension in the listener”; and, finally, punch line closure. As Cooper describes, “The punchline must unambiguously deliver the specific information needed to resolve the incongruity or

143. See Eric Schlosser, Fast Food Nation 20 (2001). Another challenge was to get customers to the restaurant in the first place. Post World War II schemas saw women in the kitchens of their suburban homes, doing what women do: cooking nutritious meals for their families. According to folk wisdom, McDonalds was successfully chipping away at those schemas through its early ad campaign slogan: “You deserve a break today.”
conflict.”

Jokes following scripts that include the three elements are judged to be more humorous than those that do not.

Scripts are in some ways like recipes—helping us interpret both the things we see and the things we do not see. If we observe a person paying a bill and leaving a restaurant, the familiar restaurant script triggers a knowledge of earlier events that have happened: the customer has ordered, been served, and eaten food. When an economist presents a theory, those who are familiar with the economist’s script need not have seen its analysis of distributional considerations: our script fills in the blanks.

Yet, like recipes we know well, we sometimes find ourselves applying or following our most ingrained scripts without thinking. In her analysis of “mindful” thinking, Ellen Langer explains,

The grooves of mindlessness run deep. We know our scripts by heart. In the routine of daily life we do not notice what we are doing unless there is a problem. Locking ourselves out of a car or throwing socks in the garbage instead of the laundry basket jolts us awake.

Thus, at the same time that scripts can help us ignore what we do not see, they also may lead us to ignore things that we should see. Langer observes that

in cooking we tend to follow recipes with dutiful precision. We add ingredients as though by official decree. If the recipe calls for a pinch of salt and four pinches fall in, panic strikes, as though the bowl might now explode. Thinking of a recipe only as a rule, we often do not consider how people’s tastes vary, or what fun it might be to make up a new dish.

C. SCHEMAS SCHEMATIZED

1. Schemas and the Processing of Information

As we have been asserting, schemas have powerful effects. They help us organize, find meaning in, and make predictions about our environs

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145. See id.
146. See id.
147. ELLEN LANGER, MINDFULNESS 43 (1989).
148. See id. Langer describes one incident of mindfulness:

Once, in a small department store, I gave a cashier a new credit card. Noticing that I hadn’t signed it, she handed it back to me to sign. Then she took my card, passed it through her machine, handed me the resulting form, and asked me to sign it. I did as I was told. The cashier then held the form next to the newly signed card to see if the signatures matched.

Id. at 12–13.
149. Id. at 16.
including the actions and behaviors of others.\textsuperscript{150} In doing so, schemas "influence the encoding of new information, memory for old information, and inferences where information is missing."\textsuperscript{151} Indeed, as Hazel Markus and Robert Zajonc explain, the influence of schemas on our systems for processing information is ubiquitous:

In general, information processing may be seen as consisting of schema formation or activation, of the integration of input with these schemas, and of the updating or revision of these schemas to accommodate new input. Accordingly, it should be [and is] possible to observe the influence of schemas at every stage of information processing (e.g., encoding, storage, retrieval, inference), at all levels of processing (conscious, preconscious), and on all parameters of the response (speed, confidence, accuracy, etc.).\textsuperscript{152}

In short, schemas interact with our information processing at every step, at all levels, and on every parameter.

To better appreciate those interactions, it may be helpful to view the various stages of information processing with the aid of the following visual schematic.

**FIGURE 1. Information Processing Flow\textsuperscript{153}**

Figure 1 illustrates various steps in information processing, beginning with the search for, or acquisition of, new information based on individuals' attention. After focusing on particular pieces of information, individuals then categorize the information. Once it has been attended to and categorized, they can then apply a schema to the information, enabling them to draw inferences and store the information and related inferences in short- and long-term memory.

\textsuperscript{150} See Markus & Zajonc, supra note 112, at 150.

\textsuperscript{151} See also Fiske & Taylor, supra note 111, at 122.

\textsuperscript{152} Markus & Zajonc, supra note 112, at 150. See also Fiske & Taylor, supra note 111, at 122 ("Once cued, schemas affect how quickly we perceive, what we notice, how we interpret what we notice, and what we perceive as similar and different. Thus, another principle of schematic encoding is its operation from the earliest moments of perception.").

\textsuperscript{153} We have adapted this figure from Hastie, supra note 111, at 45.
Of course, this is just a rough schematic and thus may at times be more misleading than it is illuminating. For example, the first box, labeled “Information,” might suggest, wrongly, that the information we select to focus on and process is nicely packaged and finite (inside the box); yet information is all around us, coming from every direction and through a variety of mediums. That we tend to see only a finite portion of it (as the box indicates) reflects more the operation of our mind than it does the operation of the world that our mind is attempting to understand. Indeed, narrowing the field of information to a tractable and revealing subset is one of the most important functions of the attention and categorization stage.

Also misleading is the diagram’s suggestion that schemas play a role in only one stage of information processing. As we shall see, although individuals often rely on categories to activate schemas, the method of categorization and the choice of categories is significantly influenced by the schemas that are available and active in people’s minds. In that way, schemas affect each step of the process.

The shaded arrow surrounding the information processing flow depicted in Figure 1 is meant to illustrate a cognitive phenomenon we term “cognitive inertia”—the tendency or motive to move forward through the cognitive process in the direction indicated. As we describe later in more detail, there are many factors that can slow down this process or even cause an individual to embark on a separate process. But the shaded arrow is a reminder that individuals, depending on a variety of factors—such as their cognitive load, motivations, and affect—will generally process the information as efficiently and quickly as possible, choosing the cognitive path of least resistance. More specifically, individuals will, wherever possible, apply active schemas and categories that do not require them to search their inactive stores for more appropriate schemas or generate new schemas that are more appropriate for the information before them.

You can gain a sense of the effect of this tendency in your own mind by taking a simplified (and black-and-white) version of the famous “Stroop test.” When most of us see words in print, we cannot help but read them.

154. John Ridley Stroop identified and made famous this phenomenon in 1935. See J. Ridely Stroop, Studies of Interference in Serial Verbal Reactions, 18 J. EXPERIMENTAL PSYCHOL. 643 (1935), available at http://www.psychclassics.yorku.ca/Stroop/ (last visited Sept. 20, 2004). See also STANLEY COREN & LAWRENCE M. WARD, SENSATION AND PERCEPTION (1989) (providing an accessible introduction to basic physiology and sensory responses). We have had to adapt the traditional colorized version of the Stroop test for this noncolorized publication. Our version captures the power of automaticity pretty well, but readers interested in the more colorful version of the classic test and some additional explanation for the effect can find it on the internet. See, e.g., Stroop Task, http://www.snre.umich.edu/eplab/demos/st0/stroopdesc.html (last updated May 24, 2001).
Our reading of familiar words is quite automatic and, to some degree, involuntary. (If you doubt this, try focusing on a word without reading it.) The ability to name colors—or, in this case, name font effects—is also fairly automatic, but not as automatic as reading simple words. The Stroop Test helps reveal the power of automaticity and make evident the sort of cognitive energy that must be expended to resist it.

Ready? While timing yourself, read out loud the words by column in the table below.

**TABLE 1. The Stroop Test I**

<table>
<thead>
<tr>
<th>CAPS</th>
<th>Underline</th>
<th>Italic</th>
<th>Bold</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAPS</td>
<td>Underline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bold</td>
<td>Underline</td>
<td>Italic</td>
<td></td>
</tr>
<tr>
<td>Italic</td>
<td>Underline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Italic</td>
<td>CAPS</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now, if you are still playing, record your time and prepare to do something quite similar in the following table. Only this time, say out loud the font effect in which each word is written and not the words themselves.

**TABLE 2. The Stroop Test II**

<table>
<thead>
<tr>
<th>Cat</th>
<th>WISH</th>
<th>Shoe</th>
<th>Screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail</td>
<td>Italic</td>
<td>Hat</td>
<td>FACE</td>
</tr>
<tr>
<td>FISH</td>
<td>Mouse</td>
<td>Hand</td>
<td>Card</td>
</tr>
<tr>
<td>Watch</td>
<td>Phone</td>
<td>BAG</td>
<td>Wire</td>
</tr>
<tr>
<td>DESK</td>
<td>Ear</td>
<td>Pin</td>
<td>Dog</td>
</tr>
</tbody>
</table>

Again, write down your time. Finally, say out loud the effect applied to each word's font in the following table. Do not say the font effect that the word spells.

**TABLE 3. The Stroop Test III**

<table>
<thead>
<tr>
<th>Caps</th>
<th>UNDERLINE</th>
<th>Italic</th>
<th>Bold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caps</td>
<td>Red</td>
<td>Bold</td>
<td></td>
</tr>
<tr>
<td>BOLD</td>
<td>Italic</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underline</td>
<td>Underline</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ITALIC</td>
<td>Underline</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Compare your time on the last task to the two previous times. If you are like most people, you slowed down a little for the second table and
slowed down further, and even found somewhat challenging, the seemingly simple task in the third table.\textsuperscript{155} Reading familiar words takes less cognitive effort than naming font effects. Indeed, it is so effortless that our mind does it even when we would prefer that it not. In the last table, that more automatic process of reading has the effect of interfering with our goal of naming font effects. And to get through the list, many people have to actively resist the "top-down" process of reading and work hard to do the more cognitively taxing "bottom-up" process of identifying the font effect.\textsuperscript{156}

Schemas are often associated with top-down or theory-driven cognitive processes, or "processes heavily influenced by one's organized prior knowledge, as opposed to processes that are more bottom-up or data-driven."\textsuperscript{157} Theory-driven processes rely on "prior expectations, preconceptions and knowledge about the social world in order to make sense of new situations and encounters."\textsuperscript{158} In this way, schemas have the useful effect of making more automatic what would otherwise be cognitively effortful. Unfortunately, though, they also interfere often with what we are seeing and lead to significant judgmental biases. We do not just see our world; we see our world through a distorting filter of what we want and expect to see. Like rose-tinted glasses and a jaundiced eye or even a closed mind, schemas color our reality—and applying different schemas to the same events typically transforms the construals and memories of those events.

In the sections that follow, we analyze in more detail the effects of schemas on each of the key steps of information processing: (1) attention and categorization, (2) inference and problem solving, and (3) memory and retrieval.\textsuperscript{159}

\textsuperscript{155} Stroop found that his subjects' mean response times rose by seventy-four percent when they were presented with the last category. See \textit{Stroop Test}, at http://psychclassics.yorku.ca/Stroop (last visited Sept. 25, 2004).

\textsuperscript{156} Bottom-up processes look to the particular features of the underlying stimuli, while top-down processes rely on the activated schemas informed by experience and expectations. The former is analogous to assembling a puzzle without the box top (that is, without knowing what the puzzle will look like in final form), and the latter is like assembling the same puzzle with the box top.

\textsuperscript{157} \textit{Fiske} \& \textit{Taylor}, supra note 111, at 98.

\textsuperscript{158} \textit{Augustinos} \& \textit{Walker}, supra note 114, at 43.

\textsuperscript{159} Although authors generally separate out the effects of schemas on attention and retrieval, the same experiments are sometimes used to help understand both of the stages. Thus, researchers such as Taylor and Crocker simply distinguish schema effects on the attention/encoding and memory functions from the effects on inference. See \textit{Taylor} \& \textit{Crocker}, supra note 103, at 93–102. We will distinguish between attention and memory effects, but overlaps are inevitable.
a. Schemas and the Attention and Categorization Process

One of the first things most of us do when entering a room (or any setting) is to focus on a subset of objects, features, and movements that occupy or characterize that room. As with the graduate student’s office depicted below, there are typically an innumerable, perhaps infinite, number of things that we might focus on or attend to, making an examination of all of them impossible. Thus, our focus is—and must be—limited.

Once we have focused on certain things, we begin to categorize and encode them into our minds. Because this categorization plays a pivotal role in the subsequent application of schemas, understanding this stage of the process as well as the influence that our active schemas will have on this stage is critical. We will first provide some background about the categorization process itself and a brief summary of the competing theories purporting to explain how the process actually works.

FIGURE 2. A Graduate Student’s Office

160. Encoding is a process by which an “external stimulus” is converted into an “internal representation.” See FISKE & TAYLOR, supra note 111, at 245. In this Article, we focus on the categorization function of the encoding process, since it is central to the subsequent application of schemas. See id. at 246.

161. This photograph originally appeared in William F. Brewer & James C. Treyens, Role of Schemata in Memory for Places, 13 COGNITIVE PSYCHOL. 207 (1981). For a description of William Brewer and James Treyens’s experiment using this office, see infra text accompanying notes 275–76.
i. The Process of Categorization

Central to the effects of schemas is the process of categorization, which is often thought to precede the application of schemas. Before individuals can draw inferences (that is, before they can apply a chosen schema to the concepts before them), they generally need to categorize or label the subjects, people, situations, objects, or arguments. Such categories enable us to classify information so that we can access and utilize that information effectively and efficiently. The process of categorization, in other words, enables individuals to impose an initial order on the information with which they are confronted. "To categorize is to render discriminably different things equivalent, to group the objects and events and people around us into classes, and to respond to them in terms of their class membership rather than their uniqueness."162

And so, when viewing the following image, most of us have categories that activate spontaneously. We see a "car" or "truck" or "SUV," even when the particular size and contours of this instantiation of "automobile" may be unfamiliar.

FIGURE 3. A Car?

Similarly, instead of an infinite set of names for colors to identify the infinite gradations in the spectrum, we rely on a dozen or two categories to gather the variation into meaningful, manageable groupings—red, yellow, green, tan, purple, khaki, and so on. What we might call green could include a wide range of colors that in most instances makes no sense to

distinguish. Green is close enough. Thus, we view even our colors through
tinted glasses.

The categorization process, which is generally considered an
automatic (or unconscious) cognitive process, affects how we see (or do
not see) colors or shades of gray and virtually all types of information that
we encounter:

In moving about the world, we automatically categorize people, animals,
and physical objects, both natural and man-made. This sometimes leads
to the impression that we just categorize things as they are, that things
come in natural kinds, and that our categories of mind naturally fit the
types of things there are in the world. But a large proportion of our
categories are not categories of things; they are categories of abstract
entities. We categorize events, actions, emotions, spatial relationships,
social relationships, and abstract entities of an enormous range:
governments, illnesses, and entities in both scientific and folk theories,
like electrons and colds. Any adequate account of human thought must
provide an accurate theory for all our categories, both concrete and
abstract.163

As Ziva Kunda explains, “[c]lassification is important,” not just
“because it allows us to treat different objects as the same,” but also
because “it enables us to use our knowledge about categories to make
sense of individual members of these categories.”164 In that way,
categorization helps to give “meaning to the environment,” facilitate
“communication between individuals sharing the same system of
categories,”165 “integrate new information with older information,” and

163. GEORGE LAKOFF, WOMEN, FIRE, AND DANGEROUS THINGS: WHAT CATEGORIES REVEAL
164. KUNDA, supra note 111, at 18.
165. This benefit is difficult to overestimate. Shared schemas are a pivotal part of our shared
experiences—from our architecture to our language, we are surrounded by the interaction of shared
categories, schemas, and scripts. Our survival may well depend upon them. To gain some sense of their
importance, consider the layout and categories of typical book stores, designed to assist customers to
find the books they are looking for, or to come across books they did not know they wanted, but now
do: New Releases, Best Sellers, History, Biography, Children’s Books, Literature, and so forth. Of
course, there are many other ways of potentially categorizing books. They might be arranged by size or
weight or by the number of syllables they contain. These categories would often be quite unhelpful,
though, because they do not correspond well with the reasons why people want to purchase particular
books. But there are other categories that, while they do nicely capture what moves people to select a
book, are not shared and thus would not work well for arranging a bookstore. Italo Calvino, in If on a
Winter’s Night a Traveler, has imagined just such a categorical system in his description of how a
person found a particular book:

In the shop window you have promptly identified the cover with the title you were
looking for. Following this visual trail, you have forced your way through the shop past the
thick barricade of Books You Haven’t Read, which were frowning at you from the tables and
shelves, trying to cow you. But you know you must never allow yourself to be awed, that
make the world more predictable. The process of categorization is a critical step in the cognitive process, for "[c]ategories activate schematic knowledge."

Before we know how to interact with a man in a jump suit and an oily rag in his pocket, for example, we might categorize him as a gas station attendant—an increasingly rare sight. Upon such a categorization, we can apply our knowledge about gas station attendants to gain a better understanding of what he is good at doing, what he will do, and how to interact with him. Similarly, once we categorize the item in the Figure above as a "car" or "SUV," we will then have a good idea of how to

among them there extend for acres and acres the Books You Needn't Read, the Books Made For Purposes Other Than Reading, Books Read Even Before You Open Them Since They Belong To The Category Of Books Read Before Being Written. And thus you pass the outer girdle of ramparts, but then you are attacked by the infantry of the Books That If You Had More Than One Life You Would Certainly Also Read But Unfortunately Your Days Are Numbered. With a rapid maneuver you bypass them and move into the phalanxes of the Books You Mean To Read But There Are Others You Must Read First, The Books Too Expensive Now And You'll Wait Till They're Remaindered, The Books ditto When They Come Out In Paperback, Books You Can Borrow From Somebody, Books That Everybody's Read So It's As If You Had Read Them, Too. Eluding these assaults, you come up beneath the towers of the fortress, where other troops are holding out:

the Books You've Been Planning To Read For Ages,
the Books You've Been Hunting For Years Without Success,
the Books Dealing With Something You're Working On At The Moment,
the Books You Want To Own So They'll Be Handy Just In Case,
the Books You Could Put Aside Maybe To Read This Summer,
the Books You Need To Go With Other Books On Your Shelves,
the Books That Fill You With Sudden, Inexplicable Curiosity, Not Easily Justified.

Now you have been able to reduce the countless embattled troops to an array that is, to be sure, very large but still calculable in a finite number; but this relative relief is then undermined by the ambush of the Books Read Long Ago Which It's Now Time To Reread and the Books You've Always Pretended To Have Read And Now It's Time To Sit Down And Really Read Them.

With a zigzag dash you shake them off and leap straight into the citadel of the New Books Whose Author Or Subject Appeals To You. Even inside this stronghold you can make some breaches in the ranks of the defenders, dividing them into New Books By Authors Or On Subjects Not New (for you or in general) and New Books By Authors Or On Subjects Completely Unknown (at least to you) . . .


166. See JACQUES-PHILIPPE LEYENS, VINCENT YZERBYT & GEORGES SCHADRON, STEREOTYPES AND SOCIAL COGNITION 129 (1994). As will be clear from our discussion of schemas, many of the functions of categories are also functions of schemas.
167. Id. at 130.
168. FISKE & TAYLOR, supra note 111, at 105.
169. See id.
operate it and where to begin looking for the gas tank, glove compartment, and ignition, for example. And we will not be surprised to find the glove compartment gloveless. The initial process of categorization is thus critical to the subsequent application of schemas. Categorization is therefore understood as the central function in the first step of our information process.

In the categorization process, depicted in Figure 4 below, individuals strike a balance between less cognitively taxing reliance on active categories versus the more cognitively demanding task of incorporating individuating attributes. Once individuals have performed an initial categorization of the information before them, they will seek to confirm that initial categorization; if they are unable to do so, then they may search for a new and more appropriate category or rely on a subcategory. If this recategorization fails also, then the individual will utilize “fully individuated, attribute-by-attribute, piecemeal integration processes.” At the heart of this process lies the particular means by which an individual categorizes information, the subject of the next sections.

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171. Susan T. Fiske & Steven L. Neuberg, A Continuum of Impression Formation, from Category-Based to Individuating Processes: Influences of Information and Motivation on Attention and Interpretation, in 23 ADVANCES IN EXPERIMENTAL SOCIAL PSYCHOLOGY 1, 2 (Mark P. Zanna ed., 1990).

172. See infra Part II.C.2.a.iv.(g)(iv.) (discussing the process of subcategorization or subtyping).

Social psychologists have long been developing, testing, and altering their theories of categorization. Beginning with what is now called the "classical" view of categorization, the process seemed so obvious and logical that it was taken as true with little evidence to support it. This classical view assumed that categories were clearly defined and shared common attributes that were "necessary and sufficient" to determine inclusion or exclusion. Most psychologists considered the categories to be real—often natural—and valid group entities in the social world. Thus, for example, just as something might be classified as a bird if it had wings, a beak and feathers, Justice Bradley might naturally categorize an individual who is "timid" and "delicate" as a woman, and Hitler naturally would categorize someone who is "militaristic" as a German.

174. We have adapted this figure from Hastie, supra note 111, at 45, augmenting it with processes from Fiske & Neuberg, supra note 171, at 5.
176. AUGUSTINOS & WALKER, supra note 114, at 269.
Later research uncovered much evidence to undermine the classical view, including evidence that the clarity suggested by the classical view simply does not exist.\textsuperscript{177} Category boundaries are "fuzzy," and it is "not always clear which instances belong in the category."\textsuperscript{178}

Indeed, that is the sort of fuzziness that Honda is attempting to create in the vehicle pictured in Figure 3 above. Instead of falling clearly within a single category of vehicle, it was designed to, and is being marketed as, having \textit{elements} of several. As one review puts it:

Sort of like a traditional pickup and somewhat like a sport-utility vehicle, the Honda Element is an all-new model that applies an innovative approach to functionality. The Element aims to accommodate a bit of every demographic with a pickup’s hard flat floor, an enclosed rear area like an SUV, fuel economy and handling performance like a car, available 4-wheel-drive and a price starting around $16,000.\textsuperscript{179}

Social psychologists have discovered, as Honda has demonstrated, the socially constructed nature of most categories: our categories are not, as has been assumed, entirely naturally occurring groups. Instead, external factors play a large role in the categorizations themselves (not simply in the information that is attached to these categories).\textsuperscript{180} As each criticism undermined the classical view, other theories began to gain currency.

(b) The Prototype View of Categorization

In the 1970s, Eleanor Rosch pioneered the first major alternative theory and full challenge to the classical view: prototype theory.\textsuperscript{181} Rosch tested and largely rejected two implications of the classical theory: first, that all the members of categories are equally good examples of the category, since they all share the same attributes; and second, that categories [are] independent of the peculiarities of any beings doing the categorizing; that is, they ... [do] not involve such matters as human neurophysiology, human body movement, and specific human capacities to perceive, to form mental images, to learn and remember, to organize the things learned, and to communicate efficiently.\textsuperscript{182}

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{177} \textit{See, e.g.,} Carolyn B. Mervis & Eleanor Rosch, \textit{Categorization of Natural Objects}, 32 ANN. REV. OF PSYCHOL. 89 (1981); Eleanor Rosch, \textit{Principles of Categorization}, in \textit{COGNITION AND CATEGORIZATION} 41, 41–43 (Eleanor Rosch & Barbara B. Lloyd eds., 1978).
\item \textsuperscript{178} \textit{Fiske & Taylor, supra} note 111, at 106.
\item \textsuperscript{180} \textit{Augoustinos & Walker, supra} note 114, at 269.
\item \textsuperscript{181} \textit{Lakoff, supra} note 163, at 39.
\item \textsuperscript{182} \textit{See id.} at 7.
\end{itemize}
\end{footnotesize}
Rosch found, among other things, evidence that some things were more "representative" of a category than others, a conclusion that seemed inconsistent with the idea that a category's members either do or do not meet particular criteria for membership.183

The prototype view suggested that category members do not have necessary and sufficient attributes, but that categorization is an inexact process, in which elements of concepts often fall within "fuzzy boundaries."184 The prototype theory hypothesized that people think not in terms of clear categories, but in terms of an average category member against which potential members were then compared. Rosch's research suggested that people use the most typical or prototypical instance—the central tendency—to represent the category.185 Under this new view, "[p]eople... decide if a new instance fits the category by assessing its similarity to the prototype."186 "The more features an instance shares with other category members, the more consistently, consensually, and quickly it is identified as a category member."187 As Susan Fiske and Shelley Taylor summarize,

The perception that some instances are more typical than others led to the idea that instances range from being quite typical to atypical, with a most typical or prototypical instance best representing the category. The prototype is the 'central tendency' or average of the category members.

... People then decide if a new instance fits the category by assessing its similarity to the prototype.188

Thus, the prototype view is based on the idea that individuals rely on abstract representations of categories—for example, the average student,

183. Eleanor Rosch, Cognitive Reference Points, 7 COGNITIVE PSYCHOL. 532, 544–45 (1975). Some birds, for instance, are more birdlike than others.
184. FISKE & TAYLOR, supra note 111, at 106. See also Martha Chamallas, Deepening the Legal Understanding of Bias: On Devaluation and Biased Prototypes, 74 S. CAL. L. REV. 747, 779–80 (2001) (describing the fuzziness of categories and some of the effects that this may have on laws addressing sexism and racism).
185. See FISKE & TAYLOR, supra note 111, at 106. See also Barbara Hayes-Roth & Frederick Hayes-Roth, Concept Learning and the Recognition and Classification of Exemplars, 16 J. VERBAL LEARNING & VERBAL BEHAV. 321 (1977) (providing evidence that categorization is a less exact process than the classical view supposed); Michael I. Posner & Steven W. Keele, On the Genesis of Abstract Ideas, 77 J. EXPERIMENTAL PSYCHOL. 353 (1968) (same); Michael I. Posner & Steven W. Keele, Retention of Abstract Ideas, 83 J. EXPERIMENTAL PSYCHOL. 304, 304–08 (1970) (same).
187. FISKE & TAYLOR, supra note 111, at 106–07.
188. Id.
the average bird, the average woman, or the average Jew—to guide their attempts to categorize the information before them.189

Rosch and others found support for the prototype view of categorization in a number of experiments in which subjects appeared to categorize based on typicality rather than on meeting certain criteria.190 In one experiment, Rosch asked subjects to rate things based on their typicality to a specific category on a scale of 1 to 7, with 1 being very typical and 7 being very atypical.191 Consistent with the theory, some items were rated more typical than others. For example, a gun was considered a very typical weapon (with an average ranking of 1.03), while a pitchfork was not (4.67); comparatively, a robin was considered a very typical bird (1.02) while a chicken was not (4.02).192 Similarly, subjects in a study by Lance Rips, Edward Shoben, and Edward Smith viewed robins as more bird-like than chickens, as detailed in Table 4 below.193

### Table 4. Typicality Ratings for Birds and Mammals194

<table>
<thead>
<tr>
<th>Instance</th>
<th>Rating</th>
<th>Instance</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Robin</td>
<td>3.00</td>
<td>Deer</td>
<td>2.83</td>
</tr>
<tr>
<td>Sparrow</td>
<td>3.00</td>
<td>Horse</td>
<td>2.76</td>
</tr>
<tr>
<td>Bluejay</td>
<td>2.92</td>
<td>Goat</td>
<td>2.75</td>
</tr>
<tr>
<td>Parakeet</td>
<td>2.83</td>
<td>Cat</td>
<td>2.67</td>
</tr>
<tr>
<td>Pigeon</td>
<td>2.83</td>
<td>Dog</td>
<td>2.67</td>
</tr>
<tr>
<td>Eagle</td>
<td>2.75</td>
<td>Lion</td>
<td>2.67</td>
</tr>
<tr>
<td>Cardinal</td>
<td>2.67</td>
<td>Bear</td>
<td>2.58</td>
</tr>
<tr>
<td>Hawk</td>
<td>2.67</td>
<td>Rabbit</td>
<td>2.58</td>
</tr>
<tr>
<td>Parrot</td>
<td>2.58</td>
<td>Mouse</td>
<td>2.25</td>
</tr>
<tr>
<td>Chicken</td>
<td>2.00</td>
<td>Pig</td>
<td>2.17</td>
</tr>
<tr>
<td>Goose</td>
<td>2.00</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In another experiment, Rosch provided a category to subjects and then asked them to compose a sentence including the category. After sentences

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189. See Schneider, supra note 110, at 51.
190. The following examples are summarized in Anderson, supra note 141, at 137-40.
193. Lance J. Rips, Edward J. Shoben & Edward E. Smith, Semantic Distance and the Verification of Semantic Relations, 12 J. VERBAL LEARNING & VERBAL BEHAV. 1, 4 (1973). In this study, the higher the score, the greater the typicality.
194. See id. at 5.
were created, a second group of subjects were asked to rate how sensible or "natural" the resulting sentences were when the category name was replaced with a specific member of that category. For example, when provided with the category of "bird," the first group of subjects composed sentences like the following: "Twenty or so birds often perch on the telephone wires outside my window and twitter in the morning." More typical members of the categories—such as, in Table 4 above, a sparrow—received higher "sensible" ratings than less typical members, such as a turkey.

