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## SOCIAL COGNITION IN LAW

Eugene Borgida and Erik J. Girvan

Over the past 2 decades, theory and research from the social cognition domain has been incorporated into various areas of doctrinal scholarship in the law (Borgida & Fiske, 2008; Kovera & Borgida, 2010; Levinson & Smith, 2012; Robbennolt & Sternlight, 2012). Research on implicit social cognition, for example, has catalyzed constructive applications of psychological science to criminal law, antidiscrimination law, and other legal arenas (e.g., health law, contract law, alternative dispute resolution). Primers on implicit social cognition have aided and abetted this genre of scholarship (Greenwald & Krieger, 2006; Lane, Kang, & Banaji, 2007), including specific extensions of implicit social cognition to the intersections of law and racial bias (Levinson & Smith, 2012), gender bias (Faigman, Dasgupta, & Ridgeway, 2008), and the administration of courtroom justice (Kang et al., 2012).

In this chapter, we suggest that the time has come to examine the extent to which, and the ways in which, social cognition research has generated substantive insights into legal policy and doctrinal scholarship. This is fundamentally a question of how to assess *interdisciplinarity* and its influences—how should we (or anyone, for that matter) assess the role of social cognition in the law? We suggest that there are at least two approaches. The first focuses on the use of social cognition science to aid the trier of fact (Fiske & Borgida, 2008). An expert scientist, in this context, brings quality science to bear on one or more factual or legal questions, and

the issue is then whether the pertinent outcome or legal opinion reflects the use of the science. The second approach, assessing what we refer to as *social cognition in law*, is more indirect but perhaps more fundamental. It examines whether and how social cognition concepts have been and are being used in legal thought, particularly legal scholarship, in which there is perhaps greater potential for influencing how jurists think about the law. For example, when interpreting and otherwise developing legal doctrine, judges may be more inclined to look to legal scholars who use the science of social cognition in law and weigh their evidence-based policy arguments more heavily. Similarly, the legal scholars who do so may pass the legally relevant insights of social cognition directly on to their students—the next generation of lawyers, judges, and legal scholars—in class or less formal conversation. When social-cognitive concepts take root in legal thought, there is a more general, structural integration than might occur with expert testimony in isolated cases.

Assessing the influence of social cognition in law is the focus of this chapter. Our approach to addressing the issue of interdisciplinarity was inspired and informed by past assessments of interdisciplinarity at the intersection of social psychology and political science. Druckman, Kuklinski, and Sigelman (2009), for example, examined the extent of cross-fertilization between psychology and research on voting and public opinion (widely

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considered a success story of interdisciplinary research). They were guided by two standards for evaluating interdisciplinary research developed by the National Academy of Sciences (Committee on Facilitating Interdisciplinary Research, 2005). The first standard is *immersion*: "Success requires that researchers desiring to work on interdisciplinary research, education, and training projects should immerse themselves in the languages, cultures, and knowledge of their collaborators" (p. 487). The second standard is *conceptual integration*, which

goes beyond merely appropriating ideas from elsewhere. Instead, it requires the amalgamation of previously unconnected elements, producing novel theories, concepts, or methods that draw on and are of relevance to both disciplines in tandem, rather than to one as donor and the other as recipient. (p. 487)

Druckman et al. (2009) systematically tracked and evaluated the application of four important psychological concepts—heuristics, priming, online processing, and motivated reasoning—in political science research on vote choice and public opinion formation. They concluded that there was insufficient immersion and little integration of psychological processes:

In sum, we find little evidence that political scientists have sufficiently immersed themselves in the relevant psychological literatures on which they have drawn. As a result, they have mischaracterized concepts and used them in casual and ad hoc or post hoc ways, limiting both theoretical and empirical progress and undermining any realistic prospect of contributing back to psychology. (p. 498)