Lila and Henry Gleitman have similarly discovered that people believe that "7 is a better 'odd number' than, say, '51' and that '4' is a more typical (hence better) even number than, say, '196," even though people understand that 63 is an odd number and 184 is an even number.

One important way in which items can be more or less similar to a categorical prototype has to do with whether the boundaries of categories are more or less fuzzy. For many less typical members, there is often disagreement not only on the degree of typicality of the item, but also on whether the item belongs in another category altogether. Michael McCloskey and Sam Glucksberg found significant disagreement about category membership—from whether a stroke is a disease to whether pumpkin is a fruit. The fuzziness of category boundaries is also well illustrated in an experiment conducted by William Labov. Labov presented subjects with illustrations of a cup in which the width of the cup was gradually increased. People had a difficult time agreeing when the category of "cup" gave way to the category "bowl." Moreover, when people were asked to imagine that the cup/bowl was filled with mashed potatoes and placed on a table, there was a dramatic shift in perception across all subjects, with fewer percentages responding that it was a cup at all widths. Context, it is clear, matters a great deal, particularly when category boundaries are ambiguous.

196. Id.
197. Id.
201. See id.
202. See id.
(c) Other Theories of Categorization

Some recent critics of the prototype view have advanced two alternative theories for the categorization process—the "ideals or extremes theory" and the "exemplar theory"—both of which are gaining some ground. The theories share some common characteristics. The ideals or extremes theory assumes that categories are defined not by some average or central tendency, but either by ideal cases or by extreme cases. According to the exemplar theory, categorization can best be described as represented by specific and often varying instances rather than some average or typical prototype. The exemplar view of categorization differs from the prototype view in its focus on a set of examples that together help guide categorization, rather than a single, typical member. To decide whether an item fits into a particular category, a person will compare and contrast the item to the full set of the categorical examples or exemplars.

While there remains disagreement over the exact process of categorization, most researchers agree that the classical view is lacking. In its place, the prototype view has claimed the most proponents. In general, however, there is likely to be some truth to all of the alternatives to the classical theory—individuals likely rely on some combination of the prototype, extremes or ideals, and exemplars categorization processes.

Archie Bunker, puzzled by how the patient could be the surgeon's son since his father was killed in the car accident, is relying on categories developed in a world where all of the surgeons Archie has encountered in life and in the media have been male. The prototypical surgeon, as well as the ideals, extremes, and exemplars, are, when viewed from Archie's chair, all male. The power of the category, then, is not just in the way that it simplifies Archie's thinking within the categories, but also in the way that it renders more difficult his thinking outside of these categories. And, of course, categories have the same general effects on us all.

204. See id. at 109 (citing L.W. Barsalou, Ideals, Central Tendency, and Frequency of Instantiation as Determinants of Graded Structure in Categories, 11 J. EXPERIMENTAL PSYCHOL.: LEARNING, MEMORY, AND COGNITION 629 (1985)).
205. FISKE & TAYLOR, supra note 111, at 112 (citing Lee Brooks, Nonanalytic Concept Formation and Memory for Instances, in COGNITION AND CATEGORIZATION 169 (Eleanor Rosch & Barbara B. Lloyd eds., 1978)); SMITH & MEDIN, supra note 175, at 143–44.
206. See Schneider, supra note 110, at 51–52.
207. See FISKE & TAYLOR, supra note 111, at 115.
ii. Category Organization

Social cognition indicates that in addition to relying on categories to classify incoming information, people often organize these categories hierarchically, "with categories becoming more inclusive as they become broader." As depicted in Figure 5, the more specific categories of our hierarchical organization contain characteristics in common with their more general counterparts, but not necessarily the other way around.

**Figure 5. Example of Hierarchical Category Organization**

```
Committed (to a belief or cause) person

  Religious devotee
    Buddhist monk
  Social activist
    Catholic nun
    Hasidic Jew
    Save the whale campaigner
    Fighter against child abuse
    Antwerp protester
```

Thus, the characteristics inherent in the religious devotee would be reasonably true of Buddhist monks, Catholic nuns, or Hasidic Jews. But what is true for Hasidic Jews is not necessarily true of all religious devotees: a yarmulke has little in common with a habit or a shaven head, other than its location.

iii. The Effects of Schemas on the Attention and Categorization Processes

While the categorization process discussed above plays a central role in subsequent schema application, the influence is not only one-way. Schemas and, in particular, our active schemas, exert an important influence on categorization and the overall attention process, as depicted in Figure 6.
In this section, we consider primarily the effects of schemas on attention, though it should be clear that by influencing the attention process, they exert an influence on the categorization function. According to Markus and Zajonc, "[s]chemas influence what information will receive attention and how it will be encoded and organized."\(^{212}\) The attention step occurs when individuals enter a crowded room and, depending on what they are looking for—a friend or something to drink, for instance—their attention is guided in different ways.\(^{213}\) The categorization step occurs at the same time that the individuals' attention is moving around the room, settling on some things and not others. Each thing that the individuals focus attention on, they categorize and encode.\(^{214}\)

Schemas play a significant role in the attention step as well as the categorization step. In the attention step, according to David Rumelhart, "schema[s] guide our information seeking. Not only do schema[s] tell us what to see, but they also tell us where to see it."\(^{215}\) We look for things where our schemas tell us they should be found. More generally, we are more likely to attend to information that is more relevant and ignore information that is less relevant, as determined by our schemas.\(^{216}\) As Kunda puts it, "We may notice, for example, that Alex pushed John but not notice what Alex was wearing at the time or where exactly he touched

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211. We have adapted this figure from Hastie, supra note 111, at 45.
212. Markus & Zajonc, supra note 112, at 151.
213. Schneider, supra note 110, at 49.
214. Id.
216. Fiske and Taylor explain, for example, that [t]he schema concept raises the ... possibility that some features may be ignored, if they are not meaningfully associated with the schema. ... Although one could generate a 'typical' face and body for an extravert, the schema concept implies that these features are not usually stored with the abstract knowledge more relevant to being an extravert. See FISKE & TAYLOR, supra note 111, at 117.
John." And, similarly, Ulric Neisser explains that "[p]erceivers pick up only what they have schemata for, and willy-nilly ignore the rest." Ulric Neisser, Categorically Biased 117

Figure 7. The Coffee Shop

Figure 7 helps illustrate the phenomenon. Take a look at it. If you are like most people who have looked at the photograph, you see a "coffee shop" or "diner" and a "hotel." You might also have noticed the "barber pole" and the person entering the building. Fewer than one-quarter of the subjects saw something animate in the center of the photo. And only about four percent noticed the suicidal woman plummeting in the middle of the picture. A photo of that sort does not tend to activate a schema for such a horrible possibility.

Kunda, supra note 111, at 19. Ulric Neisser, Cognition and Reality: Principles and Implications of Cognitive Psychology 80 (1976). This photograph is credited to I. Russel Sorgi in LIFE: The First 50 Years, 1936–1986, at 64 (Philip B. Kunhardt, Jr. ed., 1986). The Southern California Law Review was unable to find contact information for Sorgi to get permission for this noncommercial, academic use. See generally Phillip G. Zimbardo & George M. Slavich, When the Mind’s Eye Goes Blind: Aschematic Perception in Action (unpublished manuscript, on file with authors). We understand that the image is ambiguous, and that it is difficult to make out what the image is in the center. But that is our point. Our schemas have no place for resolving that ambiguity and it does not occur to most of us that the blurry figure might be a falling person. Unfortunately, another image with a similarly
In a famous experiment demonstrating these effects, John Bransford and Marcia Johnson asked subjects to read the following description of a widely experienced process:

The procedure is actually quite simple. First you arrange things into different groups. Of course, one pile may be sufficient depending on how much there is to do. If you have to go somewhere else due to lack of facilities that is the next step, otherwise you are pretty well set. It is important not to overdo things. That is, it is better to do too few things at once than too many. In the short run this may not seem important but complications can easily arise. A mistake can be expensive as well. At first the whole procedure will seem complicated. Soon, however, it will become just another facet of life. It is difficult to foresee any end to the necessity for this task in the immediate future, but then one can never tell. After the procedure is completed one arranges the materials into different groups again. Then they can be put into their appropriate places. Eventually they will be used once more and the whole cycle will then have to be repeated. However, that is part of life.\footnote{221}

Subjects who were given the schema “washing clothes” before reading the paragraph processed the information much differently—and made sense of the paragraph far more easily—than people who were provided with no schema. And those in the former group were better able to recall the various steps described in the passage.\footnote{222}

\footnotetext[221]{\textit{ambigous figure and the World Trade Center in the background would be unmistakable, simply because our schema for falling person is so clearly, sadly activated.}}

\footnotetext[222]{\textit{In another well known experiment by Bransford and Johnson, subjects read the following ambiguous text passage:}}

\begin{quote}
If the balloons popped, the sound wouldn’t be able to carry since everything would be too far away from the correct floor. A closed window would also prevent the sound from carrying, since most buildings tend to be well insulated. Since the whole operation depends on a steady flow of electricity, a break in the middle of the wire would also cause problems. Of course, the fellow could shout, but the human voice is not loud enough to carry that far. An additional problem is that a string could break on the instrument. Then there could be no accompaniment to the message. It is clear that the best situation would involve less distance. Then there would be fewer potential problems. With face to face contact, the least number of things could go wrong.
\end{quote}

John D. Bransford & Marcia K. Johnson, \textit{Contextual Prerequisites for Understanding: Some Investigations of Comprehension and Recall}, 11 J. VERBAL LEARNING \& VERBAL BEHAV. 717, 718–20 (1972). The subjects either read the passage by itself or accompanied by either of two illustrations. Although both illustrations contain identical graphic elements, only the one with elements organized in a contextually sensible way (left image) led subjects to feel that the passage was very comprehensible and facilitated better recall of the story.
Social psychologists have found that schemas will influence not just our attention, but also the process of categorizing the information to which we attend. For instance, our race schemas may lead us to categorize people differently even if their behavior is the same. A child who grabs an eraser and runs off may be categorized as a thief if the child is black and as a prankster if the child is white.\textsuperscript{223}

In light of the significant role that schemas play in attention and categorization, their dangers become more evident. William von Hippel described the good and the bad of schemas this way:

Schema[s] clearly serve an important conceptual and organizational role in information processing, and they provide insight into what is likely to occur and what has probably occurred. For these reasons, they seem to allow perceivers to process more information with less effort. Yet herein lies their fault... [Very often] schema[s] do not really allow more information processing with less effort. Rather, schema[s] simply allow the perceiver to quickly encode the gist of an event, thereby causing the perceiver not to attend to the available perceptual information. So the gist is stored, but the original perceptual event is lost. In such a fashion, the momentary facilitation in understanding that schema[s] bring about can

Still other experiments reveal the same tendency. For instance, in one, some subjects are asked to walk through a house with burglary in mind while others are asked to walk through with the thought of buying a house. The two different frames led to very different attention-related results. See Fiske & Taylor, supra note 111, at 125.

223. Fiske & Taylor, supra note 111, at 123. Moreover, people take longer and use greater cognitive capacity to encode information that is inconsistent with their active schemas. See infra text accompanying notes 298–305 (discussing when and why we use schemas rather than data-driven cognitive processes).
be outweighed by the long-term loss to memory of the complex, perceptual world.224

More tersely, Kunda explains that "the seemingly irrelevant details that [schemas] lead us to ignore may actually be important."225

Such dangers—created by the fact that our categories and schemas may bias our understanding of the world in numerous ways—are one of the key concerns of this Article.

iv. The Effects of Categorization

The previous section considered some of the effects of schemas on attention and categorization. In this section, we focus on how categorization influences our perceptions,226 regarding the way it enhances or diminishes the perceived similarities and differences between items, beliefs, people, and other information.

In one well-known experiment, Henri Tajfel and A.L. Wilkes showed that items within a category were perceived by individuals to be more similar than they actually were and that items in different categories were perceived to be more different than they actually were.227 As in Figure 8, subjects were presented with two sets of lines of different lengths and asked to make judgments about the lengths of the lines.228 Adding nothing other than category labels (mere letters) for each set of lines led one group of subjects to estimate that the lines within each set were more similar in length to one another than they were in reality.229 A second control group

225. KUNDA, supra note 111, at 20.
226. As noted earlier, it is often difficult to isolate the effects caused by mere categorization from effects caused by the subsequent application of schemas. See John H. Lingle, Mark W. Altom & Douglas L. Medin, Of Cabbages & Kings: Assessing the Extendibility of Natural Object Concept Models & Social Things, in HANDBOOK OF SOCIAL COGNITION, supra note 111, at 71, 107 (noting that "the impact of simple categorization is surprisingly pervasive" and affects memory retrieval as well as inferential processes). We agree that categorization has effects on recall and inference. As we discussed, these processes are mediated through the application of schemas. Thus, we defer much of the discussion of effects, perhaps generated primarily by the categorization function, for the next section, because they are more likely a combination of both categorization and schema application. See infra Part II.C.1.b.–c.
228. In Tajfel and Wilkes's experiment, the lengths of the lines differed by five percent each. See Tajfel & Wilkes, supra note 227, at 101–04.
229. According to research by William Battig and Francis Bellezza, categorization of stimuli into a common category triggers cognitive processing that focuses on the similarities of the stimuli within
of subjects was shown the lines without the labels and did not make the same categorical mistake. In addition, individuals who were shown the labeled sets estimated that the differences between the two sets of lines were greater than the differences that the control group (which was shown unlabeled sets) estimated.

**FIGURE 8. Tajfel & Wilkes’s Categorization Experiment**

Experimental condition | Control condition
---|---
Labeled “A” | Labeled “B”

Numerous experiments have demonstrated that the effects of categorization for people are identical to those for lines. As Fiske and Taylor summarize, “categorizing and labeling makes the person seem even more like other category members than would otherwise be true.”

“Simply categorizing people into groups minimizes within-group variability and maximizes between-group differences.”

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234. *Id.* See also *id.* at 122–23 (“Although people are sensitive to actual differences in variability within groups, they also perceive a group as less variable when they receive a schematic label for the group before learning about its members rather than after, indicating that schemas can reduce perceived variability.”).
Categorization’s effect of reducing perceived variability is even stronger when people are considering groups to which they do not belong. A group of outsiders (an outgroup) appears less variable than one’s own group (ingroup). Minimizing the variability of members within an outgroup means that they are not being recognized as distinct individuals as much as they would be if they were perceived as ingroup members.235

Relationally, social psychologists have learned that outgroup members are characterized by less complex conceptualizations than ingroup members.236 Members of the male category, for example, might think about members of the category of “woman” along fewer dimensions than they would judge themselves.237 The expression “They all look alike” is one of the better-known and more offensive manifestations of this tendency.238

These findings have implications for the perceived legitimacy of our categories. The act of categorization may reinforce the initial sense that the elements categorized together are appropriately categorized together. If two lines or two people look more alike because of a category label, the label will seem more correct, logical, or natural. Thus, categorization may create its own vicious cycle.

235. Id. at 123. This tendency may be explained by the fact that it is probably easier to see outgroup members as similar to one another and harder to take account of the differences in groups that are not well known. Individuals will tend to hold less complex characterizations of the individuals in the group, seeing them as more fuzzy and will therefore not be forced by the evidence to reconcile the intragroup differences. Fiske and Taylor explain, “People not only perceive outgroup members as less variable than ingroup members, they also have less complex conceptualizations of them. For example, young people think about old people along fewer dimensions than they do other young people, and the same is true across racial groupings . . . .” See id. Within ingroups, people likely perceive subcategories that enhance the perception of diversity within the larger category; but within outgroups, they likely miss subcategories and thus perceive similarity throughout.

236. See David L. Hamilton & Tina K. Trolier, Stereotypes and Stereotyping: An Overview of the Cognitive Approach, in PREJUDICE, DISCRIMINATION, AND RACISM 127, 127 (John F. Dovidio & Samuel L. Gaertner eds., 1986). See also Patricia W. Linville, Gregory W. Fischer & Peter Salovey, Stereotyping and Perceived Distributions of Social Characteristics: An Application to Ingroup-Outgroup Perception, in PREJUDICE, DISCRIMINATION AND RACISM, supra, at 167, 167–77 (reviewing a large number of studies demonstrating that ingroup members see their own group as more diverse and varied while viewing outgroups as more homogenous in their behavior and traits).


238. See Hanson & Yosifon, The Situational Character, supra note 51, at Part II.B.2.a (summarizing classic studies by Muzafer Sherif and his colleagues, who discovered the power of groupism by conducting a series of experiments behind the cover of a summer camp).
The effects of mere categorization may go far in explaining the sort of
gender, ethnicity, and race "differences" so long "seen" among humans.239
For instance, Justice Bradley's ability to see the "natural constitution" of
women so clearly is likely to result, in part, from lumping all women into
the same category. Even as he recognizes exceptions to the general rule, he
sees more similarities between women as a whole than differences. And
Aristotle and Plato's perceptions of the outgroup were similarly invariable
and uncomplex and perhaps seemed more accurately categorized with each
day that the category persisted. The creation and maintenance of racial
classifications240 may increase the sense that those categorizations exist
and are natural even when biological differences may suggest otherwise.241

The effects of categorization do not end here. In her analysis of the
role of categorization in the creation and maintenance of difference,
Martha Minow applies an understanding of categories to the way that law
treats differences and boundaries between people, and emphasizes that
categorization, while it may seem a relatively benign process, can have
dangerous effects.242 The process of categorization, Minow argues, is a
process in which we are not only classifying information, but "we are
investing particular classifications with consequences and positioning
ourselves in relation to those meanings."243 We divide the world into
groups, distinguish among the groups, and discriminate accordingly. Such
categorization effects can play an important role in creating and
perpetuating all forms of prejudice or intolerance for difference, including
racism, sexism, heterosexism, anti-Semitism, ageism, lookism, ableism,
and so on.

This section has summarized some of the effects of the categorization
process viewed in isolation. There are a number of other effects that are
related to, and that find their roots in, the categorization process, but that
results in part from the application of schemas to categories, the topic of
the following two sections.

INTERGROUP RELATIONS 7, 10–11 (Stephen Worchel & William G. Austin eds., 1986). Such effects are
particularly strong when there are ingroup and outgroup comparisons. See infra text accompanying
notes 366–71.
240. See Interview with Steven Jay Gould, at http://www.pbs.org/race/001_WhatsRace/001_00-
home.htm (last visited Sept. 18, 2004) (describing the development of racial classifications in the
West).
241. See supra text accompanying notes 69–72.
242. MARTHA MINOW, MAKING ALL THE DIFFERENCE: INCLUSION, EXCLUSION, AND AMERICAN
243. Id. at 3.
b. Schema Effects on the Inference and Problem Solving Process

We turn now to the influences of schemas on our inferences. In addition to guiding our attention and influencing our perceptions of variability within and between groups, the categories that emerge from initial stages of information processing interact with our knowledge base and schemas to help us draw inferences that go well beyond what we observe. Thus, while the last section reviewed the effect of schemas on categorization, the following sections describe their effect on subsequent processes of inference and memory. The use of schemas to infer additional information, as depicted in Figure 9, makes the categorization function even more significant than the previous section indicated. When our construal of information turns on our schemas and categories, the schemas and categories themselves can figure more prominently in our beliefs, attitudes, and actions than does the information itself. For example, as Ziva Kunda writes, "It is this function of going beyond the information given that makes [categories] often the subject of heated political debates: A person classified as a freedom fighter is also assumed to be noble and heroic, whereas a terrorist is assumed to be despicable and murderous."245

As will become clear, the interaction between our categories and our preexisting knowledge, as embedded in the schemas we apply, influences every aspect of our "inference" process—including interpretation, evaluation, judgment, prediction, and problem solving.

Figure 9. Schema Effects on Inference and Problem Solving

Walter Crockett has identified three types of inferences that individuals make based on the schemas that they apply: default inferences, inferences about future events, and inferences to other schemas.248

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244. KUNDA, supra note 111, at 18.
245. Id.
246. We have adapted this figure from Hastie, supra note 111, at 45.
247. Or, it may be more accurate to say that he has "schematized three categories."
248. Walter H. Crockett, Schemas, Affect, and Communication, in Communication, Social Cognition, and Affect 33, 34 (Lewis Donohew et al. eds., 1988). Similarly, Taylor and Crocker focus on four key effects: (1) to enable individuals to infer missing data based on the schema; (2) to facilitate problem solving processes; (3) to provide a basis for individuals' evaluations of experience;
first type, default inferences, refers to the phenomenon of filling in unobserved default information based on a schema. Default inferences describe much of the more common situations in which we apply our prior knowledge to the information we have categorized. When we only observe a person entering a diner and exiting it forty-five minutes later, we will infer, from the restaurant script, that the person ordered food from a waiter, the waiter brought the food, the person ate much of the food, and paid for the food on the way out. And, although we can see only three wheels in the photograph of the Honda Element, we can be pretty confident that the vehicle actually has a fourth wheel that looks much like the others.

The second type of inference, inferences about future events, is closely related to the first: it refers to our tendency to base predictions (to fill in a type of missing information) on our schemas. So, for instance, if we were to observe a person entering a diner, we would again tend to rely on our restaurant script to predict what that person was about to do, even without witnessing that person’s exit forty-five minutes later. Crockett provides the example of how our categorization of someone as “helpful” will lead us to predict, with our helpful person schema, how that person will behave in future situations in which help is called for. Thus, considering those two types of inferences, when we designate a person as a “freedom fighter” or a “terrorist,” we can more easily fill in default details about, for example, what motivates that person, what activities that person engages in, and what policies—reward or punishment—that person will respond to in the future. Such inferences provide us important cues for our own behavior and a valuable sense of control over our futures.

A subset of predictive inferences are causal inferences that schemas, particularly stereotypes, make possible. In one of the seminal demonstrations of this phenomenon, subjects watched either an African American or a European American push another person. Where the former

and (4) to allow individuals to anticipate, plan, and adjust for the future. See Taylor & Crocker, supra note 103, at 103–14.

249. Crockett, supra note 248, at 35. See supra text accompanying notes 141–43 (describing the restaurant script).

250. Of course our prediction would be much different if the person was a woman wearing a polyester apron and a pencil behind her ear, for our predictions would be informed by our role schemas as well as our scripts.

251. See Crockett, supra note 248, at 35.

was an African American, subjects were more likely to attribute the behavior to internal or dispositional factors and not to situational factors. Subjects made the reverse attribution where the former was a European American. Bernd Wittenbrink, James Hilton, and Pamela Gist have shown more recently how stereotyping contributes to the tendency to dispositionalize bad outcomes to outgroups. Stereotypes contain not simply a list of attributes for a particular group, but a fairly elaborate set of presumptions about the causal relationships among those attributes.

The final type of inference, inferences to other schemas, refers to the ability of one schema to enable broad inferences based on its relationship to another schema. If, for instance, a helpful person is often conscientious, then activation of the helpful schema will enable us also to apply the conscientious schema and to make default and predictive inferences based on that schema. That sort of schema jumping can influence our inferences in numerous ways. Indeed, categorization that activates one schema can cut off other possible categorizations associated with other schemas. Thus, when Justice Bradley in *Bradwell v. Illinois* determined, based on his schemas regarding women and lawyers, that women should not be admitted to law schools, he was drawing inferences not solely from the information at hand, but from his interpretation of that information and the relationships and interaction between the schemas that the case activated in him. In his mind, the women’s sphere (or the then-dominant schema regarding women) could not be reconciled with the rough and tumble sphere of aggressive, adversarial attorneys.

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257. *Id.*
The influence of our schemas goes beyond the inferential processes of individuals. When two or more people perceive information through the same schemas, collective inferences are easier to reach because perceptions, judgments, and conclusions (indeed all aspects of our inferential process) are shared and easier to communicate. Thus, shared schemas allow a speaker to omit many details inasmuch as the audience will automatically fill in the same default and predictive inferences and will engage in the same schema jumping as the speaker does. Absent shared schemas, potential disagreement or confusion shadows a speaker’s every utterance. When the speaker and audience have different categories and schemas in mind when conversing about a particular issue, greater effort is necessary to ensure meaningful dialogue.

There are other potential risks associated with our reliance on schemas and categories in our inferential processes. David Rumelhart suggests three situations in which schemas are most likely to bias our inferences: first, when a person does not have the appropriate schema; second, when the person has the appropriate schema but does not have enough “clues” to activate the schema; and finally, when the person is able to arrive at a consistent interpretation based on an activated schema, even when the schema is not an appropriate one.

Applying Rumelhart’s warnings, the “washing clothes” scenario discussed above may make these sources of bias easier to grasp. The first potential source of bias is not applicable in this case, because most of us generally do have access to the “washing clothes” schema. The second source of bias is actually the one that the experiment best illustrates. That is, the information in the passage was so vague that it failed to trigger any schema in most subjects. The third source of bias is exemplified in a person, described by Rumelhart, who was convinced that the passage described the person’s day-to-day job: “pushing papers,” an activated schema that seemed consistent with the information, yet was quite wrong.

258. See Chen & Hanson, supra note 86.
259. See Rumelhart, supra note 215, at 176. See also Taylor & Crocker, supra note 103, at 114–23 (highlighting four possible sources for error when individuals apply schemas). Note that the sources of biases described in this section apply not just to our inference process, but also to our initial categorization and our subsequent memory.
260. See supra text accompanying note 221.
261. See Rumelhart, supra note 215, at 177.
In sum, although schemas and categories save us a tremendous amount of cognitive energy, they do not ensure that our inferences are trustworthy and, at times, may actually ensure that they are not.

c. Schema Effects on Memory and the Retrieval Process

As an additional related danger of our schema- and category-based inference process, we often fail to recognize or recall what information was inferred, through default and prediction inferences and through schema jumping, and what information was actually observed.\textsuperscript{262} We describe this and other memory effects in more detail in this section.

Finally, as we just indicated, and as depicted in Figure 10, schemas may have a significant effect not just on what we see and infer about what we see, but also on what we remember.

\textbf{FIGURE 10. Schema Effects on Memory and Retrieval}\textsuperscript{263}

Social psychologists have found that schemas generally facilitate our recall by providing us with a cognitive handle for retaining information.\textsuperscript{264} Nancy Cantor and Walter Mischel tested subjects’ memories of various people, some of whose characteristics would tend to activate a particular schema (for example, a person might be described as extroverted), and some of whose characteristics did not tend to activate that schema (for example, a person might be described as having both introverted and extroverted characteristics).\textsuperscript{265} Memory of the attributes of these individuals who triggered a particular schema was higher than those whose characteristics did not clearly fall into a familiar schema.\textsuperscript{266} As Fiske and

\begin{itemize}
  \item \textsuperscript{262} \textit{See} Crockett, \textit{supra} note 248, at 35. Fiske and Taylor note that people will “extract a trait prototype from exposure to category-consistent information.” \textit{Fiske \& Taylor, supra} note 111, at 107. For example, if you see that a person is energetic, entertaining and friendly, you may later believe that you observed that they were outgoing and lively. \textit{Id.}
  \item \textsuperscript{263} We have adapted this figure from Hastie, \textit{supra} note 111, at 45.
  \item \textsuperscript{264} \textit{See} Brewer \& Nakamura, \textit{supra} note 111, at 142; Taylor \& Crocker, \textit{supra} note 103, at 99.
  \item \textsuperscript{265} \textit{See} Nancy Cantor \& Walter Mischel, \textit{Traits as Prototypes: Effects on Recognition Memory}, 35 \textit{J. Personality \& Soc. Psychol.} 38, 38-48 (1977).
  \item \textsuperscript{266} \textit{See} id.
\end{itemize}
Taylor summarize this line of research, individuals' memories "[are] superior whenever [they] are given an appropriate organizing theme."  

But schemas do not facilitate recall of all information equally; schemas are particularly influential in aiding our memories for schema-relevant information. For example, in one experiment, subjects were asked to watch a videotape of a woman celebrating her birthday over dinner with her husband. Before watching the videotape, some individuals were told that the woman was a waitress and other subjects were told that she was a librarian. Consistent with the hypothesis that schemas will influence retrieval of relevant information, participants who were told that the woman was a librarian later recalled seeing characteristics that were prototypical of librarians—such as "wears glasses" and owns "classical records." Those told that the woman was a waitress recalled characteristics that might be prototypical of waitresses—such as recalling that she drank beer during the dinner and that she had a television.

Mark Snyder and Seymour Uranowitz conducted a similar experiment in which subjects were read a woman's life history. One group of subjects was told that the woman was a lesbian, a second group was told that she was a heterosexual, and a control group was not told anything about her sexual preference. After being read the passage, subjects were asked to recall information about the passage. Subjects in the first group were more likely to recall information that fit the lesbian stereotype than either of the other two groups.

267. Fiske & Taylor, supra note 111, at 105. Increased memory for schema-related information is a finding that stems back to Frederic Bartlett's seminal work on memory and has been supported by numerous subsequent studies. See Bartlett, supra note 111, at 47-185; Brewer & Nakamura, supra note 111, at 143.

268. See Taylor & Crocker, supra note 103, at 99. See also Fiske & Taylor, supra note 111, at 105 ("[P]eople especially remember schema-relevant details more than irrelevant details"); supra text accompanying notes 215-20 (discussing the role of schema-relevant information on encoding).


270. See id. at 445.

271. See id. at 446-47.


273. Id. at 949-50.

274. Id.
To test this influence on yourself, think back to the photograph of the graduate student’s office provided in Figure 2. Think about the contents of that room. Write down as much as you recall.

In 1981, William Brewer and James Treyens conducted an experiment resembling the one in which we have just asked you to participate. In the actual study, subjects believed that they were about to take part in an experiment in another room. But before entering that other room, they were told that the graduate student experimenter needed to make sure that the previous subject was finished, and they were asked to wait in his office, the very office pictured in Figure 2, for thirty-five seconds. As soon as the subjects exited that room, they were then told that the real experiment had been underway, and that they were participating in a memory test. Subjects were asked to recall as much as they could about the office that they had just waited in. The results revealed that “memory” was infused as much or more with expectation and experience (that is, the graduate student office schemas) than with accurate perceptions. The subjects did not remember well items that were present in the room but were aschematic. Very few remembered the wine bottle, the coffee pot, the skull, or the picnic basket, for example. Expected items, such as chairs and the desk, were most frequently recalled. And items that were absent but expected were commonly remembered. For instance, approximately one-third of the subjects confidently “remembered” books on the shelves. But the book shelves contained virtually everything except books. As Brewer and Treyens explained these bibliographic fantasies, information slots that were not filled with perceptual information were filled nonetheless with expectation-based schematic defaults.

Those studies and many like them indicate the way in which people recall schema-relevant information that is consistent with the schema. Yet the evidence indicates that even if the schema-relevant information is inconsistent with the schema, it tends to be recalled more readily than information that is irrelevant. Reid Hastie and Purohit Kumar conducted early research into the effect of schema-inconsistent attributes on subsequent recall. In their research, they first provided individuals with an expectation about a person and then provided information about the

278. Reid Hastie & Purohit Anand Kumar, Person Memory: Personality Traits as Organizing Principles in Memory for Behaviors, 37 J. PERSONALITY & SOC. PSYCHOL. 25 (1979).
person’s behavior. Individuals were able to recall more easily behaviors that were inconsistent with the expectation.\(^{279}\) For example, if Archie Bunker were to come face to face with a woman surgeon, he would no doubt take notice, even if he did not like what he saw. Hastie found that both consistent and inconsistent information was recalled better than irrelevant information, suggesting a U-shaped curve plotting the amount of recall by the consistency of information (with ambiguous or irrelevant information being in the middle).\(^{280}\) Given the schemas regarding women’s attributes discussed in our initial examples, a woman’s ability might be recalled more easily than, for example, a woman’s height.

Perhaps most interesting, there is evidence that in some cases individuals will exhibit a tendency to recall schema-inconsistent information to be schema-consistent. For example, in one experiment, subjects—in this case, children—watched a video of a female doctor and a male nurse and then were asked about the genders of the doctor and nurse.\(^{281}\) Over half of the subjects incorrectly recalled that the doctor was male. In a slightly more complicated experiment, subjects were told one of two versions of a story about an engaged couple.\(^{282}\) Both versions described a man who did not want to have children, a preference that he was reluctant to reveal to his fiancée. Upon telling his fiancée, some subjects learned that she felt the same about having children and that they were both relieved.\(^{283}\) A different outcome, told to some subjects, was that the woman was “horrified” by what her fiancée told her “since having children [was] very important to her.”\(^{284}\) A bitter discussion ensued, and the story ended there.

After being told one version of that story, subjects were given some administrative tasks, such as filling out consent forms. While doing so, the experimenter casually mentioned to some subjects either that the man and woman eventually got married and were still happily together, or that they broke off the engagement. Other subjects were told nothing. Subjects were


\(^{280}\) See Hastie, supra note 111, at 75.


\(^{283}\) See id. at 142.

\(^{284}\) Id.
asked later to recall the story. Those who were given schema consistent information following the story (for example, the “relieved” couple got married) recalled the story with a high degree of accuracy. Those given inconsistent information, however (for example, the “relieved” couple broke off their engagement), tended to recall information “erroneous in the direction of producing reconciliation of the conflicting elements.” For example, subjects might recall less disagreement in the original story if told that they eventually got married and remained happily married. Subjects similarly attempted to reconcile the information by offering responses such as the following: “They discussed it and decided they could agree on a compromise: adoption,” or “She was only a little upset at the disagreement.” In addition, the longer the subjects had to wait between the time they were provided with the schema and the test of their recall, the greater the tendency to distort the story to be consistent with the schema.

Based on such results, David Schneider concludes that “we often remember information as particularly consistent with the schema[s] we used to understand and process that information.” Memory leaves out many details that were never recorded or which have been forgotten. Beyond that... our memories are influenced by assumptions we make and inferences we draw. Having decided that the man before me is a criminal, I may remember him as bigger and more muscular than he really is.

A simpler version of the same phenomenon is demonstrated by an experiment in which subjects were read a list of words: “mad, fear, hate, rage, temper, fury, ire, wrath, happy, fight, hatred, mean, calm, emotion, and] enrage.” When asked to recall words that they had been read, experimenters found a large tendency to recall a highly associated word that had been left out of the list: in this case, a large percentage of subjects recalled being read the word “anger.” The list of words activated a

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285. The time allowed to elapse varied between two days, three weeks, and six weeks.
286. Spiro, supra note 282, at 143.
287. Id. at 150.
288. See id.
289. Schneider, supra note 110, at 52.
290. See id.
292. See id. at 808, 814.
schema that triggered memory for elements that were not included in the list.  

Given our discussion of categories and schemas thus far, it should be clear that while the use of categories and schemas as tools to help us manage the information and situations with which we are presented may be necessary and often invaluable, they are also potentially quite inaccurate and at times dangerous. "Categories and schemas allow us the comforting sense that we understand our world, and often they are accurate enough, although sometimes they are sadly mistaken." As Ziva Kunda explains, "When we observe our social world, we do not merely watch an objective reality unfold before our eyes. Rather, we take part in shaping our own reality; the [schemas] we impose on events determine the meaning we extract from them."  

We end this section where we ended the last section, with a reminder of the unseen power of schemas over our cognitive processes. Schemas operate silently to influence what we see, what inferences we draw, and what we remember. There is nothing particularly puzzling about Archie Bunker's inability to solve the riddle posed earlier. Even if, as is likely, Archie has met surgeons who fall into the "woman" category, his memory might deceive him, preventing him from recalling that information or from recalling it in that form. Indeed, as we just reviewed, the same tendency has been demonstrated in subjects asked to recall whether a doctor or nurse was a man or woman. And, unfortunately, there is nothing particularly unusual or deviant about the unseen habits of mind that lead us to "see," infer, and remember differences across categories, differences that may not in fact exist.  

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293. Roediger & McDermott tested a number of lists, such as "boy, dolls, female, young, dress, pretty, hair, niece, dance, beautiful, cute, date, aunt, daughter, sister" (activating the word "girl"), and "low, clouds, up, tall, tower, jump, above, building, noon, cliff, sky, over, airplane, dive, elevate" (activating the word "high"). See id. at 814.  

294. FISKE & TAYLOR, supra note 111, at 97.  

295. KUNDa, supra note 111, at 19. Kunda treats categories and schemas synonymously: psychologists have used many different terms to refer to concepts. Some of these are general enough to refer to just about any concept. These include mental representations, knowledge structures, and schemas. Some contain specific assumptions about the nature of representation.... These include prototypes and frames.... Among social psychologists, the single most popular term for mental representation has been schema.  

296. One question remains regarding the effect of schemas on recall—the question of source. As mentioned, it is difficult to separate memory effects from encoding research, to know whether the memory effect is a result of biases in information acquisition or in retrieval. Research on the disentanglement of attentional and retrieval biases remains mixed, with some research suggesting that the schematic biases stem from the attention and encoding functions, while other experiments appear to have pinpointed the schematic biases as resulting from retrieval bias. Compare Myron Rothbart, Mark
2. The Process of Schema Application—Determinants and Conditions of Schema Use

In this section, to expand our understanding of the ways in which categories and schemas may bias our cognitive processes, we examine the determinants of schema use, with a particular focus on one key question: what determines which schemas or categories, among the possible options, we rely on?

**FIGURE 11. Categorization and Schema Application**

Researchers have varying theories about the process of schema application. This process, depicted in Figure 11 above, is reminiscent of the categorization process discussed as a part of the attention and categorization step outlined above. Once information has been satisfactorily categorized, individuals will attempt to apply an active schema to the classified information. Sometimes these active schemas will be obviously appropriate; other times, individuals might find it necessary to “tune” their active schemas to make them more consistent with...
information before them.\textsuperscript{300} Individuals might apply one of their active schemas, but if none seem appropriate, then they will search through their stores of inactive schemas for a better match. Only if no such schema exists will they invest the cognitive energies required to create new schemas.\textsuperscript{301} Rumelhart terms this the "restructuring phase."\textsuperscript{302} Similar to the processes by which the initial schema was developed, any new schemas that an individual generates will undergo refinement (or what Rumelhart terms "tuning")\textsuperscript{303} before it is deemed appropriate for application, and will continue to be tuned over time to be more consistent with the individual's actual experiences.\textsuperscript{304}

Later, we discuss related factors that may cause individuals to exhibit a tendency to rely more readily on the active schemas and resist the search for inactive schemas or creation of new schemas that might be more appropriate to the information at hand.\textsuperscript{305} Such factors contribute to the "cognitive inertia" that enables individuals to stay in the gray area in Figure 11. First, however, we explore the determinants of schema choice.

It should be clear that, like the categorization process outlined earlier, the schematization process enables varying degrees of attention to the individual attributes of the information at hand. Indeed, from Figure 11 above, a finding of "appropriateness" of the active schema is a process that we may find easier or more difficult to confirm depending on a large number of cognitive factors. Those factors we begin to describe in the next section and continue to illuminate in later sections.

a. Influences on Schema Choice and Application

Almost any object can be categorized along a number of dimensions and will be consistent with numerous schemas. As we have already seen, an individual may, for instance, apply a person schema or a role schema to understand and predict a person's behavior. But that distinction vastly underestimates the variety of dimensions that might define our schemas. The

\textsuperscript{300} See Rumelhart, supra note 215, at 181–82.

\textsuperscript{301} For simplicity, we are treating schema selection here as if it is a deliberate, conscious process. In fact, it rarely is. In many instances schema activation and application are both completely automatic. For a summary of the role of automaticity in our cognitive processes, see Hanson & Yosifon, The Situational Character, supra note 51. For a very brief description of some of the other subtleties of schema application, see infra note 306.

\textsuperscript{302} Rumelhart, supra note 215, at 180–81.

\textsuperscript{303} Id.

\textsuperscript{304} See id. See also David E. Rumelhart & Donald A. Norman, Accretion, Tuning and Restructuring: Three Modes of Learning, in SEMANTIC FACTORS IN COGNITION 37, 47 (John W. Cotton & Roberta L. Klatzky eds., 1978).

\textsuperscript{305} See infra Part II.C.2.a.iv.(g).
same thing can be described, for example, as an animal, a human, a doctor, a woman, a geriatric, a Jew, a heterosexual, a giant, an African American, a lover, a runner, a mother, a third aunt, a wet blanket, a breath of fresh air, or even a breather of air. In this way, most objects have numerous—no, innumerable—attributes and thus can potentially activate a wide variety of schemas, each of which will generate its own set of inferences. Consequently, for most objects or instances, individuals can conceivably choose any of those features to focus on in determining which schema to apply. To better understand the biasing effect of schemas, it is useful to understand why we might tend to focus on only a subset of those dimensions for any given object at any given time.

Liebman's stand-up comedy routine is a vivid illustration of the biases that may occur as a result of the numerous schemas at work in our minds and the automatic process through which we may latch on to any one of those schemas, sometimes wrongly, to interpret the events before us. For example, Liebman's joke, "Is there a doctor in the house? Because my mother wants me to marry you," begins by triggering the doctor-emergency schema before the second sentence presents incongruities that

306. The dynamic is more complex than even that. The categories initially utilized reflect our activated schemas and, in turn, influence the schemas that will be activated in the future with respect to that object. A person can fall into many categories, and familiar categorizations such as race, gender, and age tend often to be the dimensions along which we categorize. This tendency reflects the fact that, for reasons we will highlight in this section, many of us operate with schemas activated that render these dimensions relevant. See Michael A. Zarate & Eliot R. Smith, Person Categorization and Stereotyping, 8 SOC. COGNITION 161 (1990). Once an individual has been categorized along such dimensions, however, other traits that are not associated with those categories will more likely be ignored and other schemas that might make those other traits relevant will less likely be activated. As Denise Beike and Steven Sherman write, "Alternative categorizations of the same object can result in different information being encoded and, therefore, being available for later inference." Denise R. Beike & Steven J. Sherman, Social Inference: Inductions, Deductions, and Analogies, 1 HANDBOOK OF SOCIAL COGNITION 209, 269 (Robert S. Wyer & Thomas K. Srull eds., 1994). Thus, which schemas are activated both reflects and determines our categorization and our categorization, in turn, influences which schemas will later be activated and the inferences that we draw from the underlying information. This provides another insight into how schemas will have indirect effects on the very categorizations on which their use is dependent. Because schemas are attached to categories, active schemas themselves will help to determine which categories are most accessible, and therefore which categories will have a greater likelihood of being applied. While some researchers indicate that the process of categorization must occur before the application of schemas, this does not seem consistent with an understanding of schemas that includes an ability to influence the encoding stage of information processing. If schemas do help to guide our attention, as research indicates they do, then the process of categorization cannot be independent of the schema function; rather, the question of what things are categorized is one in which schemas play an important role. Thus, while it may be true that categorization is required before schemas are applied, the mere presence of active schemas will help to determine which categories are ultimately applied. Put differently, schemas and categories may be, like so many things that our theorizing attempts to separate, mutually constitutive.

force us unexpectedly to shift to a very different schema. Indeed, jokes may be understood simply as a deft attempt to trigger a particular schema only to reveal, with the punch line, how very wrong that schema is. Similarly, in his study of humor, Victor Raskin provides an example of a typical joke: "'Is the doctor at home?' the patient asked in his bronchial whisper. 'No,' the doctor's young and pretty wife whispered in reply. 'Come right in.'"^{308}

Like Liebman's punch lines, it should be clear that Raskin's joke is successful, if at all, because it triggers the doctor-visit schema only to surprise us by shifting to the extramarital-affair schema. The first schema is triggered by the words "doctor," "patient" and "bronchial" as well as the fact that the question seems a most natural one, as does the answer.\(^{309}\) "The fact that the doctor's wife turns out to be young and pretty does not seem to be relevant to the situation and to the script it unambiguously evokes but there is certainly no contradiction or incongruity between this fact and the situation."\(^{310}\) Yet the response catches us off guard, suggesting that the schema we applied is not correct, and triggering another schema that better fits the information presented. That is, now the patient's "whisper," which initially seemed irrelevant, takes on particular relevance in the extramarital-affair schema.\(^{311}\) Effective jokes are only one example of the many situations in which different objects, instances, or events may be understood through the lens of multiple schemas, with very different interpretations. As the examples illustrate, the schemas we choose to apply will have important effects on the way we interpret the information before us.

Although the biases that those effects cause may sometimes be humorous, they may also at times be quite dangerous or oppressive. In this section we discuss a number of factors that influence this schema-choice process, including primacy, salience, priming, motivations, and affect as illustrated in Figure 12 below.

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308. VICTOR RASKIN, SEMANTIC MECHANISMS OF HUMOR 100 (1985).
309. See id. at 105.
310. Id.
311. Interestingly, but perhaps not surprisingly, research has found evidence that the incongruity followed by resolution caused by shifts in schemas helps to determine how funny a joke is. See, e.g., Frank W. Wicker, Irene M. Thorelli, William L. Barron, III & Marguerite R. Ponder, RELATIONSHIPS AMONG AFFECTIVE AND COGNITIVE FACTORS IN HUMOR, 15 J. RES. PERSONALITY 359 (1981).
i. Primacy and Salience

Two important characteristics of the information that will play a role in determining which of the many available schemas an individual ultimately applies are primacy and salience.

One commonly used example provides an illustration of how primacy of information may affect schema choice. Read the following sentence:

FINAL FOLIOS SEEM TO RESULT FROM YEARS OF DUTIFUL STUDY OF TEXTS ALONG WITH YEARS OF SCIENTIFIC EXPERIENCE.

Now read the sentence again quickly and count the number of F's in the sentence as you read. Many individuals find that they seriously undercount the number of F's (the correct answer is eight), due to the first two words that trigger a particular schema, which they then try to match while reading the remainder of the paragraph. The F's that appear in the middle and at the ends of words are more difficult to identify.

In their analysis of scripts, Robert Wyer and Donal Carlston highlight the importance of the order of presentation of information in influencing schema choice. The same information presented in different order may activate different schemas. One study examined people's reactions to a

312. We have adapted this figure from Hastie, supra note 111, at 45, augmenting it with processes from Rumelhart, supra note 215, at 188, and also adding influences on choice of schemas, the categorization process, the inference process, and the retrieval process.

313. As will become clear, the effects of primacy may overlap considerably with priming effects, which we discuss in the next section.

314. LANGER, supra note 147, at 17.

A woman who approached them in a shopping center. The woman asked the people for help, altering only the order and not the content of her remarks. In one instance, she remarked, "Would you do something for me? Please do me a favor and call my husband and ask him to pick me up? My knee is killing me, I think I sprained it." To others, the woman remarked, "My knee is killing me, I think I sprained it. Would you do something for me? Please do me a favor . . . ." Differences in the simple ordering of the remarks caused the activation of different schemas (the "target-oriented" schema in the first instance, and the "victim-oriented" schema in the second) with resulting differences in effects: the second solicitation was more effective than the first when the request seemed legitimate.

In addition, cues that are prominent or catch our attention are more likely to activate associated categories and schemas. Salience can arise from characteristics that are novel, that is, unusual for a person or category, because they are noticeable or goal-relevant. With salience, context is key. As any font maven understands, in one setting, bolded words catch our attention. In another setting, the occasional unbolded word stands out, particularly if it is italicized, underlined, and CAPITALIZED. Langer explains that

[in the midst of a rough skirmish on the football field, bruises are hardly noticed. Similarly, cutting oneself while rushing to prepare dinner for ten people who will be arriving any minute might also be something one would hardly notice. In contrast, a paper cut suffered while reading a dull magazine article quickly becomes the focus of attention[.]]

not to mention the source of considerable pain.

Social salience occurs as well when a person is the "sole heterosexual, homosexual, youngster, oldster, male, female, black, white, or whatever, in an otherwise homogenous group." Kunda writes, "A person who differs from everyone else present on a particular dimension may be especially likely to activate that dimension." For example, "[c]hildren are particularly likely to describe themselves as having attributes that make

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317. Id. at 28.
318. See id. It strikes us that the success of the woman in the "victim" role may well have been related to the stereotypical role of women as victims.
319. See Fiske & Taylor, supra note 111, at 248.
320. Langer, supra note 147, at 73.
322. Kunda, supra note 111, at 21.
them relatively distinctive from their classmates." Where boys are a minority in a classroom, they are more likely to describe themselves as "boys" than where they are a majority. It may be for such reasons that we have words like "bald" but not "haired," and why Tiger Woods was long described as an African American golfer, while his cohorts were referred to just as golfers. And if Archie had encountered a doctor who was a woman, he would have, we strongly suspect, seen her and referred to her as a "lady doctor," if not a nurse.

ii. Priming

Another significant determinant of which categories or schemas we will rely on are recency or frequency with which we have relied on them in the past. Social psychologists sometimes refer to this as the "priming effect." "The term priming refers to any experiences or procedures that bring a particular concept (or any other knowledge structure) to mind." If, for example, an individual has just been reading an article on a topic that activates a particular category or schema, they will be more likely to classify an object or piece of information, unassociated with that article, based on dimensions associated with that category or schema.

It is also possible to prime people's attitudes or feelings toward a concept, and this too will make them more likely to use this concept in judgment. For example, under normal circumstances, people are equally likely to classify Mother Teresa as a humanitarian as they are to classify her as a Catholic nun. However, if they have just been asked to contemplate how much they like Catholic nuns, they become more likely to classify her as a nun than as a humanitarian.

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323. Id. at 22.
324. See id.
325. As long as we are speculating about a fictional character, we think it is safe to assert further that he would have seriously doubted her credentials as a doctor.
326. See Lingle et al., supra note 226, at 104; Schneider, supra note 110, at 51 (citing Eliot R. Smith, Content and Process Specificity in the Effects of Prior Experiences, in 3 ADVANCES IN SOCIAL COGNITION 1 (Thomas K. Srull & Robert S. Wyer, Jr. eds., 1990)).
328. See WYER & CARLSTON, supra note 315, at 40. See also E. Tory Higgins, William S. Rholes & Carl R. Jones, Category Accessibility and Impression Formation, 13 J. EXPERIMENTAL SOC. PSYCHOL. 141 (1977) (providing one of the best known demonstrations of this phenomenon).
329. KUNDA, supra note 111, at 23. See generally Daniel T. Gilbert & J. Gregory Hixon, The Trouble of Thinking: Activation and Application of Stereotypic Beliefs, 60 J. PERSONALITY & SOC. PSYCHOL. 509 (1991) (providing evidence that, although priming can activate a schema, activation requires cognitive resources and that, once a schema is activated, not applying the schema requires cognitive resources).
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For different people, different categories and schemas are often chronically primed, or easily accessible and relied on often. "Concepts tend to be chronically accessible if they are viewed as self-defining and important or if they figure prominently in many of one's descriptions of other people." And, of course, "[b]ecause different concepts are chronically accessible to different people, two people entering identical social situations may extract very different meanings from these situations." Thus, a feminist scholar might see oppressive patriarchy where a legal economist might see efficient customs and legitimate responses to economic cost differentials.

Priming can occur through a wide variety of mechanisms, from recent exposure in a newspaper article, to one's educational background, to the culture and environment in which an individual grew up. For example, legal economists more quickly apply the economist's script than those unschooled in the economic approach, for the script has been primed over many years of training. Similarly, the process of teaching law students to think like lawyers, is, at least in part, a process of training them how to fall reflexively into the categories, schemas, and scripts of the law. Cultural factors can similarly prime particular schemas: in most Western countries, individuals have been found to exhibit a natural tendency to categorize others based on marital or parental status, whereas in other cultures, people pay more attention to whether the individual has parents who are still alive. Such tendencies may arise due to differences in the importance that different cultures ascribe various family bonds and forms of hierarchy.

iii. Affect

Particularly over the last two decades, social psychologists have documented an important role for affect, or an individual's mood or

330. KUNDA, supra note 111, at 24.
331. Id.
332. Compare, e.g., DEBORAH L. RHODE, JUSTICE AND GENDER (1989), and DEBORAH L. RHODE, SPEAKING OF SEX: THE DENIAL OF GENDER INEQUITY (1997), with RICHARD A. EPSTEIN, FORBIDDEN GROUNDS: THE CASE AGAINST EMPLOYMENT DISCRIMINATION LAWS (1995). Cf. Wittenbrink et al., In Search of Similarity, supra note 254 (providing evidence that social categorical knowledge includes assumptions about how stereotypical group attributes are related to one another); Wittenbrink et al., Structural Properties, supra note 254 (same).
334. See Schneider, supra note 110, at 51. Similarly, individuals in Eastern cultures are less likely to make dispositionist attributions and more likely to make situationist attributions. See Hanson & Yosifon, The Situation, supra note 51, at 250–59.
emotional state of mind, in cognition.\textsuperscript{335} Thus, it should come as no surprise that there are important connections between affect and the application and choice of schemas. For example, Fiske has found evidence of schema-triggered affect—or emotions and moods that are stored within schemas. The activation of those schemas automatically trigger a corresponding affect.\textsuperscript{336} Thus, the schema for a lawyer or politician might trigger a feeling of distrust; the schema for Hitler might trigger a feeling of disgust and perhaps hatred.

While the choice and application of schemas appear to have significant direct and indirect influences on affect,\textsuperscript{337} we are concerned in this Article equally with the reverse phenomenon—the potential for affect to influence an individual’s choice of schema. In psycho-speak,

\begin{quote}
[w]hen a particular emotion is activated, subthreshold activation will occur at its associated nodes; among the nodes receiving such activation will be those representing the schemas and events associated with that emotion node. Thus, schemas and other cognitive materials that are tagged with that emotion will be primed for both the identification of mood-congruent stimulus material and for the recall of congruent material from memory.\textsuperscript{338}
\end{quote}

In other words, affect influences the schemas people apply to interpret events. Individuals who feel happy will describe ambiguous scenes in more positive terms than those who are angry or depressed; they also are more likely to recall particular positive or negative events based on their affect.\textsuperscript{339} Similarly, individuals in a good mood are more likely to apply positive schemas in their evaluations of other people.\textsuperscript{340}

iv. Motivations

It is well established that motivations, too, play a significant role both in determining what schemas we select or rely on in a given situation and

\textsuperscript{335}. For a thorough review of the burgeoning literature on the effects of affect, see generally David Arkush & Jon Hanson, Situating Emotions (July 2004) (unpublished manuscript, on file with authors).


\textsuperscript{338}. Crockett, supra note 248, at 46-47.

\textsuperscript{339}. See id. at 46.

the extent to which we rely on schemas in our judgments. But the influence of our motivations is far greater than that: they influence also what evidence we look to and remember, and how we interpret or scrutinize the evidence that we encounter. Indeed, "people's goals are perhaps the most important determinants of schema use."

In this section, we will highlight several types of goals that influence schema use. While we survey a number of influential and common motives, we will focus primarily on what we call the "schema-protection" motive and the particular mechanisms by which individuals pursue that motivation. We do this for three reasons: first, the schema-protection motive stems in part from the same underlying motive that encourages our use of schemas in the first place; second, the other motives are discussed more fully in other work; third, and most important, the schema-protection motive is the most relevant for understanding how we are categorically biased and how those biases may adversely influence the reasoning of legal scholars and policymakers.