Sigelman (2007) was also interested in measuring the interdisciplinary diffusion of concepts at the intersection of psychology and political science, wondering whether psychological concepts are finding their way into political science and how they are being used once there. In one study of references over several decades in three leading political science journals to 40 social psychological concepts, Sigelman

reported that the 40 concepts were 10 times more likely to appear in *Journal of Personality and Social Psychology (JPSP)* articles as in the three political science journals combined. In a follow-up case study of the concept of motivated reasoning and citations of motivated reasoning articles in three leading political science journals between 1990 and 2006, Sigelman found that 12 studies invoked motivated reasoning only in the references section and never in the main text; four made passing mention, with no elaboration; four gave some attention to the concept (a sentence or two); and only two gave extensive attention to the concept (a significant role—adopted as a central orienting concept). He stated:

Overall, then, consideration of the uses that have [been] made of these [social psychological] concepts suggests that when they have made their way into three mainstream political science journals, their appearances have typically been fleeting, incidental, and shallow, and that they have sometimes been fundamentally misunderstood. Although these concepts have increasingly infiltrated the vocabulary of political scientists, only in the unusual case have they penetrated more than skin-deep. (p. 25)

Again, then, there was insufficient immersion and minimal conceptual integration.

#### POTENTIAL USE OF SOCIAL COGNITION IN LAW

So are social cognition concepts finding their way into legal scholarship? If so, how have they been used once there? As a first step to addressing these important questions, we offer in this chapter a descriptive analysis of social cognition in law that focuses on two primary areas of inquiry. The first analysis concerns the distribution of the temporal and topical use of social-cognitive concepts in legal scholarship, along with a basic examination of who is using them. The primary goal in this case is to provide a high-level portrait of the universe of influence of social-cognitive research on legal scholarship. Our second analysis concerns the extent to

which the legal scholarship that uses social-cognitive concepts is meaningfully interdisciplinary, reflecting the immersion and integration identified by the National Academy of Sciences as hallmarks of such a marriage.

Beyond description, the first analysis examines key characteristics of the use of social-cognitive concepts.

### Expanding Use

Over the past century, the use of empirical social scientific methods in law has waxed and waned (Diamond & Mueller, 2010; Eisenberg, 2011; Heise, 2002; Kritzer, 2009). There is a general consensus among legal scholars, however, that over the past 2 to 3 decades, legal scholarship has experienced a general if not dramatic increase in empirically oriented research (Diamond & Mueller, 2010; Ellickson, 2000; George, 2006; Heise, 2002; Hoffman & Topulos, 2008). A content analysis of prominent peer-reviewed law journals suggested that, compared with concepts and methods from social sciences such as economics, only a modest subset of this work has been psychologically oriented (Eisenberg, 2011). Even so, given the trend, as a baseline we expect an increase in use of social-cognitive concepts in legal scholarship over time because the intersection between social cognition and law has drawn greater attention from a wide range of scholars.

### Dynamic Use

Beyond the expectation of general expansion is the issue of the genesis of any expansion in use. Are only a small number of legal scholars using social-cognitive concepts in their work, or is use more widespread? What are the patterns of use of particular concepts in particular legal domains over time? In his investigation, Sigelman (2007) outlined eight possible patterns of conceptual diffusion of social psychological concepts into political science. For example, it is possible that extradisciplinary concepts tend to be imported into a field in which they become accepted or established, producing a gradually increasing then flat sigmoid pattern of use. Alternatively, concepts may enter and, after a protracted period of influence, modest use, or a brief stint as "hot idea of the day," decline into disuse,

producing platykurtic, normal, or leptokurtic distributions, respectively.

A related issue is the trend in relative use of social-cognitive concepts. Do newer concepts (e.g., implicit bias) tend to supplement or supplant the use of more established ones (e.g., attribution), a pattern suggesting competition for a scarce resource of psychologically minded jurists? Or is the use of particular social-cognitive concepts independent, suggesting that each rises and falls on its own, or cumulative, suggesting a broader connection in which use of some concepts facilitates the importation into and use of other concepts in the field?