(a) The Motive for Accuracy

One of the most obvious (though not necessarily influential) motives is the motive to be or seem accurate in one's beliefs. It would seem that virtually everyone, to some extent, wants to be accurate in the inferences that they draw. Experimenters have found that the presence of an accuracy motive will affect the extent to which individuals rely on schemas to draw conclusions rather than on more data-driven attention to the individual attributes of the information at hand. For example, in one experiment in which individuals were provided with profiles of patients, those individuals given an explicit instruction "to form an accurate impression" paid more attention to individuating conditions than did subjects that were not given that explicit goal. Of course, an explicit instruction need not be present for individuals to possess a motive for accuracy. We will have more to say about this motive below and

341. As Ziva Kunda explains, "motivation... may influence which concepts, beliefs, and rules we apply to a judgment; we may be especially likely to apply those that are congruent with our goals." KUNDA, supra note 111, at 211.
342. See FISKE & TAYLOR, supra note 111, at 178.
343. See Hanson & Yosifon, The Situational Character, supra note 51.
344. Relatedly, it is generally considered "a sign of weakness to show or to admit to inconsistency [among beliefs or between beliefs and behavior], and people will often go to great lengths to justify apparent inconsistencies." FISKE & TAYLOR, supra note 111, at 231.
346. See FISKE & TAYLOR, supra note 111, at 157.
especially as it is limited by the schema-protection motive. First, though, we want to discuss a sample of the other types of motives that tend to be less obvious and that, as we will describe, are somewhat constrained by the motive for accuracy.

(b) The Motive to Self-Affirm

In virtually every way imaginable, most people tend toward self-affirming or self-enhancing attitudes and cognitions. Indeed, "if there is any theme that emerges again and again in social psychology it is that the [situational character] is a prideful one." On an individual level, people tend to hold an exaggerated sense of their own abilities, talents, intelligence, morality, and social skills, among other things. Similarly, the same type of motivated reasoning is typical with regard to people's assessments of the groups, institutions, and situations with which they identify. In addition to believing that we are good and that the groups to which we belong are good, we also tend to believe that our world, and the larger systems within it, are good and just. Thus, we are inclined to presume that, on the whole, people get what they deserve and deserve what they get. In these ways and others, people are self-affirming in construing their environs.

In several ways, this general motive appears to be directly connected to people's reliance on stereotypes. People's desire to see themselves as more desirable leads them to see their ingroups as more desirable and outgroups as less desirable. And when people's self esteem is threatened

347. See infra text accompanying notes 374–454.
348. For a far more detailed rendition of this brief summary of the motive to self-affirm, see Hanson & Yosifon, The Situational Character, supra note 51, at Part III.C.2.b.i.
350. See Fiske & Taylor, supra note 111, at 80–81; Hanson & Yosifon, The Situational Character, supra note 51, at Part III.C.2.b.ii.
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or the system is criticized, their tendency to rely on negative stereotypes of others increases.\textsuperscript{353}

(c) The Accountability Motive

The accountability motive—"the implicit or explicit expectation that one may be called on to justify one's beliefs, feelings, and actions to others"\textsuperscript{354}—overlaps significantly with the accuracy motive, though few of us are as conscious of it in ourselves, as the evidence suggests that we should be. In their review of the psychological research on accountability, Jennifer Lerner and Philip Tetlock found (among other results) that individuals are more likely to adjust their views to those of their audience\textsuperscript{355} and that, when the views of the audience are not known, individuals will engage in "preemptive self-criticism," thinking in "more self-critical, integratively complex ways in which they consider multiple perspectives on the issue and try to anticipate the objections" that others might raise.\textsuperscript{356}

When people know that they will be accountable for their views on certain topics, they are likely to devote more cognitive resources to evaluating those topics. The fear of invalidity rests on people's desire, revealed also in the accuracy motive, to not be perceived as wrong or inconsistent.\textsuperscript{357} When accountability is an important objective, people tend to muster the additional cognitive resources required for data-driven processes, utilizing those processes rather than the schematic processes that are more prone to error yet conserve valuable resources.\textsuperscript{358} Subjects in this condition will actively try to anticipate the objections or counter-arguments that might be raised against their positions. If people anticipate having to justify their positions or judgments, they should pay close attention to the

\textsuperscript{353} See, e.g., Steven Fein & Steven J. Spencer, Prejudice as Self-Image Maintenance: Affirming the Self Through Derogating Others, 73 J. PERSONALITY & SOC. PSYCHOL. 31, 31 (1997); Jost & Hunyady, supra note 351, at 18–20. For a summary of the literatures on this topic, see Hanson & Yosifon, The Situational Character, supra note 51, at Part III.C.2.b.


\textsuperscript{355} Lerner & Tetlock, supra note 354, at 256.


\textsuperscript{357} See LEYENS ET AL., supra note 166, at 134.

\textsuperscript{358} See id. at 135–37.
available evidence, they should avoid judgments based on insufficient information, and they should try to integrate inconsistent data.\textsuperscript{359}

Thus, in experiments where subjects are told that they will be interviewed about their inference processes after they have made a judgment, those subjects are more likely to invest more cognitive energy toward being accurate and to forming more complex impressions.\textsuperscript{360}

(d) The Motive to Conform

Perhaps in part to avoid the cognitive costs of accountability and certainly in part because we are social beings, we face a strong interior motive to conform our attitudes and perceptions with those around us—particularly those with whom we identify. And that motive influences the schemas we employ as well as the way we construe information through those schemas. That motive is demonstrated extremely well in one of the first experiments to identify it.

Solomon Asch believed that individuals were quite willing to buck the crowd when confronted with perceptions or attitudes that differed from their own. He began with what should have been an easy demonstration of that belief.\textsuperscript{361} Asch showed a group of eight individuals—seven of who were confederates with Asch, and one of who was the subject—cards with lines on them, such as those in Figure 13, below.\textsuperscript{362}

**FIGURE 13. Asch's Experiment**

\begin{figure}[h]
\centering
\includegraphics[width=0.5\textwidth]{asch_experiment.png}
\caption{Asch's Experiment}
\end{figure}

\textsuperscript{359} Id. at 136.


\textsuperscript{361} This is a brief summary of the seminal research in S.E. Asch, Effects of Group Pressure Upon the Modification and Distortion of Judgements, in GROUPS, LEADERSHIP AND MEN 177 (Harold Guetzkow ed., 1963). See also Rod Bond & Peter Smith, Culture and Conformity: A Meta-Analysis of Studies Using Asch's (1952b, 1956) Line Judgment Task, 119 PSYCHOL. BULL. 111 (1996) (summarizing the hundreds of studies based on Asch's original).

\textsuperscript{362} See Asch, supra note 361, at 178.
The eight individuals were asked which line on the right was the same length as the line on the left ("X").

Take a look. Is there any doubt that the correct answer is "B"? It seems pretty obvious and presumably that is the answer that we would all give no matter what other people thought. That was Asch's expectation. And yet when subjects were asked as part of a group, and the other members of the group unanimously agreed that the correct answer was "A," many subjects answered "A." The numbers varied depending on the experiment, but the basic lesson of the experiment is that what we perceive can be influenced very much by what those around us perceive. These results might simply be seen as another manifestation of the accountability motive. In part, they are, but Asch's experiments also demonstrate that some subjects (including those who were not required to announce their answers to the group and thus were not obviously accountable to it) tended to construe the lines as the group seemed to. That is, they were not simply saying what they thought the group wanted to hear, they actually began to believe that "X" and "A" were matches and that "X" and "B" were not.

(e) Positional Motivations

As we have already hinted, people tend to rely on schemas that help justify or legitimate their positional goals, needs, or beliefs. By "positional," we mean to emphasize our placement, as compared to others, along any number of dimensions—including wealth, power, and influence. We mean the set of motives or goals that people typically think of when they speak of the prototypical motives or goals influencing people's views—vested interests and the like. It is not uncommon, for instance, to suspect that people with financial ties to an outcome will be motivated to choose arguments that encourage that outcome. More broadly, our desire to protect or advance our positions along various dimensions often plays a significant role in our thinking, and it does so largely through the use of schemas.

A person who benefits from, and is motivated to maintain, a cultural power advantage will tend to adopt, maintain, and rely on schemas that reinforce the belief that, for instance, he is somehow superior or otherwise deserving of that advantage. Margaret Wetherell and Jonathan Potter

363. See id. at 178-79.
examine the ways in which white majority "Pākehā" New Zealanders used categories of race, culture, and nation as "contrastive categories to define the Māori people [indigenous New Zealanders] as a distinct biological group of people who shared similar physical characteristics, values and personality characteristics." Classifying the people by these categories created a false or exaggerated distinction between the Pākehā majority and the Māori people. Thus, what appeared to be an automatic and natural process was driven largely by underlying motivations to retain a superior position in society.

History is full of such examples, many of which fall closer to home (making them much more difficult to see or accept). The tendency to dehumanize oppressed groups—which can be thought of as a motivated categorization process—is a significant historical theme. The historical categorizations and the related schemas for groups such as women, slaves, and Jews are rife with evidence that those schemas were far from natural but were created and maintained for particular purposes. Indeed, Hitler's


367. Augustinos & Walker, supra note 114, at 270.

368. It is also true that individuals and groups who enjoy less power, wealth, influence, or other positional privileges tend to adopt schemas that serve their advancement. It is worth highlighting that those individuals will be disadvantaged in attempting to convince others of the appropriateness of their schemas. This is true for several reasons. First, existing schemas are already skewed in ways that advantage the relatively privileged. See generally Chen & Hanson, supra note 90; Chung & Hanson, supra note 90 (describing the effects of the dominant metascript of policy analysis and macroscript of corporate law); Hanson & Yosifon, The Situation, supra note 51 (describing the ubiquity and effects of dispositionism and introducing the dynamics of power economics and deep capture); Hanson & Yosifon The Situational Character, supra note 51 (describing the ubiquity and effects of dispositionism); Ronald Chen, Client Primacy and Shareholder Primacy: The Invisible Hand of Corporate Law and the Ethics of Corporate Counselors (Working Paper 2004, on file with author) (examining the way in which the macroscript of corporate law has influenced dominant critiques of the legal ethics macroscript as it is applied to corporate counselors); Ronald Chen, The Illusion of Ethics: The Legitimating Schemas of the Legal Profession (Working Paper 2004, on file with author) (examining the way in which the competition to influence our categories, schemas, and broader situation has shaped the legal profession’s approach to and understanding of legal ethics). Second, relatively powerful and advantaged persons exercise the most influence over those institutions with the greatest ability to alter or maintain schemas. See Hanson & Yosifon, The Situation, supra note 51 (providing evidence of deep capture); Jon Hanson & Brandon Hofmeister, Situational Entrepreneurialism: The Mechanisms of Deep Capture (unpublished work in progress, on file with authors) (describing strategies, tactics, and levels of deep capture). And, third, even those who are disadvantaged under existing arrangements have a strong motive to legitimate existing systems. That system-legitimacy motive commonly leads the less powerful, less wealthy, and otherwise less endowed, to embrace the schemas and stereotypes that make sense of their position. See, e.g., Benforado, Hanson & Yosifon, Broken Scales, supra note 254, at Parts V–VI (describing the influence of dispositionist stereotyping to “make sense” of the obesity epidemic).

369. See Hanson & Yosifon, The Situation, supra note 51, at 308–28 (describing this phenomenon in the antebellum South).
mixed motives—on one hand wanting to maximize the strength of his military, and on the other hand hoping to eliminate those humans who he considered inferior—provide horrific evidence of the nimbleness of our self-serving categories and schemas.\textsuperscript{370} Similarly, there are numerous examples in which stereotypes have changed as circumstances have changed in order to maintain the underlying power structures.\textsuperscript{371}

This is not as much a historical phenomenon as it is a human one and a major reason that history keeps repeating itself. Thus, the positional motive seems to play a major role in most policy debates today.\textsuperscript{372} Most individuals tend to be fairly sensitive to this motive, but only selectively. Unfortunately, it is a motive that we tend to see in those with whom we disagree and not in ourselves. In other words the vested interest schema is itself motive sensitive.\textsuperscript{373}

(f) The Motive for Closure

There are other motives that influence our schema choice and use that are not as noticeable. Social psychologists have demonstrated, for instance, that in many circumstances we are subject to a strong (though usually unconscious) need to draw a conclusion and to resolve uncertainty—even if that means limiting our search for information that could undermine our initial hypothesis.\textsuperscript{374} In terms familiar to economists, this “need for closure” increases the “cost[] of being indecisive”\textsuperscript{375} and pushes people to find and maintain clear answers.\textsuperscript{376}

The phenomenon may be demonstrable visually. There is considerable evidence that we tend to want to “connect the dots,” to create a simple, closed image. That we humans have been, for at least the last 6000 years, seeing and naming imaginary constellations such as the Big and Little Dippers, not to mention the far more elaborate Orion and his hunting dogs, evinces that tendency. But the tendency is one that we do not reserve solely

\textsuperscript{370} See supra text accompanying note 68.
\textsuperscript{371} This dynamic is depicted powerfully in films like \textit{Ethnic Notions} and \textit{The Celluloid Closet}.
\textsuperscript{372} For an analysis of the role of such motivated schemas in the obesity debate, see Benforado, Hanson & Yosifon, \textit{Broken Scales}, supra note 254. For a similar analysis of its role in the debates about tort reform and political correctness, see Benforo\textapostrophe d & Hanson, Na\textapostrophe ve Cynicism, \textit{supra} note 254.
\textsuperscript{373} See \textit{Hanson & Yosifon, The Situational Character, supra note 51}, at Part III.C.2.d.i. See \textit{generally} Benforado & Hanson, \textit{Na\textapostrophe ve Cynicism, supra} note 254 (considering the effect on policy debates of the tendency to see bias in others but not in ourselves).
\textsuperscript{375} FISKE & TAYLOR, \textit{supra} note 111, at 164.
\textsuperscript{376} LEYENS ET AL., \textit{supra} note 166, at 134.
for the heavens or solely for the sake of making tractable our astronomical window. The tendency occurs for relatively mundane and manageable images. Look at the following night-sky-like image.

**FIGURE 14. The Night Sky**

![Image of eight dots forming a circle.]

Do you see anything besides eight dots on a dark background? Chances are you perceive a circle. If this were a constellation, it might be named the "Big O":

**FIGURE 15. The Night Sky II**

![Image of a circle formed by connected dots.]

The "O," however would probably not stand for "Overlapping Squares." Most of us do not see, though we could, overlapping squares or an eight-pointed star.
As this example helps illustrate, it is not just that we seek "closure," it is also that we seek simplistic closure.

The Kanizsa Triangle is one of the oldest and best-known examples of this. How many triangles do you see in the following image?

Many people see two equally sized equilateral triangles. And when they look long enough at the upright triangle, they actually begin to "see" the lines connecting the three pac men and separating the inside of the triangle from its context.

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Again, even when there is not closure, our minds are eager to see it. Here is the worst part: our attempts to connect the dots often lead us astray for we are often "seeing" what is not there.

To gain a better sense of how our vision can mislead us, look at the following illustration. If you were to create a long diagonal line in the figure below, to which line segment, A or B, would you connect line segment C?

**FIGURE 18. Lines**

Many guess "A." And to many others, the answer is not obvious. The correct answer is "B"—as a well-placed straight edge will verify. Similarly, when asked to identify the tallest figure in the following illustration, the answer to many (who have not seen this illusion before) is obvious: the humanoid on the right.

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379. Ehrenstein's Optical Illusion is similar in effect:

380. This is an adaptation of Poggendorf's Illusion and is available at *Image Gallery #5*, http://eyetricks.com/0501.htm (last visited Sept. 21, 2004).
In fact, they are all three the same height. We find it nearly impossible to avoid construing the lines as indicating linear perspective.\textsuperscript{381}

As we have been stressing, these sorts of illusions and errors are not merely optical. We see and connect dots and create closure—whether it is there are not—in all aspects of our thinking. Studies have found, for instance, that when individuals are asked to watch a person deliver a

\textsuperscript{381} This illusion is available at Image Gallery #5, http://www.eyetricks.com/0507.htm (last visited Sept. 21, 2004). This is an adaptation of the “Ponzo Illusion,” available at http://mathworld.wolfram.com/PonzoIllusion.html (last visited Sept., 2004).

\begin{center}
\begin{tikzpicture}
\draw (0,0) -- (1,0) node[midway, above] {a};
\draw (0,0) -- (0,1) node[midway, right] {b};
\end{tikzpicture}
\end{center}

In this basic illusion, the horizontal line at the top (“a”) is seen as longer than the horizontal line at the bottom (“b”).

\textsuperscript{382} This illusion is available at http://mathworld.wolfram.com/ScintillatingGridIllusion.html (last visited Sept. 21, 2004).
speech, they tend to infer that the speaker believed the content of her speech, despite knowing that the speaker had not chosen to read the speech or its subject.\(^{383}\) For subjects who are more motivated to reach closure, however, the "correspondence bias"—or the increased likelihood of estimating that the speaker's attitude corresponds to the speaker's behavior—is even higher.\(^{384}\) Thus, individuals are less likely to invest greater cognitive energies in evaluating the situation and more likely to rely on schematic processes (in this case, dispositionism) when there are incentives for producing determinate answers.

The need for closure wields more or less influence depending on the setting. Numerous experiments demonstrate that this need is more intense the greater the time pressures or the more cognitively busy we are.\(^{385}\) And this contributes to our desire, not just for closure, but also for simplicity. It may be helpful to think of our brains as computers capable of some, but not much, multitasking. Think Intel 386, not Pentium 4, and certainly not Itanium\(^2\). The more tasks underway and the more complex an individual task, the slower and sometimes less effectively any one of them can be carried out—leading us to (sometimes by choice and sometimes by error message) close one or more operations. In human terms, the tendency is often expressed in common phrases such as the following: "I can't think about that right now"; "One thing at a time"; "Bracket that"; and in more jargonistic, legal-economic phrases such as "everything else equal," "ceteris paribus," "partial equilibrium analysis," and "second-best analysis."\(^{386}\)

\(^{383}\) For a summary of numerous experiments demonstrating this "fundamental attribution error" or "correspondence bias," see Hanson & Yosifon, The Situation, supra note 51, at 158–59, 167–74, 253–59.

\(^{384}\) For example, subjects were told that they would be able to watch a more enjoyable videotape to motivate them to reach closure. See Donna M. Webster, Motivated Augmentation and Reduction of the Overattribution Bias, 65 J. PERSONALITY & SOC. PSYCH. 261 (1993).


\(^{386}\) In a subsequent article, we describe the various ways in which economists and legal economists treat closure as one of the primary goals and benefits of their approach. See Chen & Hanson, supra note 86. Likewise, policymakers prefer policy theorists who can generate clear, concrete answers, even among economists. So it was that President Truman once pleaded, "Give me a one-handed economist." Thus, although it may be at times laughable to "assume a can opener," it is often precisely what is desired. The tendency is by no means limited to economists. Cf. Richard H. Fallon, Jr., Should We All Be Welfare Economists?, 101 MICH. L. REV. 979, 1007 (2003) (citing Daryl J. Levinson, Framing Transactions in Constitutional Law, 111 YALE L.J. 1311 (2002)) ("Nearly all legal analysis . . . operates under framing constraints, with many contingent elements of the social, economic, and legal structure implicitly accepted as given.").
The desire for closure should not be understood solely in terms of a desire to avoid overtaxing the capacities of our organic processors. There are "psychic" benefits to closure as well (perhaps these are simply another version of the same benefit). In a world in which ambiguity is the rule and actions and decisions are inevitable, closure enables people to move forward (or at least believe they are moving forward), free of the debilitating shadow of counterfactualizing uncertainty. This tendency is popularly recognized as the need for finality or the tendency to avoid complex, ambiguous "gray" conclusions and to embrace more "black and white" answers. It thus may also help partially explain the attractiveness of fundamentalist belief systems—including "knee-jerk liberalism"—and of mathematical "proofs" of social scientific claims.

In short, people tend, "other things equal," to prefer schemas that lead to closure and to apply any given schema in a way that generates more closure.

(g) The Schema-Protection Motive

A different type of motive—one that we rarely see, particularly in ourselves—also plays a powerful influence on schema function. We are motivated to protect our schemas. And that is true not just because they serve our positional goals and facilitate our desire for closure. Understanding the motive for schema protection is critical to an understanding of the ways in which all forms of motivation affect the choice and application of schemas. The schema-protection motive can be thought of as a "metamotive": its end result is to protect schemas that are, in turn, driven by other motives.

Given the array of motivations, it should come as no surprise that, in addition to the times in which any one schema can be challenged by information that is inconsistent with that schema, there will be times in which multiple schemas will oppose one another. The motive to protect our schemas includes a motive to resolve those tensions or to reduce the dissonance that our conflicting motives can create. In this section, we want to shed some light on the mechanisms employed to mitigate such cognitive crises.

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387. We want to protect our schemas because they make our cognitive life simpler, but we also want to protect our schemas because they are motivated by all of our other motives. Thus, in this section, when we discuss the mechanisms to protect our schemas, it is important to notice that the motive behind the use of those mechanisms is to be found in all of our motives. For that reason, we refer to the motive to protect our schemas as a metamotive.
The motive of schema protection follows simply from the purpose that schemas serve. As we noted at the outset, we use schemas to focus our attention and allow us to make reasonably reliable inferences with comparatively little data. They render comprehensible, predictable, and consequently manageable our complex worlds. They help give us what we crave—control, or at least the illusion of control.\footnote{388 See Hanson & Yosifon, The Situational Character, supra note 51, at Part III.C.2.b.ii (describing the illusion of control).} For these reasons, our schemas are often valuable to us, and we are motivated to preserve them, lest we be forced to negotiate our surroundings without them.

One manifestation of the schema-protection motive has come to be called confirmation bias.\footnote{389 See Jon D. Hanson & Douglas A. Kysar, Taking Behavioralism Seriously: The Problem of Market Manipulation, 74 N.Y.U. L. Rev. 630, 647–50 (1999).} Roughly, people will focus on or highlight evidence that tends to support their schemas, theories, and beliefs and ignore or downplay disconfirming facts.\footnote{390 See id.} Doing otherwise would render their schemas vulnerable to frequent, perhaps constant, reevaluation, thus defeating one of their chief benefits. The phenomenon noted above, that individuals will sometimes “remember” facts that do not even exist simply to support the conclusions they desire—can be understood as an extreme form of confirmation bias.\footnote{391 Both of these phenomena support the validation phase, discussed below. See infra text accompanying notes 402–03. For examples of the confirmation bias in legal-theoretic literatures, see Hanson & Yosifon, The Situational Character, supra note 51.}

Our motive to protect our schemas is often stronger than it might initially appear. This is true because the threat to a schema is rarely limited to the single issue and schema in which the threat emerges. Behind our view of any one issue are often one or more schemas that are connected to our view of many other issues and our more general, comforting sense that we have a reasonably reliable understanding of the world. When our view on a single issue is challenged, our reaction will often be more or less connected to the need to protect the schema or schemas that helped generate that view. In that sense, there can be a slippery slope effect, as cognitive compromises in one context may threaten the stability of many other beliefs and attitudes.

Although our schemas do need some protection, the resilience with which our most biased schemas persist is quite impressive. There are many strategies (most of them automatic) that our cognitive processes employ to apply the schemas that our other motivations might encourage, and to
avoid the need for schema refinement, restructuring, or abandonment. Augoustinos and Walker summarize the evidence with the observation "that well developed schemas generally resist change and continue to exist even in the face of inconsistent and contradictory evidence."392 There are many ways by which we may protect our biased schemas, and, in the upcoming subsections, we focus on five of these processes: the cognitive evasion of (1) inconsistent information or (2) inconsistent schemas, the creation and exploitation of (3) ambiguity or (4) subtypes, and (5) the effect of self-fulfilling schemas.

(i.) Evading Challenging Information (and Altering Cognitive Effort)

Given our motive to protect our schemas, and given how schemas influence the information that we acquire and how we construe it, perhaps the most obvious means of defending our schemas against challenging information is simply, if unconsciously, to ignore that information.393 Just as we can sometimes steer our car around a traffic jam, we can sometimes manage to steer our cognitive processes around a cognitive crisis. For example, various societies, including ours, found an easy strategy to protect the predominant schema for women's abilities: simply ignore women's educational achievements—do not award degrees, do not codify achievements.394 But ignoring information is only the most obvious strategy. Evasion of such information can be subtler than simply ignoring any information that may cause doubt in the appropriateness of schemas; more often, as we discuss in this section, individuals will evade such information by varying the amount of cognitive effort that they invest in examining the inconsistent information.395

Motivation "may also influence our mode of processing information, determining whether we rely on quick and easy inferential shortcuts [such as schemas or heuristics] or rely on elaborate, systematic reasoning."396 In a way that contributes to confirmation bias,397 motivations influence the

392. AUGOUSTINOS & WALKER, supra note 114, at 53.
394. See supra text accompanying notes 53–54.
396. KUNDA, supra note 111, at 211.
397. See supra text accompanying notes 387–91 (describing the conformation bias).
amount of cognitive energy an individual will invest.\textsuperscript{398} To protect their schemas, individuals will often vary their cognitive efforts depending on the supportiveness of the evidence before them, scrutinizing disconfirming evidence and embracing confirming evidence. As several experiments have demonstrated, individuals are more likely to overlook the problem of small sample sizes when the findings based on the samples suit their goals, yet apply a much more stringent rule regarding sample sizes when the data suggests a contradictory conclusion.\textsuperscript{399}

We are not aware, however, that our burdens of persuasion and proof are shifting depending on our motives and our existing schemas. "We don't realize that both the evidence that we have recruited and the rules we have used to evaluate it are biased by motivation. If our goals had been different, we might have recruited different evidence and used different rules."\textsuperscript{400} As Kunda summarizes,

Motivation may affect not only which memories, beliefs, and rules we access but also the amount of effort we invest in searching for relevant beliefs and rules in the first place. . . . When we come across evidence that supports our desired conclusions, we may accept it at face value. But when we come across comparable evidence that challenges our desired conclusions, we may evaluate it more critically and work hard to refute it.\textsuperscript{401}

Social psychologists have discovered that the efforts we marshal in pursuit of our schema-protection motive vary according to how firmly established or secure the schema is in our cognitive processing. Evidence of these variations can be observed in the "life cycles" of schemas.\textsuperscript{402} In the early stages of schema development, people will somewhat zealously ignore inconsistent information. In the later stages, once a schema has matured and become firmly rooted in our cognitive landscape, we are more willing to consider and attempt to explain inconsistent information. Fiske and Taylor describe this process as follows:

Initially, people do not have much of a schema, so incongruencies may not even be perceived as such. As people form schematic hypotheses, they focus on reconciling inconsistencies and so remember them . . . .


\textsuperscript{399} KUNDA, supra note 111, at 229.

\textsuperscript{400} Id. at 225. Kunda goes on to note that "although motivation can bias our judgments, it does not blind us to reality. Because we feel compelled to be rational, we will only draw our desired conclusions if we can justify them." Id.

\textsuperscript{401} Id. at 230.

\textsuperscript{402} See supra text accompanying notes 275–88.
Once formed, people attempt to validate their schemas, focusing at this stage on consistent information. When schemas are firmly in place, people who are particularly expert have the capacity and so the option to notice and use inconsistent information, in addition to consistent information. In short, it may take some minimal experience for people to notice inconsistencies, and then they tend to focus on the inconsistent material, but when they are validating the schemas, they focus on the consistent material. Experts are more flexible, able to use inconsistent material because of their increased capacity.

One implication of this multiple-stage view of schema development is that inconsistent information will tend to be considered when and to the extent that the schema can accommodate the information. That “converts” are sometimes perceived as close-minded may, if true, reflect the fact that a schema is a mere sapling on the cognitive landscape. That experts appear open-minded, seemingly independent of the influence of their schemas, is only partially correct. While they are often willing to consider inconsistent evidence, this may sometimes be because of the deep roots of their schema and the resultant confidence in their ability to brave the high winds of conflicting information.

It is important to emphasize before moving on that the human tendency to see only schema-confirming features of the environment may result not only from our own motives, but also from the motives of those around us. Often it is other people who can activate our schemas and thereby influence what we do or do not see.

(ii.) Avoiding Conflicting Schemas

Another way in which we defend our schemas results from their operation—automatically, outside of our awareness and, roughly, one at a time. Because different schemas are often not simultaneously activated, contradictions across schemas may be avoided and may tend to go unnoticed. So it was that the antebellum plantation owner believed that his slaves were mentally inferior at the same time that he understood that his own children’s mental development depended importantly on the very education that his slaves were prohibited by law and custom from obtaining. Kunda explains that

404. See Hanson & Yosifon, The Situational Character, supra note 51 (describing the many ways that our interior situation leaves us vulnerable to manipulation).
people have an enduring network of knowledge and associations and . . . they selectively bring to mind different subsets of this knowledge base on different occasions. Different configurations of self-conceptions, beliefs, and affective reactions may be activated in different situations, resulting in different, often inconsistent self-conceptions and behavior.\textsuperscript{406}

In that way, it is often possible to protect one schema from another potentially conflicting schema. While individuals may schema-jump, schemas are generally considered to be independent of each other, and therefore there is no reason to believe that conflicting schemas would necessarily be problematic for an individual. "Unlike nodes in an associative network model, [schemas] are not interlinked. Thus, if one schema becomes active this has no necessary implications for other, related schema[s]."\textsuperscript{407}

In circumstances that force people to reconcile conflicting schemas, researchers have found evidence that individuals will resort to causal reasoning to make sense of the schemas.\textsuperscript{408} To reconcile conflicting concepts such as "blind lawyer" or "Harvard-educated carpenter," individuals generated logical reasons behind the conflicting stereotypes—the blind lawyer was described also as hard working, because she had overcome the obstacles of law school; the Harvard-educated carpenter was also "nonmaterialistic and a nonconformist, even though neither of these attributes was used to describe someone identified only as a Harvard-educated person or only as a carpenter."\textsuperscript{409} When forced to reconcile the concepts, individuals relied upon their knowledge of the world, accurate or not—and not simply of the categories before them—to make sense of the seemingly inconsistent concepts.\textsuperscript{410}

We have seen evidence of this sort of cognitive behavior before. For instance, the tendency to misremember information in order to reconcile conflicting information,\textsuperscript{411} just like the tendency to see a triangle where none exists,\textsuperscript{412} are both instances of the same desire to alleviate schematic tensions. Generally, however, individuals will be able to avoid such

\textsuperscript{406} See Kunda, supra note 111, at 463.
\textsuperscript{408} See Kunda, supra note 111, at 40. The subjects were specifically asked to reconcile the seemingly inconsistent notions.

\textsuperscript{409} Id.
\textsuperscript{411} See supra text accompanying notes 281–93.
\textsuperscript{412} See supra Figure 17.
conflicts by activating schemas one at a time, and thereby protecting the schema they desire without need for reconciliation.

(iii.) The Role of Ambiguity and Conflicting Motivations

Avoidance or evasion is not, however, always possible or necessary. There are numerous means of more or less confronting challenging or conflicting information in a way that avoids cognitive crises. In this section, we will focus on the liberating role of ambiguity.

The schema-protection motive is famously illustrated by the voyages of Christopher Columbus.\textsuperscript{413} Columbus made four voyages to the "New World," always believing that he had made it to Cathay (Asia). The islands that he "discovered" did not meet all of his expectations, but descriptions by Marco Polo did not necessarily conflict with what Columbus was observing.\textsuperscript{414} Indeed, Marco Polo had described thousands of islands in the Indies, where Columbus believed he was; thus, there was enough ambiguity to enable Columbus to maintain his theory.

Why did Columbus think that he had found Asia? Because that is what he expected and wanted to find, and that was almost the only thing he had reason to believe there was to find. Bartolome de las Casas, historian and friend of Columbus, wrote, "When [Columbus] had made up his mind... he was as sure he would discover what he did discover, and find what he did find, as if he held it in a chamber under lock and key."\textsuperscript{415} Columbus's schemas had no place for another continent—much less a pair. Once European explorers discovered that they were exploring not Asia, but a land they had not expected, that did not prevent them from discovering and rediscovering what their schemas told them to expect to find—for example, the Northwest Passage.\textsuperscript{416}

History is full of examples of people interpreting ambiguous evidence in self-affirming ways, a phenomenon that has been borne out in social psychology research. Consider an experiment by H. Andrew Sagar and

\textsuperscript{413} Accounts suggest that Columbus possessed a strong schema-protection motive. See Samuel Eliot Morison, Admiral of the Ocean Sea 91 (1942). Samuel Morison writes of Columbus's optimistic nautical calculations: "Of course [his] calculation [was] not logical, but Columbus's mind was not logical. He knew he could make it, and the figures had to fit." Id. See also id. at 122–23 (describing how Columbus "eagerly picked up" statements about the narrowness of the ocean and that he "grasp[ed] at every bit of 'evidence' as to an excessive length of Asia").

\textsuperscript{414} Morison explains that Marco Polo's story "was the foundation of Columbus's ideas regarding the accessibility of Asia..." Id. at 94.

\textsuperscript{415} Id. at 137.

\textsuperscript{416} See generally Glyn Williams, Voyages of Delusion: The Quest for the Northwest Passage (2003) (recounting the quest for a route through or around the Americas).
Janet Ward Schofield demonstrating how stereotypes bias the interpretation of ambiguous events.\textsuperscript{417} Subjects were presented with four ambiguous drawings in which one person was either bumping another person, poking another person, taking a pencil from another person, or requesting food. They rated the actor in each scene as either mean, threatening, playful, or friendly. Revealing the influence of schemas over interpretations of ambiguous events, white and African American subjects rated identical behavior as more mean and threatening when the actor was African American.\textsuperscript{418} Similarly, in an experiment conducted by David Dunning and David Sherman, subjects made stereotype-consistent inferences about women and men participating in gender-ambiguous activity.\textsuperscript{419} For instance, in response to the statement "When Jill (Jack) found out that her friend had been murdered, she (he) became very upset," subjects who read the sentence with Jill in it incorrectly "remembered" that she had been very sad, while those who read the sentence with Jack in it "recalled" that he had been angry.\textsuperscript{420}

Consider also an experiment in which subjects were asked to rate themselves according to such concepts as "sensitive," "idealistic," "well read," and "punctual."\textsuperscript{421} In the more ambiguous characteristics—sensitive and idealistic—individuals rated themselves more extraordinary than they did on the more clearly defined traits—well-read and punctual.\textsuperscript{422} The experiment illustrates well the role of ambiguity in easing potential tension between motivations. Where the characteristic is muddy or difficult to measure, subjects could more easily view themselves in self-affirming terms, without implicating the motive for accuracy. Recent experiments by Jason Dana, Roberto Weber, and Jason Kuang demonstrate a similar role for ambiguity in helping individuals maintain a self-affirming view of themselves as "fair."\textsuperscript{423}


\textsuperscript{418}. \textit{Id.}


\textsuperscript{420}. \textit{Id.} at 468.


\textsuperscript{422}. \textit{Id.}

Research indicates that confirmation bias will be stronger when the evidence is ambiguous or more complex.\textsuperscript{424} Christopher Hsee's work on "elastic justification" suggests the importance of ambiguity in unleashing motivated reasoning.\textsuperscript{425} In one experiment, Hsee found that when a salesman who must find the most buyers for a product is faced with the choice of traveling to two possible cities, one with thirty to ninety buyers and one with forty buyers, the uncertainty will lead him to justify either choice in the name of his stated purpose of selling.\textsuperscript{426} For example, if the city with forty buyers is a more enjoyable city, the ambiguity will lead him to estimate the expected value of the buyers in the less desirable city as being less than forty,\textsuperscript{427} and vice versa if he sees the other city as more enjoyable.

Just as ambiguity can ease the tension between conflicting motives or the problem of inconsistent evidence, the absence of ambiguity can heighten it. As a result, accuracy goals would seem to temper the influence of other motivations. But given that most situations are open to interpretation, the motive for accuracy will rarely totally dominate other motives. As we reviewed above, people do not confront disconfirming evidence openly; they often find ways to interpret it as confirmatory, to disqualify it as flawed, or to distract themselves from scrutinizing it closely.

Still, people are unreasonable within reason. Although they manage to maintain stereotypes by ignoring inconsistent information,\textsuperscript{428} the adherence to these stereotypes has limits. When inconsistencies are significant—too significant to ignore—individuals are more likely to incorporate the inconsistent information into their cognitive processes.\textsuperscript{429} This, however, is

\textsuperscript{118} HARV. L. REV. (forthcoming 2005) (examining the implications of this evidence for consumer-choice regulation).

\textsuperscript{424} See Hanson \& Kysar, supra note 389, at 648.


\textsuperscript{426} See Hsee, supra note 425, at 330–31.

\textsuperscript{427} See id.


\textsuperscript{429} See Kay Deaux \& Laurie L. Lewis, Structure of Gender Stereotypes: Interrelationships Among Components and Gender Label, 46 J. PERSONALITY \& SOC. PSYCHOL. 991, 1002–1003 (1984); Hamilton \& Rose, supra note 428, at 842; Anne Locksley, Eugene Borgida, Nancy Brekke, \& Christine Hepburn, Sex Stereotypes and Social Judgment, 39 J. PERSONALITY \& SOC. PSYCHOL. 821, 821
"most likely to occur when the data are unambiguous—when there is no room for interpretation." As Peter Gollwitzer and Gordon Moskowitz write, "Diagnostic information can overpower what waits at the top of the head by 'hitting us over the head' with its clarity." Similarly, Kunda clarifies that

[m]otivation can color our judgments, but we are not at liberty to conclude whatever we want to conclude simply because we want to. Even when we are motivated to arrive at a particular conclusion, we are also motivated to be rational and to construct a justification for our desired conclusion that would persuade a dispassionate observer. We will draw our desired conclusion only if we can come up with enough evidence to support it. But despite our best efforts to be objective and rational, motivation may nevertheless color our judgment because the process of justification construction can itself be biased by our goals.

Even if strongly motivated to reach particular conclusions, we sometimes find ourselves challenged by opposing evidence. When the evidence is overwhelming, when we are left with no wriggle room, we are forced to relinquish our favored beliefs in deference to our motive for accuracy.

(iv.) Subtyping

For Columbus, South America posed a particular problem because it did not entirely fit his schemas—it did not seem like a mainland, but he knew it was too far south to be China. Rather than relinquish his schema-driven conclusion that he had found the short route to Cathay, Columbus—drawing upon the schemas primed for him by his religious and educational

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431. Kunda, supra note 111, at 224. See also Kunda, supra note 364, at 482–83 ("[P]eople motivated to arrive at a particular conclusion attempt to be rational and to construct a justification of their desired conclusion... only if they can muster up the evidence necessary to support it.").

432. Of course, it is possible to disregard the evidence by attributing it to some untrustworthy supernatural force. Attributing dinosaur bones to "Satan and his devilish desire to fool us into disbelieving creationism" is one such example:

[N]o matter how much these other sources might awe us with such tales, I feel that we should regard them with high suspicion as the deceptive voices of Satan and his cohorts. Remember too that the actual age of these "discoveries" is based on highly questionable scientific techniques such as carbon-14 dating which has a record of producing conflicting ages. The more I read this stuff & compare it with Scripture, the more I become convinced that it is all part of the Grand Deception.

upbringing\textsuperscript{434}—determined that South America was the Garden of Eden. The brilliantly colored birds and flowers that he encountered in South America seemed consistent with the paradise that he and others assumed had to exist somewhere. Accordingly, Columbus was able to absorb the information before him and to preserve his schema for the New World.

We have seen this sort of schema manipulation before. In our earlier examples, Hitler's ability to maintain a schema for the broad Jewish category even while he treated particular Jewish soldiers differently illustrates that process of subtyping. Rather than allow his recategorizations of soldiers to undermine his overall schema, his ability to subtype enabled him to view a consistency in his schemas that his actions seemed to belie.

Similarly, when Justice Bradley had to acknowledge that there were many women who remain "unmarried and not affected by any of the duties, complications, and incapacities arising out of the married state,"\textsuperscript{435} he was quick to describe these women as exceptions to the general rule. The paramount destiny and mission of woman are to fulfill the noble and benign offices of wife and mother. This is the law of the Creator. And the rules of civil society must be adapted to the general constitution of things, and cannot be based upon exceptional cases.\textsuperscript{436}

These historical accounts exemplify a fairly common schema-protection process: subtyping. When confronted with disconfirming information individuals can carve out a special subschema for that evidence in a way that preserves more general schema—like an "exception that proves the rule."

Reneé Weber and Jennifer Crocker conducted a number of experiments in which they tested individuals' reactions to disconfirming evidence of stereotypes and found the tendency to subtype to be quite strong.\textsuperscript{437} In their experiment, designed to test the resiliency of the lawyer stereotype as well-dressed, industrious, and intelligent, subjects were given descriptions of thirty lawyers. Each of those descriptions was three

\textsuperscript{434} See MORISON, supra note 413, at 63 ("In matters of the Christian religion, without doubt [Columbus] was a Catholic and of great devotion; for in everything he did and said or sought to begin, he always interposed 'In the name of the Holy trinity I will do this,' or 'launch this' or 'this will come to pass.'").

\textsuperscript{435} Bradwell v. Illinois, 83 U.S. 130, 141 (1872).

\textsuperscript{436} Id. at 141–42 (emphases added).

sentences, making ninety total descriptive sentences. Of those ninety sentences, thirty sentences were inconsistent with the lawyer stereotype (fifteen were consistent, and forty-five were irrelevant). Subjects who were presented with descriptions in which the thirty inconsistent sentences were concentrated on ten of the sample lawyers were less likely to generalize these characteristics and therefore less likely to change their stereotype than those subjects for who the thirty inconsistent sentences were distributed over each of the thirty sample lawyers. When individuals were able to subtype and thereby maintain their stereotypes, they did so; only when they were presented with examples, all of which defied the stereotype, did they exhibit a tendency to change their stereotypes.

Weber and Crocker’s findings regarding the propensity to subtype was supported by Miles Hewstone, Nicholas Hopkins and David Routh’s evaluation of stereotypes of police. In that study, an attempt to improve relations between police and students through a liaison program led students simply to recategorize the police that they had interacted with as being more similar to teachers and social workers, while retaining their overall stereotype of police.

Kunda concludes, “When we can, we subtype counterstereotypic individuals, and this enables us to maintain our global stereotypes.” In this way, subtyping can give life to schemas even as those who hold them are faced with schema-threatening evidence. And so, it is those hearing “You are not like the others” that are often offended when those saying it intend a compliment.

438. *See id.* at 969–73.
439. *See id.* at 961.
441. KUNDA, supra note 111, at 386.
442. Additional studies indicate that subtyping is more successful when schemas are expected to be highly heterogeneous. When individuals working with a schema that predicts homogeneity are faced with disconfirming information, subtyping is a less successful defense of the overall schema. See Lucy Johnston & Miles Hewstone, *Cognitive Models of Stereotype Change: (3) Subtyping and the Perceived Typicality of Disconfirming Group Members*, 28 J. EXPERIMENTAL SOC. PSYCHOL. 360, 360 (1992).
443. *See PATRICIA J. WILLIAMS, THE ALCHEMY OF RACE AND RIGHTS* 125–30 (1991). There is an extensive literature on how narratives, stories, and language are used to shape our understanding of the world—a literature that in many ways resonates with what social psychologists have learned about the influence of schemas and metaphors. See, e.g., Kimberlé Crenshaw, *Toward a Race Conscious Pedagogy*, 4 S. CAL. REV. L. & WOMEN’S STUD. 33 (1994) (discussing the importance of incorporating competing perspectives in legal discourse); Richard Delgado, *Storytelling for Oppositionists and
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(v.) Self-Fulfilling Schemas

So far, we have discussed ways that people may protect their schemas in the way they deal with schema-disconfirming evidence. There is another way in which our schemas are protected that, in some ways, is the mirror image of that general technique. Schemas do not simply shape the way that we interpret the world; they actually shape the world that we interpret. Our schemas can find confirmation in the information we encounter because they play a role in creating that information.\textsuperscript{444}

Above we briefly discussed experiments in which individuals appeared to recall schema-inconsistent information as being consistent with schemas. Similarly, individuals acting on schemas can help to shape external factors so that they generate schema-consistent information, such that one person's expectations about another become reality by eliciting behaviors that confirm those expectations. This phenomenon is a major obstacle to good social scientific research since the scientists themselves may influence the behaviors of their subjects.\textsuperscript{445}

Experiments have shown, for instance, that a teacher's expectations of a student often have significant effects on the student's performance. In a seminal study on this topic, teachers were given fake "Harvard Test of Infected Intelligence" scores for their students.\textsuperscript{446} A randomly selected portion (twenty percent) of the class was, by that score, labeled "bloomers."\textsuperscript{447} (Neither the students themselves nor their parents were aware of the designations; only the teachers were.) Owing to the teachers' falsely induced expectations and the resultant classroom dynamics, the IQ tests of the bloomers at the end of the school year actually did increase.\textsuperscript{448}

Mark Snyder and William Swann conducted a number of experiments demonstrating that individuals faced with the task of testing a hypothesis

\begin{itemize}
  \item \textit{See} Hanson & Yosifon, \textit{The Situation,} supra note 51, at 175–76 (summarizing the self-fulfilling effects of fundamental attribution error, and how the assumption that personality is the driving force creates a situational pressure for personalities to be consistent and to drive behavior).
  \item \textit{See} ROBERT ROSENTHAL & LENORE JACOBSEN, PYGMAILION IN THE CLASSROOM: TEACHER EXPECTATION AND PUPILS' INTELLECTUAL DEVELOPMENT 65–71 (1968).
\end{itemize}
will tend to elicit hypothesis-confirming evidence.\textsuperscript{449} In one experiment, individuals were given twenty-six possible questions by which to evaluate a stranger. Asked to choose twelve of those questions to ask the stranger, individuals tended to choose questions that confirmed the question they had been asked to answer. For example, subjects who were asked to test whether another person was an extrovert tended to ask questions that would be asked of people already known to be extroverts.\textsuperscript{450} Snyder and Swann further discovered that this line of questioning was hypothesis-confirming not only in the minds of the questioner, but also in the eyes of impartial observers.\textsuperscript{451} When individuals unaware of the experiment were asked to listen to audiotapes of the question-and-answer sessions, they judged the subjects to have characteristics consistent with those that the questioner was told to evaluate.\textsuperscript{452} Being asked "Do you enjoy parties?" does not give a person a chance to reveal that she enjoys reading at home on Friday nights. The "one-sided" questioning "constrained the impressions that respondents were able to convey"\textsuperscript{453} and thereby created conditions in which the subjects actually appeared to display characteristics consistent with the hypothesis.\textsuperscript{454}

The use of stereotypes provides additional evidence of the persistence and reinforcement of potentially misleading schemas, as schemas create apparent truths where none may have existed in the first place. Kunda provides the example of the stereotype of aggressiveness in African Americans. If, for instance, individuals expect an African American individual to act aggressively toward them, then they may more quickly behave aggressively toward the African American, which, in turn, incites a more aggressive response and reinforces a stereotype.\textsuperscript{455}

In experiments testing differences in the treatment of African American and white interviewees, Carl Word, Mark Zanna, and Joel Cooper found significant differences in the way the subject interviewers behaved:\textsuperscript{456} "subjects spend about 35 percent more time interviewing white applicants than black applicants, made about 50 percent more speech errors


\textsuperscript{450} See \textit{id.} at 1205.

\textsuperscript{451} See \textit{id.} at 1207-08.

\textsuperscript{452} See \textit{id.} at 1208.

\textsuperscript{453} KUNDA, supra note 111, at 116 (discussing Snyder & Swann's experiment).

\textsuperscript{454} See Snyder & Swann, supra note 449, at 1202.

\textsuperscript{455} See KUNDA, supra note 111, at 323. We can personally attest to a similar effect brought on by the stereotype of aggressive Boston drivers.

interviewing blacks than whites, and positioned their chairs about 7 percent further away from blacks than whites." Moreover, they found that subjecting white interviewees to those same conditions elicited poor performances from them.

Even without those external influences, however, schemas may exert a significant and unseen influence on actual behavior. For example, Claude Steele and his colleagues have found important evidence for what they call "stereotype threat"—or the behavioral effects that result from an individual's belief and fear that his or her actions will confirm a negative stereotype of the group to which he or she belongs. Steele's research, which arose as part of his effort to better "understand the nature of race and how race might affect academic performance in general," demonstrated that stereotype threat could help to explain the fact that black students underachieved relative to white students in college, even controlling for preparation levels. In one experiment, black and white students were told either that a test was diagnostic of intellectual ability or that it did not measure intellectual ability. When the test was said to be nondiagnostic, however, the gap disappeared completely. Steele and Aronson concluded that "when the test was portrayed as diagnostic of ability, Black participants were reminded of the negative stereotype of Blacks that put them under suspicion of inferiority, and the anxiety provoked by this stereotype threat undermined their performance." Concern about confirming a stereotype can alone cause a person to behave in stereotypical fashion, giving a new twist to the phrase

458. See id. See generally Interview with Claude Steele, Stanford University, at http://www.pbs.org/wgbh/pages/frontline/shows/sats/interviews/steele.html (last visited Sept. 21, 2004) [hereinafter Interview with Claude Steele] (describing "the idea that students who belong to groups that have been negatively stereotyped are likely to perform less well [on] ... standardized tests in which they feel they are being evaluated through the lens of that stereotype").
460. Interview with Claude Steele, supra note 458.
461. See Steele & Aronson, supra note 459, at 797.
462. Id.
463. Id.
464. KUNDA, supra note 111, at 376 (describing Steele and Aronson's results).
that the only thing to fear is fear itself. In these ways, automatically activated stereotypes may play a significant role in developing and perpetuating stereotypes of all types. 465

Consider again the category of "woman," which, together with an entire set of schemas, seemed to peak in the nineteenth century:

An entire theory of human personality evolved, based on the belief that men and women were polar opposites, two separate branches of human kind with opposing characteristics. The idea that men and women were very different—that women, for example were dependent and soft while men were independent and tough—had existed in the 1700s also. But in that epoch ideas about the qualities that men and women shared had been balanced against the perceived differences. In the 1800s the attributes shared by both sexes were more or less forgotten. Qualities of mind and character were seen as applying to one sex or the other—almost never to both. 466

As the categories and schemas of "true womanhood" took shape, customs and laws adapted to reflect and reinforce them. 468 It was that self-fulfilling nature of the schemas that early feminists began to challenge. 469 So it was that Wollstonecraft "blamed society" for the fact that women were treated as children and "were subject to a 'false system of education,' which taught them 'manners before morals.'" 470 And so it was that Elizabeth Cady Stanton objected to the absence of comparable educational opportunities for women.

Later generations of feminists have emphasized and debated the essentializing quality of gender categories. At bottom, the concern focuses on the idea that recognizing difference might create culturally constructed difference—and categories and schemas that constrain those

465. Id. at 323.
467. See Barbara Welter, The Cult of True Womanhood: 1820–1860, 18 AM. Q. 151, 151–52 (1966) (arguing that the four attributes of piety, purity, submission, and domesticity defined the "true woman" in the nineteenth century).
468. See supra text accompanying notes 55–57. Women whose conduct did not comport with these emerging schemas were subtyped as "fallen," a category of deviance that, in both theory and practice, reinforced the general category "woman." See also Hymowitz & Weissman, supra note 466, at 66 ("Women who were obviously strong or brave were seen as deviant and maladjusted to their 'natural sphere'.")
469. See supra text accompanying notes 50–60.
470. Hymowitz & Weissman, supra note 466, at 76–77 (quoting Wollstonecraft, supra note 50).
471. See, e.g., Carol Gilligan, In a Different Voice: Psychological Theory and Women's Development 6 (1993).
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subject to them. Thus, the phenomenon of self-fulfilling schemas has endured.

As these examples help to illustrate, our schemas are not just in our minds. They have real-world, tangible effects that help convince us that what we see is what reality, and that what is reality ought to be, as what ought to be is generated seemingly independent in our minds based on what we see. This helps explain how individuals can come to believe that a woman “should not behave as a man,” based significantly on the fact that the women they observe generally behave as “women,” a perception that reverses the dominant causal flow.

(h) Summary

These are only some of the ways that individuals protect their active schemas. In the next section, we step back from our motivations and discuss briefly the central role of language and metaphor in schema choice and application.

b. A Note on the Role of Language and Metaphor

Like cues that catch our attention, the power of language and metaphor cannot be underestimated in our attempt to understand the knowledge embodied in our schemas as well as in their activation and application. The power of language lies not only in the labels we assign to things, but also in the metaphors that we use to describe them. Such metaphors carry enormous power in their ability to remain in our memory and to guide our thinking. The metaphors prime us, keeping categories and knowledge structures accessible in our mind, clear and easy to activate and apply. Language and metaphor are critical factors in schema choice, in triggering certain schemas, and in making schemas more or less memorable and accessible.

For example, the familiar metaphor of “the pie” in the economic tradition enables an effective visual reminder of the choice between efficiency and distributional objectives in policy analysis—a categorization that any student of economics cannot easily forget. According to the conventional script, policy analysts must make a choice


473. For an example of fascinating recent research on how people attempt—subconsciously—to cope with stereotype threat through various forms of disidentification, see Emily Pronin, Claude M. Steele & Lee Ross, Identity Bifurcation in Response to Stereotype Threat: Women and Mathematics, 40 J. EXPERIMENTAL SOC. PSYCHOL. 152 (2004).
between maximizing the size of the pie or slicing up the pie more equally. The simple metaphor has served as an effective guide for solving policy problems.474

Beyond the activation of schemas, language and metaphor can also shape the meaning of the things we describe and, in such a way, serve as a schema for understanding our world. In her examination of categorization and discrimination, Minow emphasizes the "power of our language, which embeds unstated points of comparison inside categories that falsely imply a natural fit with the world."475 She provides the example of the term "working mother" to show how language contains meaning by suggesting that the word "mother" is the common, general term and "working" is required to modify it.476 Such a desire to distinguish from the common and traditional is the source of other phrases like "microbrewed beer" and "organic vegetables." Sometimes what is exceptional becomes conventional. We suspect that, as more women have entered the workforce in recent decades and as more families have become "dual-career" or "dual-income" families, the "working mom" appellation has become less common, and "stay-at-home mom" has become more common. The baggage that these labels contain is hard to see inasmuch as it relies on and reinforces the schemas already in place, but it is unmistakable and revealing when highlighted.

The use of dehumanizing language to facilitate the atrocities against Jews—that is, the "final solution" to the "Jewish problem"—is yet another example of the power of language in triggering particular schemas and not others. For the German physicians who performed "selections" (choosing which prisoners would be killed with poison gas) in the concentration camps, the "unifying principle of the biomedical ideology was that of a deadly racial disease, the sickness of the Aryan race; the cure, the killing of all Jews."477 Such language, activating and reinforcing the schema of sickness, was common. A camp doctor commented on the need to "remove a gangrenous appendix from a diseased body";478 another commented, "There is a resemblance between Jews and tubercle bacilli," an "infection" that could "only be cured with difficulty."479 A 1943 speech by Heinrich

474. See Chen & Hanson, supra note 86 (describing the significance and distorting influence of the pie metaphor).
475. MINOW, supra note 242, at 4.
476. Id. The same might be said of the elusive, but celebrated "stay-at-home dad."
478. Id.
Himmler contained similar language: "Anti-Semitism is exactly like delousing. The removal of lice is not an ideological question, but a matter of hygiene. . . . We are almost deloused, we have only some 20,000 lice left, and then it will be ended in all of Germany." The language enabled a shift of schemas—from executioner to surgeon—changing the perception and nature of the practices within concentration camps.