### SUBDOMAINS OF USE

Neither social cognition nor the law is topically homogeneous. Each discipline has distinct subdomains of insight and inquiry that may differ qualitatively in characteristics that facilitate transmission of or receptivity to particular social-cognitive concepts. From our perspective, numerous factors in combination are likely to play a role in the ease and success of transmission of social-cognitive science to law. One such factor is the prominence of a research topic outside of its home discipline. The greater the probability that legal scholars have heard of a social-cognitive theory or a psychological topic of legal inquiry, the more likely it is that they are able to find a connection between the extradisciplinary insights and their own work. A second factor is the parity, or obviousness of the fit, between areas of inquiry. Some psychological research topics (e.g., the fundamental attribution error, implicit attitudes and stereotypes) may have direct or obvious implications for persistent questions in a subdomain of legal inquiry (e.g., are sanctions for criminal behavior, which may be tied to the beliefs of legislators, judges, and juries regarding dispositional versus environmental causes for criminal activity, optimal? Is employment discrimination intentional?). All else being equal, social cognition that clearly relates to issues of ongoing debate in legal thought is more likely to be adopted by legal scholars. Third, subtler interdisciplinary connections may benefit from accidents of interest and experience, as when an individual with training in both fields is able to see links

between them that few if any would envision on either side of the disciplinary divide.

On the basis of these factors, we expect that the use of particular social-cognitive concepts will not be uniform across legal topics but will instead be relatively concentrated in a few specific areas. Moreover, we expect that the legal topics with the highest rates of use of social-cognitive concepts will be those that satisfy the prominence and parity criteria. Finally, we expect that law review articles by authors with interdisciplinary expertise, either individually or collectively, will tend to cover different, or a greater variety of, legal topics than those of authors and author teams without interdisciplinary training.

As we have mentioned, beyond basic description, our second goal is to understand the extent to which legal scholarship using social-cognitive concepts is meaningfully interdisciplinary. Do legal scholars immerse themselves in social-cognitive methods, norms, and nomenclature, or is their use of social cognition concepts primarily that of outsiders merely citing, or dabbling in, social cognition science? Are insights from social cognition integrated into and influential in legal scholarship? Have they changed the way legal scholars think about jurisprudential issues, paving the way for new discussions, debates, or methods and lines of legal inquiry that would not have existed without them? Or do legal scholars tend merely to cite social-cognitive scholarship in passing while making the same points in fundamentally the same ways as they would have done without it?

In this chapter, to assess the immersion of legal scholars in social-cognitive concepts and their integration of social-cognitive concepts in legal thought, we used three measures, one theoretical—depth of treatment—and two methodological—reporting original data analysis and collaboration—to capture the range of influence that social cognition research may have on legal scholarship.

### Depth of Treatment

The first measure of conceptual integration, and more indirectly of immersion, consists of ratings of how central social-cognitive concepts are to the theses and arguments made in law review articles that use them. At one extreme, it is possible for relevant

concepts to appear only in footnoted citations, with no mention or substantive treatment in the text of an article itself. As part of his discussion of changing justifications for lawyer diversity, Wilkins (2004), for example, referenced the Implicit Attitude Test (IAT) in a parenthetical appended to a footnote citation to a *Harvard Gazette* article reporting on an interview with the social psychologist Mahzarin Banaji. This reference technically evidences some acknowledgment by a legal scholar of research in social cognition, but it is also an example of how social cognition can serve merely as additional evidence for a point already being discussed in another way, rather than forming the inspiration for, or substantive foundation of, the point itself.

At the other extreme, the core premise of an article may rely or turn on one or more ideas derived from work in social cognition, with substantial portions of the article devoted to explaining, discussing, and applying those points to the legal problem at issue. For example, Kang (2005) spent almost 50 pages reviewing social-cognitive theory and research related to racial attitudes and stereotypes before analyzing their implications for the regulation of the content of commercial communication as a primary mechanism through which implicit stereotypes are transmitted. In this instance, the thesis of the article depended on social-cognitive insights, and its central arguments could not have been made without them. As such, Kang's work reflects far more conceptual integration of the fields, and, by implication, immersion by a legal scholar in social cognition, than that of Wilkins (2004).