Perhaps to resist such dehumanization, early American feminists humanized themselves by relying on the revolutionary rhetoric of others in framing their movement. As Carol Hymowitz and Michaele Weissman explain,

The same ideas by which the Founding Fathers justified the American Revolution were used in the following century by the nation’s first feminists to legitimize their sexual revolution. . . . Mary Wollstonecraft believed the much-discussed rights of man should be extended to include women.

Just as it was not God’s intention for men to be enslaved by tyrants, so too, Wollstonecraft claimed, it was not God’s intention for women to be enslaved by men. Furthermore, she concluded, just as French and American men were justified in rising up against unjust monarchs, so women were justified in revolting against the tyranny of husbands, fathers, and brothers.

Stanton came to feminism out of her outrage at the many gender-exclusive rights and privileges of men and made one of her first major contributions to the movement by persuading her cohorts to model the “Declaration of Rights and Sentiments” after the Declaration of

480. JAMES M. GLASS, LIFE UNWORTHY OF LIFE: RACIAL PHOBIA AND MASS MURDER IN HITLER’S GERMANY 83 (1997).
481. Of course, wars of all types have a way of transforming language. Today, expressions like “preemptive strike,” “smart bombs,” “surgical air strikes,” “coalition forces,” “casualties,” “regime change,” “liberation,” “shock and awe,” on one hand and “irregulars,” “death squads,” “suicide bombers,” and “weapons of mass destruction” on the other are all part of a shared “war against terrorism” nomenclature being promoted by the U.S. military. (We have yet to hear the expression “collateral damage,” an expression widely used during the first Gulf War. We suspect that this is true because of the very strong negative associations that people have with the phrase following Timothy McVeigh’s use of it to describe the deaths of those he killed in the Oklahoma City bombing.) The same can be said of the Iraqi military, which used terms like “infidels,” “jihad,” “martyrdom,” “land of Islam,” “invaders,” “occupiers,” and “murderers.” The language is not neutral, even if those who use it and those who hear it may often perceive it as neutral. The language silently paints a picture and creates and activates schemas that are themselves largely unseen. Indeed, it may be our inability to see those schemas that helps provide the appearance of neutral processing; people “call ’em like they see ’em” unaware that what they see is heavily influenced by what they do not see.
482. See HYMOWITZ & WEISSMAN, supra note 466, at 76.
Independence. The latter was chosen as a model after the women concluded upon examining the "Peace, Temperance and Anti-Slavery" conventions that these were "too tame and pacific for the inauguration of a rebellion such as the world had never before seen." The former, which was endorsed at the Seneca Falls Woman's Rights Convention, began thus: "We hold these truths to be self-evident: that all men and women are created equal; that they are endowed by their creator with certain inalienable rights; that among these are life, liberty, and the pursuit of happiness." And so it was that Sojourner Truth moved her audience when she, accepting some conventional schemas for the sake of challenging others, asked,

"What's [intellect] got to do wid womin's rights or nigger's rights? If my cup won't hold but a pint, and yourn holds a quart, wouldn't ye be mean not to let me have my little half-measure full? ..."

"Den dat little man in black dar, he say women can't have as much rights as men, 'cause Christ wan't a woman! Whar did your Christ come from? ... From God and a woman! Man had nothin' to do wid Him.”

... "If de fust woman God ever made was strong enough to turn de world upside down all alone, dese women togedder ought to be able to turn it back, and get it right side up again! And now dey is asking to do it, de men better let 'em.”

Of course, the same claim to such basic rights has been a rallying cry for several major social movements, including the abolition and civil rights movements. The revolutionary schema is in place and, so long as it

483. See Ellen Carol DuBois, Introduction to Elizabeth Cady Stanton, supra note 59, at 1, 12-13.
484. 1 History of Woman Suffrage 68 (Elizabeth Cady Stanton et al. eds., Source Book Press 1970) (1889).
485. Id. at 70.
486. Id. at 116.
487. For example, Frederick Douglass began a famous speech thus:
"Fellow Citizens: Pardon me, and allow me to ask, why am I called to speak here today? What have I or those I represent to do with your national independence? Are the great principles of political freedom and natural justice, embodied in that Declaration of Independence, extended to us? ... Your high independence only reveals the immeasurable distance between us .... What to the American slave is your Fourth of July? I answer, a day that reveals to him more than all other days of the year, the gross injustice and cruelty to which he is the constant victim.
Frederick Douglass, What to the American Slave Is Your Fourth of July, Address in Rochester, New York (July 4, 1852), http://douglassarchives.org/doug_al0.htm (last visited Sept. 25, 2004). Martin Luther King focused on the same theme:
"[W]e have come to our nation's capital to cash a check. When the architects of our republic wrote the magnificent words of the Constitution and the Declaration of Independence, they were signing a promissory note to which every American was to fall heir. This note was a promise that all men would be guaranteed the inalienable rights of life, liberty and the pursuit
remains a source of pride for the powerful, it will be a source of leverage for the oppressed.

Given its close relation to the schemas we apply, it should come as no surprise that language and metaphor also can have an important influence over what we see and what we ignore. At the same time they focus our attention on certain features of our world, they distract us from others.\textsuperscript{488} Metaphors both highlight and hide information.\textsuperscript{489} George Lakoff and Mark Johnson have discovered that individuals unconsciously liken arguments to war and employ battle-related language to describe and understand debates.\textsuperscript{490} The metaphor influences not only the way we talk about argument (using terms like “defending,” “our position,” “shooting down,” and “our opponents”), but also the way we view the argument itself. When we internalize the metaphor of argument as battle, we more easily lose sight of “the cooperative aspects of arguing,” interpreting others as opponents rather than as someone who is giving you “his time, a valuable commodity, in an effort at mutual understanding.”\textsuperscript{491} In such ways, according to Lakoff and Johnson, metaphors have a significant influence on the world we know:

Metaphors may create realities for us, especially social realities. A metaphor may thus be a guide for future action. Such actions will, of course, fit the metaphor. This will, in turn, reinforce the power of the metaphor to make experience coherent. In this sense metaphors can be self-fulfilling prophecies.\textsuperscript{492}

We think a more general way to express the point is to say that language and metaphor profoundly shape schemas, categories, and their application—and therefore can wield all the hidden, ingrained, schema-triggering, reality-coloring, and situation-altering influences that social psychologists have found with regard to schemas and categories.

\textsuperscript{488} See GEORGE LAKOFF \& MARK JOHNSON, METAPHORS WE LIVE BY 10 (1980) (“[A] metaphorical concept can keep us from focusing on . . . aspects of the concept that are inconsistent with that metaphor.”). Jith Meganathan has recently completed a superb (critical realist) summary of the cognitive linguistics research on metaphors with a special focus on the research’s relevance for judicial opinions. We have benefited from his helpful and accessible analysis. See Jith Meganathan, Judges as Political Actors: Cognitive Linguistic Evidence (Apr. 20, 2004) (unpublished manuscript, on file with author).

\textsuperscript{489} See id.

\textsuperscript{490} See id. at 4.

\textsuperscript{491} Id. at 10.

\textsuperscript{492} Id. at 156.
3. Summary

We have described many of the critical findings of social cognition research on the effect of categories and schemas on human cognition. Figure 21 attempts to summarize the information flow process, augmenting the simple schematic displayed in Figure 1 by illustrating both the effects of schemas throughout the attention, categorization, retrieval, and inference processes, as well as the effects of priming, motivation, and affect on the choice and application of schemas.

FIGURE 21. Schematic Overview

The figure above is, as we noted at the outset, necessarily a simplification of the process. For instance, motivations, affect, and priming are not the only factors that will shape the choice and application of

493. We have adapted this figure from Hastie, supra note 111, at 45, augmenting it with processes from Fiske & Neuberg, supra note 171, at 5, Rumelhart, supra note 215, at 188, and Rumelhart & Ortony, supra note 111, at 161–88. We also added influences on choice of schemas, the categorization process, the inference process, and the retrieval process.
schemas. Moreover, the effect of motivations, affect, priming, and other factors, which the diagram illustrates as mediated through the schema function, will also have direct effects on the different stages of information processing. Similarly, the information we attend to and process will influence, through the priming function, our active schemas. Still, the diagram does, we hope, usefully depict some important, well-demonstrated elements of the process.

In light of the power of categories and schemas to guide our thoughts and, more generally, to shape the way we view the world, it would behoove scholars attempting to understand the world to be mindful of the biased origins and effects of their knowledge structures. The evidence regarding how our schemas and categories are chosen and applied should be disquieting for those who assume that we are reasoning animals, relying on neutral, perhaps natural, cognitive processes. Unexamined and often unseen schemas and categories, combined with similarly underappreciated influences, such as motivation and affect, are at the heart of what we too often experience as careful, neutral, logical reasoning.

In light of those largely hidden influences, legal scholars and lawmakers, who are at the center of creating many of our society’s most influential categories and schemas, should be worried. We should worry, among other things, about what categories and schemas are being applied, how they are being applied, where they came from, who is able to challenge them and under what circumstances, and which factors give rise to their application. And, in light of the fact that owing to these influences we sometimes “come to believe what we want to believe because we want to believe it,” we should all be vigilantly suspicious of what we believe. “Faulty, but initially plausible medical diagnoses may go unrejected, possibly leading to fatal medical errors.” Initial beliefs of guilt or innocence can, under some circumstances, prejudice jury members. “Scientific theories may persist long after there is enough data available to discredit them.” And, most relevant for the subject of our analysis, “[p]olicy-level decision-makers may incorporate only evidence that

494. KUNDA, supra note 111, at 212.
495. Taylor & Crocker, supra note 103, at 125 (citing ARTHUR S. ELSTEIN, LEE S. SHULMAN & SARAH A. SPRAFKA, MEDICAL PROBLEM SOLVING: AN ANALYSIS OF CLINICAL REASONING (1978)).
496. Id. at 125 (citing James H. Davis, Craig E. Spitzer, Dennis Nagao & Garold Stasser, Bias in Social Decisions by Individuals and Groups: An Example from Mock Juries, in DYNAMICS OF GROUP DECISIONS 33, 41 (Herman Brandstätter et al. eds., 1978)).
497. Id. (citing THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (1970)).
supports their position into their decisions and fail to utilize important information favoring another alternative as a result."\(^{498}\)

III. APPLICATIONS

A. CATEGORIES AND SCHEMAS IN CURRENT LEGAL SCHOLARSHIP

Although this Article is by no means the first to recognize the potential significance of schemas and knowledge structures, we believe that it is one of the first in legal scholarship (and perhaps even in the social psychology literature) to provide such a thorough synthesis of that literature—what we hope will be a broad yet manageable schematic of schemas.\(^{499}\)

There is another way in which our project differs from that of other legal scholars who have borrowed from the social psychology literature on knowledge structures. To understand how, it is necessary to recognize that there are a variety of groups to which one might apply the insights of social psychology. At one extreme, one can assume that the only people who are subject to the sorts of tendencies that we have detailed above are the individuals who are subject to the laws and policies that legal scholars analyze. We call this view the "consumer" or "citizen view." A second deeper, level, the "lawmaker view," would assume that the insights have relevance as well for the legislators, judges, and juries (including any of their constituencies) who create and apply the law. And, at the other extreme, one could assume that legal theorists and legal academics—we ourselves—are subject to the influences. That is the "critical realist view," a level of analysis that includes the previous two levels as well.\(^{500}\)

\(^{498}\) Id. (citing IRVING L. JANIS, VICTIMS OF GROUPTHINK (1972); IRVING L. JANIS & LEON MANN, DECISION MAKING (1977)).

\(^{499}\) To be sure, there are some excellent summaries of the literature on schemas, but those summaries turn out to be narrower than ours is in several ways. Some summaries focus solely on the categorization function, or, alternatively, on the schema application function. Those that focus on schemas rarely attempt to integrate the broad range of research on factors that influence our schemas (for example, motivation and affect) in a way that presents a comprehensive and workable framework. Those that do attempt to address topics such as motivation in the context of schemas often provide only cursory treatment. None offers a broad framework designed to facilitate further application in legal scholarship.

\(^{500}\) The critical realism perspective is concerned, too, with understanding the external structural forces that contribute to our knowledge structures. See, e.g., Chen & Hanson, supra note 90; Hanson & Yosifon, The Situation, supra note 51.
While there are excellent examples of legal scholarship that recognize the importance of categories and schemas, the literature thus far has been limited in several ways. First, most of the articles have provided only a very superficial explication of the social psychology concepts or have relied on that research only tangentially in their analyses. Second, the legal topics analyzed using the schema research have been quite narrow, focusing typically on one doctrine or judicial opinion and remaining at the citizen or lawmaker levels of analysis. Third, the efforts have not had the effect of encouraging broader application of the research, owing largely to the first two limitations. And finally, none of the research to date has taken a critical realist perspective. That is, none have considered the implications of knowledge structures for understanding not just citizens or the effect of laws, but also the legal academics and legal theories behind those laws. And none have done much to explore the origins and sources of dominant knowledge structures. As we will explain below, only by taking


503. See, e.g., Gregory S. Alexander, A Cognitive Theory of Fiduciary Relationships, 85 CORNELL L. REV. 767, 769, 776-78 (2000) (providing a brief summary of role schemas and applying the research to courts' interpretations of fiduciary duties); Mark Cammack, In Search of the Post-Postpositivist Jury, 70 IND. L. J. 405, 484 (1995) (criticizing the assumption underlying jury selection rules that “there exists a universal perspective from which the true nature of reality can be discerned,” as undermined by research on schemas); Krieger, supra note 186, at 1161; Albert J. Moore, Trial by Schema: Cognitive Filters in the Courtroom, 37 UCLA L. REV. 273 (1989) (drawing upon schema research to understand the way jurors process information).

One notable exception is Anthony Amsterdam and Jerome Bruner's analysis of the categorization process in judicial decisionmaking. Amsterdam and Bruner provide an outstanding overview of the research on categorization and analyze the categorization moves in several Supreme Court opinions. See ANTHONY G. AMSTERDAM & JEROME BRUNER, MINDING THE LAW (2000).

504. Not surprisingly, for example, Linda Hamilton Krieger's excellent work on categories in discrimination law has been applied in over 100 articles in the discrimination context with little recognition that the psychological findings on which her arguments rest are equally illuminating in other arenas.
the critical realist approach will legal scholars begin to glimpse the significant and broad effects of how we legal scholars think on what we (and our audiences, including lawmakers) think. But first, it may be illuminating to summarize briefly two articles that draw upon the schema research and are fairly representative of the best attempts to apply the social psychology insights of knowledge structures.

1. Two Legal-Academic Applications

It stands to reason that—from within the broader area of knowledge structures—legal scholars have tended to focus mostly on the influence of stereotypes on citizens or on lawmakers.

a. Linda Hamilton Krieger

Krieger, for example, has applied that research to elucidate issues in many Title VII cases. She argues that “the way in which Title VII jurisprudence constructs discrimination, while sufficient to address the deliberate discrimination prevalent in an earlier age, is inadequate to address the subtle, often unconscious forms of bias that Title VII was also intended to remedy.”505

As she explains, much of the most potent discrimination or bias occurs unintentionally and unconsciously (owing to knowledge structures and other unseen cognitive influences) such that “at the moment of decision, an employer may be entirely unaware of the effect of an employee’s group membership on the decisionmaking process.”506 She summarizes the way that stereotypes operate as “social schemas” that “function as implicit theories, biasing in predictable ways the perception, interpretation, encoding, retention, and recall of information about other people.”507 Krieger focuses on Tajfel and Wilkes’s research on the effects of categorization on perceived similarity and difference as well as on the process of categorization by prototype, both of which we discussed earlier,508 as the starting points for her argument.509

Her thesis is that the inclination to revert automatically to such categories makes Title VII’s discriminatory intent requirement unduly

506. Id. at 1167.
507. Id. at 1188.
508. See supra text accompanying notes Part II.C.1.a.i.(b) and Part II.C.1.a.iv.
burdensome.\textsuperscript{510} In her view, Title VII, and presumably other laws intended to address the effects of discrimination,\textsuperscript{511} should take into account the way that discrimination often occurs, that is, unintentionally. Even a manager who honestly professes ignorance of any racial or ethnic differences in the workplace may have been subject to unconscious biases resulting in discriminatory actions. Thus, the search for discriminatory intent or motive will often be either misguided or inadequate.\textsuperscript{512}

b. Martha Chamallas

Chamallas extends the application of schemas to the thinking of lawmakers (or their constituents). She argues that the lawmaking process has been biased by inaccurate prototypes.\textsuperscript{513} More specifically, Chamallas argues that common views of “rape” have been shaped largely by the prototype of stranger-rape, leading society and its lawmakers to exclude date- and acquaintance-rape from the category of “real rape.”\textsuperscript{514} Similarly, Chamallas argues that the prototype of the “welfare mother”—triggering visions of “single, black and young” women—has shaped a policy that applies to all welfare recipients no matter how distinct their experience and situation.\textsuperscript{515} That prototype, Chamallas argues, has facilitated public support for the passage of stricter workfare requirements, as it triggers an

\textsuperscript{510} The disparate treatment theory, established in \textit{McDonnell Douglas Corp. v. Green}, 411 U.S. 792 (1973), requires proof not only of less favorable treatment but also that “superiors purposefully, deliberately, and intentionally treated him differently because of his national origin.” Krieger, supra note 186, at 1163.

\textsuperscript{511} Krieger notes that courts have, strangely enough, distinguished age discrimination from racial discrimination. The court in \textit{Syvock v. Milwaukee Boiler Manufacturing Co.}, 665 F.2d 149 (7th Cir. 1981), held that

\textit{[...]like race discrimination, age discrimination may simply arise from an unconscious application of stereotyped notions of ability rather than from a deliberate desire to remove older employees from the workforce: “Age discrimination is not the same as the insidious discrimination based on race or creed prejudices and bigotry. Those discriminations result in nonemployment because of feelings about a person entirely unrelated to his ability to do a job. This is hardly a problem for the older jobseeker. Discrimination arises for him because of assumptions that are made about the effects of age on performance.”}


\textsuperscript{512} We would add to Krieger’s excellent analysis the more recent insights of social cognition theorists who have shown that automatic stereotypes may exist, as “implicit attitudes,” even among those who are consciously and attitudinally committed to rejecting those stereotypes. See Hanson & Yosifon, \textit{The Situational Character}, supra note 51, at Part III.C.1.e (reviewing the literature on implicit attitudes); \textit{infra} text accompanying notes 559–70. As critical realism would have it, Krieger’s illustration of the law’s too-narrow focus on dispositionist intent under Title VII is one symptom of a far larger problem that plagues our entire legal system. See Hanson & Yosifon, \textit{The Situation}, supra note 51, at 285–303; Benforado, Hanson & Yosifon, \textit{Broken Scales}, supra note 254, at Part VII.

\textsuperscript{513} See Chamallas, supra note 184, at 778-800.

\textsuperscript{514} See id. at 782–83.

\textsuperscript{515} See id. at 791–92.
emphasis on the disposition of the welfare mother rather than on the contextual and background factors that contribute to her status. Finally, Chamallas argues that the prototype of the "hate crime" is a narrow one and prevents many instances of hate crimes from being properly classified. "Over time," Chamallas writes,

the existence of the prototype may actually operate to narrow or to alter the legal category if legal commentators and actors within the legal system treat the legal category as if it were bounded by the attributes of the prototype and go on to construct models and rationales centered on the biased prototype.

Chamallas points to three commonalities that she identifies in her examples: a lack of representativeness of the prototype; the prototype’s tendency to "reflect or carry with [it] a theory about the causation of social events"; and the prototype’s tendency to lead to dichotomous categories—as either fitting within the prototype or as departing from it. More generally, Chamallas identifies three of the dangers that stem from our discussion above: first, the possibility that a prototype may not represent a category satisfactorily; second, the fact that individuals apply schemas to categorized information (and, therefore, if the information is miscategorized due to biased prototypes, then the subsequent application of the wrong schemas will likely compound any judgment biases); and, third, the cognitive tendency of individuals to classify information as either a member of the category or as outside the category being considered.

2. Extensions: Beyond Stereotypes and the Citizen and Lawmaker Views

This Article has in common with those important contributions a belief in the centrality and significance of categories and schemas in affecting the way we think at all times about all things. While the work described above illustrates some of the sorts of insights that an understanding of the power of categories and schemas can bring to legal scholarship, that literature has only scratched the surface in identifying

516. See id. at 793–95.
517. See id. at 795–801.
518. Id. at 780.
519. Id.
520. Id. at 781.
521. Id. at 782.
522. See also GORDON W. ALLPORT, THE NATURE OF PREJUDICE 17 (1954) (recognizing that stereotyping is functionally similar to categorization); W. Edgar Vinacke, Stereotypes As Social Concepts, 46 J. SOC. PSYCHOL. 229, 230 (1957) (stereotypes should be understood as cognitive structures no different from other categorization-related constructs).
the relevance of research on knowledge structures. As we have already indicated, knowledge structures influence all humans—not only individuals whose behaviors the law seeks to evaluate or direct, and not just lawyers, judges, and juries who help to implement the law, but also those whose work sometimes shape and create the law.

Perhaps one reason that legal theorists have not previously turned the insights of social psychology on themselves (ourselves) is that lawyers and legal scholars (we) tend not to perceive themselves (ourselves) to be operating according to, much less biased by, knowledge structures. Of course, that is not unusual. One of the messages of the social psychology literature is that people tend not to be aware of their own knowledge structures or the influence of those knowledge structures. Knowing what we know about the human animal, and knowing that law and legal theory are both promulgated by humans, the general presumption of legal scholars should be reversed, and legal theorists should assume, absent reason to believe otherwise, that the biasing effects of schemas are always in play.

Indeed, the legal system itself, with all of its categories, schemas, scripts, metaphors, and analogies, is nothing if not an elaborate set of knowledge structures. And learning to think like a lawyer often means learning to operate within the law’s existing schemas and categories. That, at least, is the testimony of many legal scholars. For example, Edward Levi, in his classic An Introduction to Legal Reasoning, writes that the legal process

is a system of rules; the rules are discovered in the process of determining similarity or difference. . . . The problem for the law is: When will it be just to treat different cases as though they were the same? A working legal system must therefore be willing to pick out key similarities and to reason from them to the justice of applying a common classification. The existence of some facts in common brings into play the general rule.523

More recently, Steven Burton has described the relationship of “law” and “facts” very much the way that social psychologists describe the relationship of schemas and information:524 “the law determines what facts are relevant while, at the same time, the facts determine what law is relevant.”525 Minow adds: “much of legal reasoning demands familiarity with legal terms, practice in perceiving problems through categories, and

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523. EDWARD H. LEVI, AN INTRODUCTION TO LEGAL REASONING 3 (1948).
524. See supra text accompanying notes 212–14.
525. STEVEN J. BURTON, AN INTRODUCTION TO LAW AND LEGAL REASONING 141 (2d ed. 1995).
acceptance of the consequences assigned to particular legal categories. As Anthony Amsterdam and Jerome Bruner write, "Where there be law, so too must there be categories. For law defines categorically the limits of the permissible or, more often, of the impermissible. Since human imagination cannot conceive of the full variety of possible transgressions, law requires a system of categories to reduce that variety."

It is not just lawyers who have made the point. In an illuminating overview of "legal reasoning," social psychologist (and legal scholar) Phoebe Ellsworth is slightly more explicit in describing laws and legal theories as knowledge structures. Echoing the lawyers above, she explains that American legal education is primarily about providing students the ability to spot the factual and legal similarities and (more important) differences between the case under study and previous cases that may be relevant. This entails defining the universe of relevant cases, and deciding which ones match the current case most closely and which, although apparently similar, do not apply.

In that way, the "analogical" reasoning so central to legal reasoning is really just "prototype search" by another name.

Her analysis reveals much more about legal reasoning as knowledge structures. Indeed, as she suggests, even the expression legal reasoning—that is, the reasoning of judges and not jurors, lawyers, or legal scholars—reflects a contestable categorical distinction that is part of larger legal-theoretic schema. According to Ellsworth, the challenge in legal reasoning is not unlike the challenge for any form of reasoning: "That there are often numerous interpretations of the facts and numerous possible legal precedents to draw on is the central problem of legal reasoning." It is knowledge structures that help resolve those challenges in interpretation—knowledge structures of which the judges themselves are usually not conscious. As Ellsworth points out, the (all-too-human) judges

526. Minow, supra note 242, at 1.
527. Amsterdam & Bruner, supra note 503, at 8–9.
529. We say "slightly more explicit" because, although her description and analysis is clearly that of a social psychologist operating under the schemas of "schemas," she does not employ the terms "knowledge structures," "schemas," and so forth.
530. Ellsworth, supra note 528 (manuscript at 6).
531. See id. (manuscript at 9).
532. Id. (manuscript at 2–3).
533. Id. (manuscript at 6).
tend not to focus much on how they reason. Instead, judges tend to accept whatever "common-sense background theory [is] prevalent in the legal culture of their era." Most judges, that is, typically perceive or theorize themselves as reasoning and deciding according to a conventional schema for appropriate judicial behavior.

And, further revealing the role and dynamics of knowledge structures, Ellsworth traces the major schema-generating schools of thought or movements and the types of reasoning that they endorse. She usefully highlights all the "biggies"—formalism, legal realism, law and economics, law and society, and critical legal studies—and traces the varying ways and degrees to which these approaches rely on rigid categories. For instance, Ellsworth describes "[t]he essence of legal formalism" as

the idea that "a few basic top-level categories and principles formed a conceptually ordered system above a large number of bottom-level rules. The rules themselves were, ideally, the holdings of established precedents, which upon analysis could be seen to be discovered from the principles." In other words there is a pyramid of rules, with a very few fundamental "first principles" at the top, from which mid-level and finally a large number of specific rules could be derived. The legal decision-maker, faced with a case to be decided, would look to the body of law and discover the rule that determined the correct result.

As somewhat of an aside, we find noteworthy the historical similarity between the legal formalists and the social psychologists who offered the classical view of categorization. The classical view, recall, assumed that categories were rigid, real, and well-defined—in other words, the classical view is formal. Just as the classical view in social psychology was soon confronted by evidence of how real humans categorized objects and was challenged by competing social psychology theories (including the prototype theory of categorization), so did legal formalism yield to mounting aschematic evidence of how real judges decided cases. To the most astute observers, the practice of judging revealed that the legal categories purporting to carry the weight of reasoning were not so much

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534. Thus, Justice Cardozo, in an unusually frank and introspective moment, admitted "any judge, one might suppose, would find it easy to describe the process which he had followed a thousand times and more. Nothing could be farther from the truth." Id. (manuscript at 2) (quoting BENJAMIN N. CARDOZO, THE NATURE OF THE JUDICIAL PROCESS 9 (1921)).

535. Id. (manuscript at 3).

536. Id. (manuscript at 7) (quoting Thomas C. Grey, Langdell's Orthodoxy, 45 U. PIT. L. REV. 1, 11 (1983)).

537. See supra Part II.C.1.a.i.(a).

538. See supra Part II.C.1.a.i.(b).
foundation as façade—an illusion that most judges themselves accepted as real. Describing this key moment in the turn away from formalism toward legal realism, Ellsworth writes,

As time goes by and the legal landscape becomes dense with more and more intermediate cases, the failures of formalism become increasingly apparent. As Holmes put it, "Two widely different cases suggest a general distinction which is a clear one when stated broadly. But as new cases cluster around the opposite poles, and begin to approach each other, the distinction becomes more difficult to trace; the determinations are made one way or the other on a very slight preponderance of feeling, rather than articulate reason; and at last a mathematical line is arrived at by the contact of contrary decisions, which is so far arbitrary that it might equally well have been drawn a little further to one side or the other." 539

Holmes, in other words, was confronting the same fuzzy boundaries problem that led social psychologists to prototype theory. Prompted by such observations and insights, the last century or so has witnessed a sporadically paced disintegration of formalism's categories—at least in scholarly circles. Indeed, demonstrating the inadequacies of formalism was a defining motive for most legal realists, 540 who "rejected the formalist ideas that the law was a self-contained logical system, providing for the scientific, deductive derivation of the right answer in all new cases. They regarded this view as a vain daydream, disconnected from the real-world influences on legal decision makers—hence the label 'legal realism.'" 541

There the parallel histories of law and social psychology end. In social psychology, the formalism of the classical view of categories has been all but fully eclipsed by more nimble alternative theories. 542 But in law, the legacy of formalism, despite the scholarly revelations, is still quite robust, particularly in judicial opinions. 543 As Ellsworth summarizes,

Typically decisions are presented as the inevitable consequence of a careful analysis of the facts and the applicable law. The correct decision and the governing principles are described as discovered, not created, by the judge . . . and are expressed with great certainty, as though there were no room for doubt. "It seems that this neo-formalist form of jurisprudence—typified by a self-reported experience of constraint, high

539. Ellsworth, supra note 528 (manuscript at 9–10) (quoting Oliver Wendell Holmes, The Theory of Torts, 7 AM. L. REV. 652, 652 (1873)).
540. See Ellsworth, supra note 528 (manuscript at 16–20).
541. Id. (manuscript at 16).
542. See supra Part II.C.1.a.i.(c).
543. See Ellsworth, supra note 528 (manuscript at 10). See also id. (manuscript at 10–11) (offering a possible explanation for the endurance of formalism).
confidence and singular correctness, all couched in the rhetoric of closure—is the predominant, albeit unofficial, mode of judicial reasoning in current American legal culture."\(^{544}\)

There may be several reasons why simplistic categories remain largely intact, including the fact that judges are engaged not in science, but in the resolution of disputes between adversaries.\(^{545}\) Among other things, that means that most observers and practitioners do not recognize the inadequacies of the categories and are typically more focused on obtaining closure—a decision in a particular dispute—than they are in ensuring categorical coherence across all cases. Whatever the explanations, legal reasoning and much of legal theory seems heavily laden with the same sort of uncontested knowledge structures that typify human cognitions.

At first blush, therefore, one might imagine that the knowledge structures behind law and legal theory are not immune to all of the biasing influences that typically bedevil other less formal and less important knowledge structures. Our modern understanding of the ways in which anti-Semitism and patriarchy were well ensconced in a legal system that for a long period did not appear illegitimate to the majority of people subject to those laws lends credence to the belief that the unseen influence of knowledge structures permeates the law. As that experience suggests, the law may reflect and reinforce knowledge structures that may be dangerously biased.\(^{546}\)

Similarly, it might be presumed that legal theory that purports to make sense of the law through the generation and application of knowledge structures would also suffer from the same sorts of biases. But such conclusions about the power of categories and schemas in legal scholarship may be unwarranted. The social psychology literature does contain some evidence that under certain circumstances people can avoid at least some of the distorting effects of knowledge structures. Before we can confidently presume that what is true for humans in most situations is true also for lawyers and legal scholars, we should ask whether there is anything special about the way in which law and legal theory is generated that inoculates it against such effects.

\(^{544}\) Id. (manuscript at 10) (quoting Dan Simon, A Psychological Model of Judicial Decision Making, 30 Rutgers L.J. 1, 11 (1998)). Furthermore, even among legal theorists, the role of hard-and-fast categories has been revitalized through law and economics, which Ellsworth characterizes as a new type of formalism employing categories that are treated as meaningful, clear, and natural. Id. (manuscript at 10).

\(^{545}\) See id. (manuscript at 10-11).

\(^{546}\) See Hanson & Yosifon, The Situation, supra note 51, at 309–12 (describing some of the slavery-legitimating knowledge structures promoted through law and custom in the antebellum South).
In the next section, we review the literature on possible debiasing factors to determine whether these factors might ever be robust enough to counterbalance fully the otherwise distorting influence of knowledge structures and to examine the extent to which such factors, no matter their strength, might be present in the institutions and processes underlying law and legal theory. In the process, our discussion provides additional evidence for the unconscious and automatic nature of schematic processes.

B. CONTROLLING FOR THE BIAS IN OUR SCHEMA-DRIVEN COGNITIONS?

Social psychologists have identified conditions in which some of the potentially biasing effects of our schemas can be mitigated. The evidence indicates that, although it is possible to find instances in which schemas will be less influential, those instances require the confluence of a number of rare conditions. Unfortunately, therefore, our attempts to debias our schema-based thinking will be less successful than we would hope and might expect, leaving little reason to suspect that legal scholars are any less subject to schema-driven biases. In fact, there is some reason to expect that the conditions surrounding legal scholarship would exacerbate these biases.

1. Conditions of Decreased Schema Reliance

As noted at the outset, the use of categories and schemas is automatic and generally energy-conserving. Still, the cognitive energy expended in creating, utilizing, and maintaining categories and schemas can vary significantly. At times, inferences follow immediately and effortlessly from our schemas, but at other times significant cognitive capacity is utilized, for example, to scrutinize evidence and incorporate it into our schemas or to adjust our schemas in light of the evidence. As described above, a primary function of schemas is to simplify our complex environments and to make manageable the cognitive processes required to negotiate it. Thus, while we will sometimes shift toward more data-sensitive information processes, or (as depicted in Figure 11) expend the cognitive resources to create and tune new schemas that are more appropriate to the information at hand, the default is to rely heavily on active schemas and categories.\(^5\) Again, doing so allows us to utilize our scarce cognitive resources more efficiently.\(^6\)

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5. Fiske & Neuberg, supra note 171, at 13–22. While some social psychologists have distinguished between theory-driven, top-down, or conceptually-driven cognitive processing as compared to bottom-up or data-driven processing, schemas likely play a critical and constant role in virtually all of our information processing. Social cognition, Crockett explains, "involves a continuous
Because the biases caused by our categories and schemas may be tempered or even eliminated by relying less mindlessly on a given schema and scrutinizing more thoroughly the available data, it is useful to examine the conditions in which our minds opt out, even if only unconsciously, of that default process. It appears that at least three necessary conditions must be met before a person will venture from the path of least resistance encouraged by the cognitive inertia depicted in Figure 11 (though, even taken together, they may not always be sufficient).

First, a person must not already be too cognitively busy or occupied when confronted with new information or evidence. The fact that our cognitive resources are scarce explains why the more cognitively busy individuals are, the more they must conserve remaining resources by relying more completely on schemas to guide judgment. This is analogous to the fact that on a purely physical plane, most of us would find it difficult to juggle, drive, and chew gum at the same time. The same basic tendency is true on a cognitive plane. We have already highlighted a classic demonstration of that in our discussion of the Stroop Test illustrated in Tables 1 through 3. Similarly, subjects in one experiment were better able to resist stereotypical inferences (that is, inferences based purely on gender schemas, race schemas, age schemas, and the like) when they were asked to perform cognitively undemanding tasks than when they are given complex tasks.

The second necessary condition is that the information we encounter must be relevant as defined by our activated schemas. As discussed above, the fact that schemas and categories enable us, for better or worse, to ignore irrelevant information is a fundamental source of their economizing effects. Irrelevant information need not be attended to, mixture of bottom-up and top-down processing." Crockett, supra note 248, at 36. While data-driven processes are such that stimuli will trigger the application of appropriate schemas, the subsequent activation of schemas will have familiar effects. The schemas that are triggered will be used to form expectations about the stimuli or related stimuli and thus encourage a cognitive search for particular types of information—therefore increasing the likelihood that the individual will register the schema-relevant information and ignore the irrelevant information. See id. 548. AUGUSTINOS & WALKER, supra note 114, at 47. 549. See Hanson & Yosifon, The Situational Character, supra note 51, at Part II.A.1. and Part III.E.1. 550. See supra text accompanying notes 154–56. 551. See Galen V. Bodenhausen & Meryl Lichtenstein, Social Stereotypes and Information-Processing Strategies: The Impact of Task Complexity, 52 J. OF PERSONALITY & SOC. PSYCHOL. 871 (1987). 552. This necessary condition may imply another: that the schema in question is activated. If not activated, then even evidence that is relevant may not be attended to. 553. See supra Part II.C.1.a.iii.
encoded, or remembered, and thus poses no tax or friction on our cognitive processes. The example of the falling woman in the photograph was one example of how people can be blind to schema-irrelevant information.

Third, for relevant information to encourage greater sensitivity to the data and, perhaps, weaken the biasing effects of our schemas and categories, that data must be inconsistent with the expectations or default inferences created by those schemas and categories. If the relevant information is consistent, little beyond our attention would be required of us to accommodate it; it would fit readily in our preexisting cognitive filing system. Inconsistent information, in contrast, takes effort. As Fiske and Taylor write, “One way to think about this is that encoding inconsistent information requires creating an acceptable niche for it, whereas for consistent information the schema provides a ready-made niche.” It is only when the information is inconsistent that it may force us to diverge from the most efficient cognitive path and to perhaps modify the schema, choose or search for an alternative, existing schema, or create an entirely new schema that is consistent with the data presented (as depicted in Figure 11).

Those are three of the necessary conditions for limiting the biasing effect of schemas. As is implied in subsequent sections, we believe there are more than three, but these three are sufficient to make our point. Only when the evidence available to us is relevant and inconsistent with our schema, and only when we are otherwise not too cognitively busy, is there any potential that our schemas and their biasing effects will be challenged.

554. The point here is not that consistent information is as cognitively simple to process as irrelevant information. After all, the consistent information can often be valuable to the person seeking support for a schema and thus some cognitive energy will often be spent in attending to and encoding that helpful evidence. This, we suspect, helps explain the evidence that people tend to recall consistent, relevant information. See supra text accompanying notes 268-76. The point in the text is that consistent information, unlike inconsistent information, does not tend to cause us to question the schema in a way that might partially counteract any biasing effect of the underlying schema.

555. Fiske & Taylor, supra note 111, at 129.

556. See Crockett, supra note 248, at 36. Ulric Neisser has termed this feedback (between relevant, inconsistent information and our schemas) the “perceptual cycle.” Neisser, supra note 218, at 20-24. In this section, we are assuming that inconsistent information is unambiguously and unignorably inconsistent with a person’s schema. As we will describe below, a person can, and often will, treat inconsistent information as consistent or irrelevant inasmuch as that evidence is ambiguous or ignorable. See supra Part II.C.2.a.iv.(g). Relatedly, as we have already seen, people are capable of remembering inconsistent information as consistent. See supra text accompanying notes 281-90.

557. See, e.g., supra Part II.C.2.a.iv.(a)-.(g) and Part II.C.2.a.iv.(g)(iii.) (discussing confirmatory bias, ambiguity, and the role of motivation in our selection of schemas and interpretation of evidence).
CATEGORICALLY BIASED

With respect to that potential, social psychologists have shown that there is good news and bad news. The good news is that, occasionally, that potential is partially realized—as noted earlier, there are indeed times in which we do take inconsistent information into account when applying our schemas. The bad news is that those occasions are rare and, when they do occur, their debiasing impact is generally slight. Our schemas and categories wield tremendous influence—often a biasing influence—over how we view ourselves and our world, and our unconscious (and sometimes even conscious) cognitive efforts to counteract that influence are uncommon and ineffective.

Stereotypes nicely illustrate the difficulty of resisting the potential biases that schemas present. Although the research on stereotypes is not irrefutable evidence that all schemas will be difficult to counter, it does suggest that the power of schemas will influence even those with the best of intentions. Research has shown that stereotypes may be activated automatically and unintentionally, even with neutral reminders, and can have significant effects on thoughts and behavior, even when we desire them not to do so. When individuals consciously refuse to subscribe to particular stereotypes, research suggests that these individuals, being human, will still typically rely on cognitive processes that depend on stereotypes to make sense of information, so that they, in turn, can act on that information. Thus, when stereotypes have developed, activation of the stereotypes will be automatic and inevitable. Those who do not subscribe to the stereotype may have some success in suppressing it, but only if time and cognitive resources permit. Because categories that have been primed will be more easily activated, it is more likely in such cases that judgments will be “biased toward category-level information” and away from “individuating characteristics.”

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558. One way in which individuals respond to inconsistent information is to alter the active schema, to activate another schema, or to create a new schema. That process is described in greater detail above. See supra text accompanying notes 298–304.

559. See KUNDA, supra note 111, at 317–18.

560. See id. at 320–22.

561. See id. at 326–27; Hanson & Yosifon, The Situational Character, supra 51 note, at Part III.C.1.c (summarizing evidence of “implicit attitudes”).

562. See KUNDA, supra note 111, at 326 (citing Patricia G. Devine, Stereotypes and Prejudice: Their Automatic and Controlled Components, 56 J. PERSONALITY & SOC. PSYCHOL. 5 (1989)).

563. Beike & Sherman, supra note 306, at 257. On the other hand, some research suggests that these individual characteristics can also be primed—for example, by reemphasizing individual information after the categorization process occurs—to increase the likelihood of data-driven processes. See Donal E. Carlston & John J. Skowrons, Trait Memory and Behavior Memory: The Effects of Alternative Pathways on Impression Judgment Response Times, 50 J. PERSONALITY & SOC. PSYCHOL. 5 (1986).
Ziva Kunda, for example, describes an experiment isolating automatic processes in which low-prejudice individuals (as measured by explicit attitude tests) were primed subliminally with words related to the African American stereotype. Those subjects were just as likely as high-prejudice individuals to activate the stereotype. When tested under full awareness and afforded more time to process the information, low-prejudice individuals exhibited quite different behavior.\textsuperscript{564} With more time to consider their inferences (and thus less cognitive busyness), low-prejudice individuals tended to correct their inferences.\textsuperscript{565} Still, the experiment suggests that once a schema (in this case, a stereotype) has been activated, it is "difficult" and "attentionally demanding" to prevent oneself from succumbing to the inferences that the schema entails.\textsuperscript{566} Just as we read the word "black" before we name the color white in the Stroop Test, we often access the racial stereotype well before we can succeed in reminding ourselves that the stereotype is just that.

Few experiments demonstrate the self-propelled power of our schemas and categories as clearly or dishearteningly as the ongoing research of Mahzarin Banaji, Tony Greenwald, Brian Nosek, and others among their collaborators.\textsuperscript{567} That research on "implicit attitudes" strongly indicates, among other things, that "our minds contain knowledge about social groups (stereotypes [or schemas]) and attitudes (prejudice) toward them—whether we want [them] to or not."\textsuperscript{568} In other words, the prejudicial schemas that many of us reject and abhor "elude conscious awareness, seem oblivious to conscious intention, and defy conscious control."\textsuperscript{569} This is not to say, consistent with the good news reviewed above, that our schemas do not wield less influence when we actively challenge or reject them. People's explicit attitudes, often based on conscious efforts to reject common stereotypes, do correlate with their implicit attitudes.\textsuperscript{570} The point is that explicit attitudes are far from

\begin{footnotesize}
\begin{enumerate}
\item See Kunda, supra note 111, at 327.
\item See Devine, supra note 562, at 5.
\item See Beike & Sherman, supra note 306, at 271–72.
\item Their project Web site, Project Implicit, is found at https://implicit.harvard.edu/implicit/research (last visited Sept. 21, 2004). For a bibliography of the dozens of articles based on their research, see http://implicit.harvard.edu/implicit/demo/bibliography.html (last visited Sept. 21, 2004).
\item Mahzarin R. Banaji, Ordinary Prejudice, 14 PSYCHOL. SCI. AGENDA, AM. PSYCHOL. ASS'N 8, 10 (2001).
\item See Banaji, supra note 568, at 9–10.
\end{enumerate}
\end{footnotesize}
controlling, and the workings of our schemas that we don't see continue to wield surprising influence even as we consciously seek to disarm them. Individuals' simple knowledge of a stereotype, without subscription to its veracity, is enough to activate it in them; they need only be primed or cued with stereotype-related material to experience the influence.

This work on stereotypes suggests something about the power of all categories and schemas. Whether or not we experience them consciously, we are thinking categorically, and we are—because our categories and schemas are sometimes misleading, inaccurate, and inconsistent with the evidence—more or less categorically biased.

2. General Debiasing Literature

The biases that categories and schemas engender are, in some ways, not unique; they stem partially from the same cognitive miserliness that leads to a wide range of heuristics and biases. As such, psychological research into methods of debiasing perceptions may illuminate the challenges inherent in counteracting schema-based biases.

Psychologist Scott Plous surveyed research and suggested a focus on motivational factors as a strategy to avoid cognitive biases ranging from confirmation biases to self-fulfilling prophecies. 571 For instance, Plous suggests that when eliciting the opinions of others, one way to help avoid biases is to frame the question so that it encourages disconfirming answers. 572 Individuals who actively solicit evidence that is inconsistent with their schemas before drawing inferences will, perhaps not surprisingly, be more likely to reach unbiased conclusions. 573 Actively ensuring a consideration of "the other side" is perhaps the most sure-fire way to reduce biases that result from our automatic cognitive processes, 574 though the efficacy of even such direct strategies have yet to be confirmed,
perhaps revealing the difficulty of avoiding the biases that categories and schemas are likely to engender.

There are a number of factors that may cause individuals to be more likely to consider "the other side." For instance, one study found that if experimental interviewers were informed that the interviewees would be sensitive to questions that were asked, viewing particular questions as being discriminatory, the interviewers were more likely to uncover equal amounts of confirming and disconfirming evidence.575 Such findings are consistent with research by Lerner and Tetlock, described earlier, on the tendency of individuals to engage in preemptive self-criticism576 when the views of an audience are unknown.577

Like Plous, other researchers (such as Thomas Gilovich) have outlined "compensatory mental habits" designed to counteract the automatic and often faulty processes that we are unable to suppress.578 Gilovich emphasizes the need to instill an awareness of the biases, to "step back" and "to develop the habit of thinking more broadly."579 Both theists and atheists, Gilovich writes, "must consider the number of times their hopes have been realized when they have prayed and when they have not, as well the number of times their hopes have been dashed when they have prayed and when they have not."580 Because we know that some information is more likely to be ignored than other information, individuals who seek to remove biases must be particularly attentive to the potentially elusive nature of certain types of information. If the research on schemas is correct, for instance, individuals must make extra efforts to focus on seemingly irrelevant schema-inconsistent information. Gilovich suggests a "greater familiarity with the scientific enterprise" can contribute to "a healthy skepticism toward claims about how things are or should be."581

Such strategies seem quite simple—learning, for example, to ask ourselves questions such as, "How would someone who does not believe

576. See Lerner & Tetlock, supra note 354 (describing preemptive self-criticism as "more self-critical, integratively complex ways in which [individuals] consider multiple perspectives on the issue and try to anticipate the objections" that others might raise).
577. See supra Part II.C.2.a.iv.(c). See also Hanson & Kysar, supra note 354, at 237–39 (summarizing Tetlock’s research).
579. Id. at 187.
580. Id.
581. Id.
the way I do explain this result?” or “What alternative theory could account for it?” But, unfortunately, and here is the rub, they depend almost entirely on the individual’s desire or motivation to remove biases.

In a similar vein, Gollwitzer & Moskowitz outline research suggesting that stereotype use can be defeated by requiring the target of the stereotypes, the victim of one’s perceptual biases, to act in a manner that is somehow diagnostic enough, consistent enough, and salient enough to hit the stereotyped person over the head and awaken the ability to individuate. If strengthening the data is one method to delimit stereotype use, then perhaps even in the presence of weak data (i.e., ambiguous and nondiagnostic information) a challenge to stereotype use can come from strengthening another factor in active perception—the goals of the perceiver.

Langer’s analysis of mindful thinking is also helpful for understanding the conditions in which reliance on categories and schemas are mitigated. Langer’s notion of mindful thinking is to avoid reliance on our ingrained categories: “Mindlessness sets in when we rely too rigidly on categories and distinctions created in the past (masculine/feminine, old/young, success/failure),” on our scripts, or on any of our automatic, unthinking behaviors. Langer suggests that the critical components of mindful thinking are, in particular, the “creation of new categories,” “openness to new information,” and “awareness of more than one perspective.” To think mindfully—that is, to weaken the biasing effects of existing knowledge structures—adults must invoke the processes that

582. Id. at 188. See also FISKE & TAYLOR, supra note 111, at 151 (“Perseverance can be undercut in at least a couple of ways: by asking people to consider the opposite possible perspective or outcome . . . .”); Plous has noted a common theme to debiasing: Many of the most effective debiasing techniques involve the consideration of alternative perspectives . . . . For instance, overconfidence is usually reduced by considering why answers might be wrong. Hindsight biases can be reduced or eliminated by considering reasons why a different outcome might have occurred. Framing effects are minimized when the same problem is framed in multiple ways. Groupthink can be avoided by having one member of the group play the role of devil’s advocate. Actor-observer differences in attribution can be reversed by having actors and observers swap visual orientations. In all of these cases, ‘considering the opposite’ leads to greater accuracy in judgment. PLOUS, supra note 457, at 256.

583. Gollwitzer & Moskowitz, supra note 430, at 385. See also id. at 388 (describing other corrective mechanisms).

584. See LANGER, supra note 147, at 61–79.

585. Id. at 11.

586. Id. at 61–79.
are natural to children, constantly recategorizing and relabeling information, paying close attention to situation and context.\textsuperscript{587}

So, perhaps it is possible to teach old dogs new tricks.\textsuperscript{588} It is important to note, however, that the suggestions outlined above depend in large part on some recognition by people that their thinking may be biased and must include a desire or motive to correct those biases.\textsuperscript{589} The old dogs, in other words, need to want to learn new tricks, which, like making horses drink water, may be the biggest trick of all. This is part of what Elizabeth Cady Stanton was getting at when she so eloquently wrote,

It is impossible to make the Southern planter believe that his slave feels and reasons just as he does—that injustice and subjection are as galling as to him—that the degradation of living by the will of another, the more dependent on his caprice, at the mercy of his passions, is as keenly felt by him as his master. If you can force on his unwilling vision a vivid picture of the negro's wrongs, and for a moment touch his soul, his logic brings him instant consolation. He says, the slave does not feel this as I would.\textsuperscript{590}

Stanton understood that many of the widely held race and gender categories and schemas were neither random nor natural, though they may have seemed that way to those holding them. She understood that those categories and schemas were largely constructed by those motivated to maintain the then-existing power relationships.

\textsuperscript{587} See id.

\textsuperscript{588} Still, even the most sophisticated dogs will require training. Pious describes an experiment in which two psychologists recorded a discussion between members of the Cambridge Psychological Society. When asked to recall the contents of their discussion two weeks later. “respondents typically omitted more than 90 percent of the specific points that had been discussed” and “of the points that were recalled, nearly half were substantially incorrect. Respondents remembered comments that were never made, they transformed casual remarks into lengthy orations, and they converted implicit meanings into explicit comments.” PLOUS, supra note 457, at 37. Pious notes that “[e]ven the most sophisticated decision maker is susceptible to biases in memory.” See id.

\textsuperscript{589} The condition that a person be aware of her own knowledge structures and of the biasing effect of those knowledge structures is likely to be rarely satisfied because knowledge structures are part of the mostly hidden interior situation. See Hanson & Yosifon, The Situational Character, supra note 51. When individuals or institutions are unaware of the biasing influence of their knowledge structures or assume themselves to be operating according to neutral collections and construals of available evidence, then there is good reason to doubt that they have made any significant attempt to debias themselves—even assuming it were an easy process. Indeed, such people will likely take offense at the very possibility that they lack objective neutrality in interpreting their worlds. See generally Benforado & Hanson, supra note 254 (describing that general tendency and providing evidence of it in several contracts).

\textsuperscript{590} Elizabeth Cady Stanton, Address to the Legislature of New York on Women's Rights (Feb. 14, 1854), in ELIZABETH CADY STANTON, supra note 59, at 45, 50.
Stanton also well understood, consistent with our thesis, that the laws both reflected and reinforced those categories and schemas. As she explained:

Here, gentlemen, is our difficulty: When we plead our cause before the law-makers and savants of the republic, they can not take in the idea that men and women are alike; and so long as the mass rest in this delusion, the public mind will not be so much startled by the revelations made of the injustice and degradation of woman's position as by the fact that she would at length wake up to a sense of it. . . .

And thus, "[t]he nobleman can not make just laws for the peasant; the slaveholder for the slave; neither can man make and execute just laws for woman, because in each case, the one in power fails to apply the immutable principles of right to any grade but his own."592

Our discussion of motivation in the choice of schema is thus relevant to our discussion here of the reliance on schemas. While this section discusses how we may be pushed—motivations held constant—to change our schemas, motivations may also come from inside of us. The extent to which we rely on biasing schemas will depend in large part on the motivations to alter our schemas. Sometimes that motivation will come from a conflict between relevant, challenging evidence in situations in which we possess both the time and cognitive energy to pay attention, on the one hand, and the desire to be accurate and feel honest, on the other. But occasionally our changing situations will create motives to alter our schemas or to create subschemas.

As we discussed earlier, Hitler was motivated to see some Jews, in effect, as non-Jews. And the motive to see women as in their proper sphere at home was changed, or at least temporarily relaxed, when women were needed in the work force during the war effort. Schemas quickly readjusted following World War II when women, now not needed in the workplace, were again theorized, particularly by men, as wives, homemakers, and mothers to returning soldiers.

If the motivation for accuracy described earlier were the only motive, the simple solution might be as easy as ensuring that people are informed about the potential biases and asking them to consciously counteract those biases. The problem, of course, is that many motivations are at work in addition to the motive for accuracy—motives as different as the motive for closure, the motive for power, and the motive to protect our schemas, each

591. Id.
592. Id. at 47.
of which may be in conflict with the motive for accuracy.\textsuperscript{593} Quite simply, the very motives that lead us to develop and rely on particular knowledge structures in the first place seem likely to wield significant influence over whether and to what extent we are willing to abandon these knowledge structures—particularly because those motives themselves are rarely appreciated by those who hold them.

3. Summary

Based on the research outlined above, we can envision that there might be some situations in which the biasing role of categories and schemas is neutralized. Yet a review of the debiasing literature suggests that even with the best of intentions and best of efforts, there will be much room left for categories and schemas to exert their influences, whether those influences are helpful or hurtful. The optimal conditions, both internal and external, that help to reduce the influence of schemas are rarely present.

As the research suggests, situational or process influences will play critical roles in fostering more conducive conditions. While the adversarial process in the legal system might seem a well-suited mechanism for encouraging individuals to see alternative perspectives, its efficacy will be limited by the extent to which the law at issue permits variation, not to mention unseen reliance on shared knowledge structures.

Similarly, the idealized scientific process or the so-called marketplace of ideas might have the same potential for increased attention to alternative viewpoints. Unfortunately, the scientific process in practice does not approximate the process as often imagined.\textsuperscript{594} Still, the efficacy of the dynamics of social science in debiasing the knowledge produced through social science is, ultimately, an empirical question. Evidence that a social science is tethered to biasing knowledge structures will be evidence of failures in the marketplace of ideas.

This Article alone is not meant to settle the question once and for all regarding the need of legal scholars and policy analysts to take schematic biases more seriously. We intend it only as a means of establishing possible presumptions, or better yet, falsifiable empirical predictions,

\textsuperscript{593} See supra Part II.C.2.a.iv.(e)-(f).

\textsuperscript{594} For example, Kuhnian insights about the nature of scientific evolution and revolutions map closely to social psychology's insights about the dynamics of knowledge structures. Hanson & Yosifon, \textit{The Situational Character}, supra note 51, at Part III.B.3.b.
which we describe in the next section, and which themselves can be tested—a project highlighted below that is being taken up in earnest.

C. CATEGORIES, SCHEMAS, AND LEGAL THEORY

The evidence in this Article suggests that, at the same time we rely on schemas to create laws, the laws themselves are schemas that influence us—they give us categories and schemas and create realities. Indeed, many of the most significant legal battles (if that is the right metaphor) are, at bottom, disputes about whether a person or action or object falls into one or another category or whether the categories themselves are appropriate. Is a business a partnership? Is a person a public figure? Is an employee a servant? Is a work environment hostile? Is a corporation a person? Is a fetus a human being? Is separate equal?

These categories are the building blocks of the legal system and the categorical disputes are its lifeblood. The legal system is itself comprised of a set of schemas and scripts that build on and operationalize these categories. As such, the research documented in this Article suggests a number of predictions for law and legal scholarship.

1. Selected Predictions

The review of the literature above allows us to offer a sample of phenomena that should be apparent, at least upon careful scrutiny, in every person’s cognitive process, including that of legal theorists. As a sample, the following list will be both under- and overinclusive. It will be underinclusive in that many other schema-driven phenomena will often be apparent in people’s cognitions. The sample will be overinclusive in that many of the phenomena will not be observable in any individual legal-theoretic debate. Our prediction, a critical realist prediction, is that legal theory will at one time or another reflect all of the schema-driven influences—both good and bad—that characterize all human thinking.

a. Assuming Knowledge Structures Are Given

There are two general types of predictions that might be made about the influence of categories and schemas upon our laws and legal theories. The first type, which we take up presently, assumes that the knowledge structures reflected and reinforced by laws and theories are given. The basic question that this sort of prediction seeks to address is whether those

595. See supra text accompanying notes 490–91 (discussing the use of the war metaphor).
existing knowledge structures will influence policy and the scholarly analysis of policy.

But focusing on only what is reflects a standard schematic error: the tempting and simplifying, but typically false, presumption that the familiar and existing elements of our environment and interiors are more or less fixed and natural. A more sophisticated set of predictions would consider, as we attempt to do briefly below, the situational dynamics that might lead some knowledge structures to gain prominence in the first place.

i. Predictions About Attention and Memory

Individuals will categorize and schematize information in an effort to make a complex situation tractable (among other motives). People will tend to focus on elements, ideas, or situations that are clear and easily categorized at the expense of those that are complex and require greater amounts of cognitive effort. The ease with which information is categorized will depend on the settled prototypes for the categories we access. When individuals are unable to classify something into a familiar category, it will be more difficult for them to take it into account in their cognitive processes.

Similarly, individuals' reliance on their active schemas will cause them to attend to particular types of information and may cause them to ignore critical information. Individuals will, for instance, attend to schema-relevant information (whether consistent or inconsistent with their schema). That information will, in turn, be construed in a way that is consistent with the schemas that they employ.

In short, because of various elements of our knowledge structures, we will look, within limits, where our schemas tell us to look and see what our schemas tell us to see.

ii. Predictions About Inferences

In addition to the effects on attention, different categories and schemas will lead people to draw different inferences from the same information. For instance, elements within a given category will appear to be more similar than they are in reality, as will elements of different

596. See supra Part II.C.1.
597. See supra Part II.C.1.a.iii.
598. See supra Part II.C.1.a.i.(b).
599. See supra Part II.C.1.a.i.
600. See supra Part II.C.1.a.iii and Part II.C.1.b.
601. See supra Part II.C.1.a.iii, Part II.C.1.c, and Part II.C.2.a.
602. See supra Part II.C.2.a.iv.(f).
categories appear more different than they are in reality.\textsuperscript{603} This self-fulfilling categorization effect may partially explain the tendency to see categories as natural and obvious when in fact they are cognitively constructed.\textsuperscript{604}

Furthermore, schemas will enable default inferences in which individuals will find themselves drawing conclusions even without reliable empirical evidence to support them.\textsuperscript{605} Schemas and scripts will create presumptions and establish burdens of proof. Once a particular schema is triggered, there will be a strong tendency to fill in gaps based on our prior knowledge in ways that confirm the activated schema.\textsuperscript{606} We will, in other words, draw inferences that often only contrary, unambiguous and unavoidable evidence can controvert.\textsuperscript{607}

In drawing those inferences, individuals will slide easily across schema bridges and be unable to scale schema fences.\textsuperscript{608} They will often jump quickly from one schema to another: for example, "that is a woman, and that person is a bad driver." Additionally, our cognitions may prevent us from making connections between schemas: for example, "that person is a surgeon; that person cannot be a woman." Because of this, the choice of schema will be critical in influencing our inferences.

Finally, given the role of schemas in generating inferences, the presence or absence of shared schemas will have an important influence on our ability to communicate effectively.\textsuperscript{609} Without shared schemas, there will be greater potential for confusion or misunderstanding—often leading groups to talk past each other or to avoid engaging each other at all.

iii. Predictions About Schema Choice and Application

Social cognition research not only helps us to understand the effects of categories and schemas, but it also helps us to understand what categories and schemas we are likely to apply and how we are likely to apply them across different circumstances. Schema choice will be flexible, affected by factors such as language, primacy, salience, and priming.\textsuperscript{610} The language and metaphors that individuals use will reflect and help determine the categories and schemas that are activated and applied. In

\begin{itemize}
\item \textsuperscript{603} See supra Part II.C.1.a.iv.
\item \textsuperscript{604} See supra Part I.A.3-.4 and text accompanying notes 239-41.
\item \textsuperscript{605} See supra text accompanying notes 247-49.
\item \textsuperscript{606} See supra text accompanying notes 247-54.
\item \textsuperscript{607} See supra Part II.C.2.a.iv.(g)(i)-(v).
\item \textsuperscript{608} See supra text accompanying notes 255-56.
\item \textsuperscript{609} See supra text accompanying note 258.
\item \textsuperscript{610} See supra Part II.C.2.a-.b.
\end{itemize}
doing so, they will play an important role in giving meaning to the information at hand.\textsuperscript{611} Similarly, individuals who are primed with particular categories or schemas will tend to rely more readily on those categories and schemas, often "crowding out" other schemas, even when inappropriate.\textsuperscript{612} Chronically accessible schemas will influence an individual's analysis of virtually all issues.

In addition, motivations and affect will play a critical role in schema choice as well as in the way that individuals apply the schemas they choose.\textsuperscript{613} Various motives may lead a person to construe disconfirming information as confirming,\textsuperscript{614} to absorb potentially significant disconfirming evidence by employing subtypes,\textsuperscript{615} and to create external conditions that will generate schema-consistent responses.\textsuperscript{616} As the description of Hitler's reactions to his Jewish soldiers indicates, if individuals find incongruencies in the categories they attempt to apply, their motivations may lead them to adjust the categories in ways that facilitate their preferred conclusions. The more that is at stake with any given schema, as measured by an individual's various motives, the greater will be an individual's allegiance to that schema.

Moreover, when information is ambiguous, individuals will have greater opportunity to protect and apply biased schemas in accordance with their motives.\textsuperscript{617} In addition to exploiting ambiguity (or as a possible means of exploiting ambiguity), individuals can employ a variety of cognitive strategies; for instance, they might moderate cognitive effort or avoid evidence of conflicting schemas.\textsuperscript{618} When the information is unambiguously inconsistent—when an individual is simply unable to ignore challenging information or conflicting schemas—individuals will tend to adopt other defenses before conceding, in the extreme case, that a new schema must be developed. These defenses include the use of subtyping or subcategorization, or actions that result in self-fulfilling schemas.\textsuperscript{619} Only when these cognitive strategies fail to reconcile the information at hand with the preferred schemas does the individual embark

\textsuperscript{611} See supra Part II.C.2.b.
\textsuperscript{612} See supra Part II.C.2.a.iv.(f) and Part III.B.
\textsuperscript{613} See supra Part II.C.2.a.iii.
\textsuperscript{614} See supra Part II.C.2.a.iv.(g)(i.)--(iv.).
\textsuperscript{615} See supra Part II.C.2.a.iv.(g)(iv.).
\textsuperscript{616} See supra text accompanying notes 444--54.
\textsuperscript{617} See supra text accompanying notes 413--27.
\textsuperscript{618} See supra Part II.C.2.a.iv.(g)(i.).
\textsuperscript{619} See supra Part II.C.2.a.iv.(g)(iv.)--(v.).
on the more cognitively difficult task of developing a new and more accurate schema.\textsuperscript{620}

b. Recognizing the Situational Sources of Knowledge Structures\textsuperscript{621}

As we noted at the outset, this Article is part of a larger legal-theoretic approach—critical realism—which assumes that human behavior is largely the consequence of unseen situational influences, both within us and around us.\textsuperscript{622}

This Article has focused primarily on a single interior situational factor—the mostly unappreciated influence of knowledge structures on how we humans make sense of our world.

In other work in the larger critical realist project, the case has been made that all of our interior situational features leave us vulnerable to situational manipulation and subject to illusion. In that sense, we humans are "situational characters." The social psychology research on the operation of knowledge structures very much reinforces this claim. As we demonstrated above, for instance, our schemas reflect numerous motives that we do not recognize (particularly in ourselves); they are often primed and activated beneath the radar of our consciousness and have a significant effect on other situational features of our interior, from our moods to our memories. They also are guarded and protected in ways that we rarely appreciate (particularly in ourselves). With knowledge structures constituting unseen situational forces that are themselves subject to and interacting with other unseen forces, the basic predictions of the previous section can be expanded and refined.

Other pieces of the critical realist project predict and have begun to demonstrate that large commercial interests, among other things, will wield disproportionate influence over our situation. This is due to a number of factors: (1) we are situational characters (moved largely by unseen situational forces); (2) as moving people, we can be extremely valuable or profitable to some individuals, groups, institutions, or interests in our society; (3) that value will lead to a competition over our situation among these individuals, groups, institutions, or interests; (4) those individuals, groups, institutions, or interests with the greatest incentive and ability to

\begin{itemize}
  \item \textsuperscript{620} See supra Part III.B.1.
  \item \textsuperscript{621} The assertions and brief arguments made in this section are defended and more fully developed in a number of our other pieces. See, e.g., Benforado, Hanson & Yosifon, Broken Scales, supra note 254; Hanson & Yosifon, The Situation, supra note 51; Hanson & Yosifon, The Situational Character, supra note 51; Benforado & Hanson, Na\textsuperscript{ï}ve Cynicism, supra note 254.
  \item \textsuperscript{622} See supra text accompanying notes 105–07.
\end{itemize}
influence our situation will be advantaged in that competition; and finally, (5) large commercial interests constitute just such a group.

For our purposes, the significance of these insights is that many of our knowledge structures—and their constituent schemas, scripts, categories, and metaphors—will disproportionately advance shared commercial interests. To be effective, of course, these schemas will be constrained by the need to comport with the various common motives we discussed above. Thus, although the schemas will serve commercial interests, they will also be cognitively simple, self-affirming, and reasonably defensible.

The case is already being made in other work that our legal system and most of our institutions are built on a vision of the human actor—a person schema—that satisfies these motives and that generally advances the interests of those with the greatest power to influence situation, particularly large commercial interests. More specifically, the underlying person schemas and attributional schemas of law and legal institutions reflect strong dispositionist presumptions. Social science indicates that such dispositionism, though appealing and initially plausible, is badly flawed.

The success of that flawed attributional schema is a reflection of interior and exterior situational forces. Within our interiors, miserly cognitive processes and our motives for simplicity, closure, self-affirmation, group-affirmation, and system-affirmation combine to make dispositionism the presumptive default person schema. Outside of us (at least those of us in the United States), our culture of individualism, classical liberal ideals, shared metaphors, and the interests of those with the greatest power to shape our situations all combine to reinforce our dispositionist schemas. Our laws and legal theories reflect and further reinforce that largely misleading illusion of dispositionism.

There is no reason to believe that the process of deep capture, as it has been dubbed, is limited only to the person-schemas of our laws. Quite the contrary, those with the ability and incentive to do so will promote, through various forms of situational manipulation, certain schemas; they will prime and activate schemas in appropriate contexts, promote various defenses for these schemas, and so on. Therefore, in addition to the more static predictions we made above, we predict that our laws and the schemas that legitimate our laws are likewise subject to deeply captured illusion.
2. Summary and Preview of Future Work

These are a few of the predictions of tendencies that we might expect to observe in lawmaking and legal theorizing. This Article has already highlighted some evidence, including the creation and maintenance of gendered spheres in America and ethnic spheres in Nazi Germany, that lends support to our predictions. These examples may be suggestive; they may also be mere historical aberrations, as one would hope. Testing whether knowledge structures are having a similar effect today requires a far more thorough examination of our current legal theories, categories, and schemas than this Article can provide.

But, of course, we are here presented with a problem—the basic problem facing all humans attempting to better understand their worlds: What part of the infinite information before us should we focus on and attempt to encode, categorize, and construe, given that we must attend to only a small subset? The risks, as we have made clear above, are many, not least of which is the probability that we will choose to focus on legal-theoretic insights that confirm our predictions. Faced with both that cognitive imperative and that threat of bias, we hope here to schematize the legal-theoretic literature in a way that makes testing our hypothesis in future work tractable and meaningful.

Thus, instead of drawing randomly from law reviews, we will look to selected areas of legal scholarship in which, at least at first blush, one would expect either that the predictions would not be confirmed, or that any confirmation of the predictions would be a telling revelation of the power and pervasiveness of the biasing influence of knowledge structures. That is, we will look at areas of legal theory that are most significant or influential (in theoretical or real-world terms). These are the answers in which robust debates have taken place, in which any consensus or resolution of the debates has been framed as the outcome of a well-functioning social-scientific dynamic, and in which proponents of the conventional perspective and most of their critics do not perceive that categories and schemas have exerted considerable influence on the debate. In short, we will look to areas of legal theory in which knowledge structures appear, at least to the participants, not to have harmed the debates. Our primary focus, therefore, will be on law and economics and legal-theoretic debates that have been more or less dominated by efficiency analysis.

To help ensure that we have examined a reasonably diverse sample of scholarship, we first specify the categorical distinctions that are evident in
our legal system, in legal practice, and in legal education. These categorical distinctions, which we lay out more clearly in related papers, not only help us to select the areas that we will use to test our predictions, but also reveal some of the little-noticed biasing influences of categories over how laws are conceived and operate.

Roughly speaking, legal theory appears to generate insights at three levels of abstraction. The first and broadest level of legal theory involves metatheoretical insights, which purport to apply to all legal rules across all doctrinal categories. We will examine in a separate article the metatheoretical approaches of various legal theories, arguing that those theories share in common a belief that law is, to some extent, an illusion. While legal theories as diverse as law and economics and critical race theory agree on that much, little attention is given to the mechanics of illusion. Illusion is more or less presumed and rarely theorized. The creation and perpetuation of the law of illusion, we argue, finds its source in the manipulability of our knowledge structures.

At the metatheoretic level, we scrutinize in another article what may be the most general and significant policy-categorical statement extant regarding the role of legal rules: that efficiency concerns, not distributional concerns, should inform their design and implementation. We believe the debate surrounding “distribution versus efficiency” to be a particularly challenging test of our predictions. Although the literature is robust and the debate at times intense, there is little sense among its participants that the categories and schemas employed in the debate are carrying independent weight or otherwise influencing how the debate is framed or resolved. As we will demonstrate, however, categories and schemas have played a critical (and unappreciated) role in the creation, propagation, and criticism of the normative assertion that legal rules should be concerned solely with efficiency. The underlying notion that there exists a trade-off between

623. See Chen & Hanson, supra note 86; Chen & Hanson, supra note 90; Ronald Chen & Jon Hanson, Theorizing Illusion: Some Laws Behind Our Laws (Working Paper 2004, on file with authors).

624. The dispositionist presumption that we highlighted above is less a metatheoretic insight and more a pretheoretic axiom in most theories. See Hanson & Yosifon, The Situational Character, supra note 51, at Part I and Part V. Many of the insights of dominant legal theories are built upon the dispositionist foundation.

625. Chen & Hanson, supra note 623.

626. See, e.g., Louis Kaplow & Steven Shavell, Why the Legal System is Less Efficient than the Income Tax in Redistributing Income, 23 J. LEGAL STUD. 667, 669 (1994); Duncan Kennedy, Law-and-Economics from the Perspective of Critical Legal Studies, in NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 465, 470–71 (Peter Newman ed., 1998) (identifying the distribution versus efficiency debate as one of the most significant debates of the twentieth century).
“maximizing the size of the pie” and “equalizing the share of its slices” has been an immensely biasing schema. As we argue in other work, the debate has largely omitted any consideration of what might be the most important categorical concern in any pie-baking contest: the difficult to measure, compare, categorize, and schematize but all-important “taste of the pie.”

In a series of other articles, we extend the test of our predictions to two other levels of legal-theoretical abstraction. That is, we examine the role of knowledge structures over what we call macro- and microlevel theoretical insights. “Macrotheoretical insights” are those that legal theoreticians employ to guide their understanding of an entire doctrinal area. Brief reflection should reveal that most doctrinal areas, as categorized in the curricula of law schools and the departments of major law firms, have one or more (sometimes competing) positive and normative macrotheories. Indeed, these macrotheories often define as much as reflect the parameters of those doctrinal areas. Thus, tort law is said by some to be about correcting injustices and by others to be about minimizing the sum of accident costs where contracting costs are high. Criminal law is described by some as motivated by a desire to ensure retributive justice and by others as an attempt to prevent individuals from skipping contractual solutions when contracting costs are low. These macrotheories help define a doctrinal area of law and can, furthermore, inform how judges decide individual cases within any given doctrinal area. If our law-as-illusion hypothesis—that the schemas and categories of law and policy will be deeply captured by those best able to influence a situation—is correct, then one means of searching for that illusion is to contrast the schemas at different levels of policy. These schemas should be consistent with each other, if the law is truly serving the ends that it claims to serve. If there exists unexplored tensions between schemas, however, then there may be an illusion in place. As argued above, the disconnect between categories and schemas is one of the ways that we all managed to maintain conflicting attitudes or beliefs. Separate schemas are a means of separating the two beliefs that might otherwise do violence to one another. A strategy for discovering illusion, then, is to scrutinize the schemas together. Doing so can be highly revealing. That, at least, is the approach taken and the

627. Chen & Hanson, supra note 86.
629. See supra text accompanying notes 405–12.
conclusion reached in several other papers in this project. In one article, for instance, we demonstrate significant tensions between the metaschemas of policy and the macroscript of corporate law. The tensions appear neither random nor harmless; instead, they reveal a bias that favors the shared interests of corporations at the expense of the rest of society.

There is yet another layer of policy schemas. "Microtheoretical schemas" are those that legal scholars and jurists develop and employ to guide their understanding of specific doctrinal subcategories. Those subcategories are easily observed in the tables of contents of casebooks, course syllabi, and in the specialties of legal practitioners. Hence, tort law is commonly divided into subcategories as disparate as products liability and defamation. Corporate law deals with subfields that span a range from shareholder distributions to self-dealing to control transactions. For each of those subcategories, there is typically an established schema (or two) that courts rely on (or that scholars urge courts to rely on) to resolve particular disputes. These microtheoretical schemas also shape the frame that lawyers use in developing and presenting their case within a given area. As we show in articles in progress devoted to analyzing the details of corporate law doctrine, the macro- and microschemas of corporate theory and the way that these schemas are generally biasing provides strong support for our law-as-illusion hypothesis.

631. See Chen & Hanson, supra note 90.
632. Chen & Hanson, supra note 628, Illusion of Law I; Chen & Hanson, supra note 628, Illusion of Law II.
Our related in-progress articles (charted in gray in the legal-theory schematic depicted in above) will illustrate dangerous biases at all levels of legal-theoretic analysis. Because of its dominance on the legal-theoretic landscape and in corporate law, law and economics will figure most centrally in our analyses. Although we have attempted to sample particularly influential and salient examples of legal theory and legal-theoretic debates, the fact that law and economics seems to wield disproportionate influence over the areas we examine may mean that our sample is biased in favor of confirming our predictions. It may be, in other words, that the connection between the scientific self-perception of economic scholars and a schema-biased reality is no coincidence. The former may simply be a manifestation of an unquestioning faith in their own schemas—a faith that social psychology reveals is both common and hazardous.  

Law and economics theory, some might say, has a critical mass of scholars who are somewhat insulated from external criticism, who share a common and highly schematized theory, and who have not seriously

633. This diagram is meant only as an illustration of a possible schematization of legal categories and is not meant to be exhaustive.
634. See Hanson & Yosifon, The Situational Character, supra note 51, at Part III.C.2.d.i.
considered the biasing influences of these schemas. In just such a context, we might expect the underlying schemas to be most biasing. Thus, while legal economists certainly view themselves as participating in the most scientifically rigorous and unbiased of legal scholarly traditions, there is reason to worry that that self-affirming view is exactly wrong. Rather than reduce the potential for bias, it seems possible that the constraining law-and-economics schema heightens it.

In other work, a case has been made that the dominance of law and economics is attributable in large measure to the fact that it successfully provides scientific cover for a highly dispositionist—that is, unscientific—approach to law and policy. Law and economics has been so overwhelmingly successful not because it has a corner on the truth or because it is more scientifically rigorous, but because it best advances the interests of shared commercial interests while satisfying the motives of its audience. Dispositionism, by that account, is a deeply captured schema. Our forthcoming work on the meta-, macro-, and microschemas of law provide further evidence for this Article’s prediction that the dominant law and policy schemas are deeply captured. While purporting to serve the public interest (or to increase social welfare), the schemas and scripts of law and policy tend, in fact, to advance the welfare of those individuals, groups, institutions, or interests with the greatest ability and incentive to shape the situation. The law is, in that sense, an illusion. Our critical-realist research suggests that legal scholars should become acutely aware of this strong human tendency to rely on categories, schemas, and scripts that can render us the victims of and participants in an illusion, particularly if left unquestioned.

Although we are confident that the same tendencies will wield some influence over the work of all legal scholars, including ourselves in this very Article, we also suspect that the tendencies can be more or less intense depending on the approach, mindset, and situation of individual practitioners. So, for instance, we suspect that much of the “critical” theory that legal economists might tend to dismiss or ignore and that tends often to lack a coherent core theory may come much closer to identifying, understanding, and reducing the role of knowledge structures in our laws and legal theories. We all need to remain mindful of the hard-to-see influences of knowledge structures and on guard against their distortions.

635. See id. at Part III.B.3 and Part V.
636. See Hanson & Yosifon, The Situation, supra note 51, passim; Hanson & Yosifon, The Situational Character, supra note 51, passim; Jon Hanson & Adam Wright, In the Driver’s Seat: Why Promoting Dispositionism is Good Business passim (Working Paper 2004, on file with authors).
Like Stanton’s critique of the dominant mode of thought, critical theorists more readily scrutinize the prevailing justifications for existing customs, laws, and institutions. Indeed, the act of “deconstruction,” a defining metatheoretic process among critical scholars, is largely a practice of identifying knowledge structures and their influence. But even these critics cannot escape the tendencies entirely, despite a perspective that leaves them less susceptible to schema biases. As Stanton and her cohorts discovered in preparing for the Seneca Falls Convention, even a desire to reject existing knowledge structures does not necessarily free oneself from their influence:

As the convention was to assemble in three days, the time was short for such productions; but having no experience in the modus operandi of getting up conventions, nor in that kind of literature, they were quite innocent of the herculean labors they proposed. On the first attempt to frame a resolution; to crowd a complete thought, clearly and concisely, into three lines; they felt as helpless and hopeless as if they had been suddenly asked to construct a steam engine. And the humiliating fact may as well now be recorded that before taking the initiative step, those ladies resigned themselves to a faithful perusal of various masculine productions.637

While Stanton and her compatriots may have looked to the dominant, biased institutions for guidance, they ultimately determined that those productions—in this case, the “Peace, Temperance, and Anti-Slavery conventions”—were “too tame and pacific” for their purposes.638 In attacking the prevailing schemas for the place of women in society, they resolved to discard the conventional, masculine schemas for the “productions” of the day. But such a resolution did not free them from the biasing influence of the then-dominant (masculine) knowledge structures, much less of knowledge structures more generally. They were, after all, seeking the freedoms of men, including the rights to vote and own property. Their demands were framed according to the then-conventional (masculine) scripts of protest. Stanton, in her speech to the delegation, complained of “a form of government, existing without the consent of the governed” and urged her confederates to join her in securing their “right to be free as man is free.”639 Freedom, as Stanton understood it, was freedom as men had conceived it. And even as feminists like Stanton challenged some biasing and unjust categories of their day, they also accepted others.

637. HISTORY OF WOMAN SUFFRAGE, supra note 484, at 68.
638. Id. See supra text accompanying notes 483–84.
639. Stanton, supra note 59, at 31. See supra text accompanying notes 482–87 (referencing the revolutionary script and the “Declaration of Women’s Independence”).
When, for instance, Stanton advocated for women's suffrage before the New York State Legislature, she reminded the lawmakers that women "are moral, virtuous, and intelligent, and in all respects quite equal to the proud white man himself, and yet by our laws we are classed with idiots, lunatics, and Negroes ... ."  

By drawing on the research outlined in this Article and testing the predictions that stem from our understanding of categories and schemas, we can begin to part ways not just with Archie Bunker and Hitler, but also with Stanton and many of today's legal scholars and lawmakers who have yet to engage in careful and thorough examination of their own knowledge structures and the biasing influences that these structures likely engender.

Understanding and eliminating these biases is offered here as an aspiration, not an expectation. Our aim should be to raise our consciousness and develop a more accurate understanding of laws, legal theory, and the world that they help to shape, not to free ourselves entirely of our knowledge structures or their influence. The message of social psychology is not simply that we humans are categorically biased. It is also, unfortunately, that we are categorically categorically biased.

IV. CONCLUSION

In this Article, we have attempted to provide a broad yet manageable synthesis of the current research on categories and schemas and to present it in a way that will trigger and assist further application in legal scholarship. We have attempted to do more than that, however, and more than meets the eye. We have also sought to illustrate—though only implicitly until now—an important parallel script that joins critical realism with legal realism. The latter, of course, is the legal-theoretic project that arguably led to, and was soon-enough eclipsed by, the more efficient schemas and categories of law and economics and the more radical methods of critical legal studies. To make the parallel between the two realism-based approaches explicit, we will give the penultimate word to the late Karl Llewellyn who, three-quarters of a century ago, intuited and occasionally worried about the fact that we humans are categorically biased:

Like rules, concepts are not to be eliminated; it cannot be done.

Behavior is too heterogeneous to be dealt with except after some

640. Stanton, supra note 590, at 45.
641. See Hanson & Yosifon, The Situation, supra note 51, at 181–82 (describing the relationship between critical realism and legal realism).
artificial ordering. The sense impressions which make up what we call observation are useless unless gathered into some arrangement. Nor can thought go on without categories.

A realistic approach would, however, . . . [recognize] that to classify is to disturb. It is to build emphases, to create stresses, which obscure some of the data under observation and give fictitious value to others. . . . [A] realistic approach to any new problem would begin by scepticism as to the adequacy of the received categories for ordering the phenomena effectively toward a solution of the new problem. It is quite possible that the received categories as they already stand are perfect for the purpose. It is, however, altogether unlikely. . . .

. . . [A] realistic approach rests on the observation that categories and concepts, once formulated and once they have entered into thought processes, tend to take on an appearance of solidity, reality and inherent value which has no foundation in experience. More than this . . . they tend, once they have entered into the organization of thinking, both to suggest the presence of corresponding data when these data are not in fact present, and to twist any fresh observation of data into conformity with the terms of the categories. . . . The counsel of the realistic approach . . . would be the constant back-checking of the category against the data, to see whether the data are still present in the form suggested by the category-name. This slows up thinking. But it makes for results which mean[,] something when one gets them. 642

Llewellyn made his observations about the categories of law and legal theory without the benefit of current social psychology research and based them on, it seems, little more than his introspections. Those insights—like his commitment to realism—have been as prescient, in our view, as they have been ignored by dominant legal theories since.

As we have argued, a recognition of the power of schemas to shape the way people think has important implications for all individuals, from those who face the laws, to those who make and apply them, and finally, to those who advance the theories that explain, legitimate, or critique them. That is, at least, one major thesis that this project seeks to test. In doing so we heed Llewellyn’s forgotten call for realism as we help make the case for a new brand of realism—a realism that may well slow up our thinking but that will more often lead us to results that mean something.

642. Llewellyn, supra note 4, at 453–54.