### Empirical Methods

Depth of treatment captures the extent of the substantive use of social-cognitive theory in legal scholarship. Beyond familiarizing themselves with theoretical content, however, legal scholars who immerse themselves in social cognition research may also adopt social-cognitive methods to approach their legal topics of inquiry. For example, in investigating explanations for racial disparities in the criminal justice system, Levinson, Cai, and Young (2010) developed and validated a Guilty/Not Guilty IAT. Similarly, Girvan, Deason, and Borgida (2013) adapted the Single Target IAT (Bluemke &

Friese, 2008) for use in their experimental and correlational exploration of the possible effects of grievant gender in labor arbitration decisions (see also, e.g., Levinson & Young, 2010a, 2010b; Rachlinski, Johnson, Wistrich, & Guthrie, 2009).

Although experimental designs and reaction-time measures are common in social-cognitive studies, these methods are rare in legal scholarship. Indeed, law review articles generally do not include data analysis, original or otherwise, let alone experiments. Diamond and Mueller (2010) coded more than 1,600 articles published from 1998 to 2008 in 60 law reviews and found that, although the presentation of original empirical research increased over this period, overall just 5.7% of articles did so (see also Ellickson, 2000; George, 2006; Hoffman & Topulos, 2008).

### Collaboration

The same is true of plural authorship. Scholarly collaboration is common and even normative in most empirical fields. For example, analyzing the Web of Science publication database, Wuchty, Jones, and Uzzi (2007) found that, between 1996 and 2000, more than 80% of articles in material sciences and engineering were coauthored, as were 52% of those in the social sciences.<sup>1</sup> Among the social sciences, social, experimental, and biological psychology had among the highest rates of coauthorship, with 77%, 78%, and 85% of articles, respectively, having multiple authors. Specific to social cognition, we coded the number of authors of each of the 135 articles published in *JSPS* with a 3040 social perception and cognition classification code and *social cognition* index term. Approximately 85% of the articles were coauthored (mean number of authors = 2.8, *Mdn* = 3).

The same is not true for legal scholarship. Wuchty et al. (2007) found that of the social sciences, Web of Science publications in law had low rates of coauthorship: 20%. Only political science, with 17%, was lower. Similarly, George and Guthrie's (2002) analysis found that approximately 15% of law review articles were coauthored. In a more nuanced review, Ginsburg and Miles (2011) reported a coauthorship rate of approximately 12% for all legal scholarship but 21% for major articles

(i.e., articles excluding student notes, book reviews, tribute articles, and symposium articles, which together constitute 73% of law review publications). That said, they also found that coauthorship in the subset of legal scholarship that was empirical was substantially higher, 46% and 50%, respectively, suggesting that legal scholars doing empirical work tend to adopt the collaborative methodological norms of social and material sciences more than their more theory-oriented peers.

Consistent with these findings, we hypothesize that, to the extent that legal scholars are immersing themselves deeply in social cognition and social cognition research is being integrated deeply into legal thought, law review articles containing social-cognitive concepts should have higher rates of coauthorship and experiments or original data analysis than typical law review articles.

### EXAMINING THE USE OF SOCIAL COGNITION CONCEPTS AND METHODS IN JURISPRUDENTIAL SCHOLARSHIP

In order to conduct the descriptive, quantitative review and assess the extent of interdisciplinarity in the use of social cognition in law, we constructed a database of contemporary legal scholarship that references core social-cognitive concepts.

#### Selecting and Testing Search Terms

Itself interdisciplinary, research in the area of social cognition explores the role that cognitive processes, more so than affective or behavioral, play in a core set of social psychological phenomena related to "how people make sense of other people and themselves" (Fiske & Taylor, 1991, p. 1). As such, it encompasses a broad, varied, and heterogeneous set of concepts that are not necessarily unique to the area or easily reducible to a definitional set without some loss of fidelity. Even so, given the volume of literature involved in the inquiry we present in this chapter, an empirical examination of the extent, integration, and influence of social cognition in law must necessarily rely on searches of electronic databases, a task that requires just such a reduction.

<sup>1</sup>By comparison, fewer than 10% of the articles in arts and humanities had multiple authors.

We selected search terms used to identify the use of social-cognitive concepts in legal scholarship through a comparative review of several authoritative sources: the tables of contents of the 1991 and 2008 editions of Fiske and Taylor's seminal *Social Cognition* text (Fiske & Taylor, 1991, 2008); words related to *social cognition* in PsycINFO's *Thesaurus of Psychological Index Terms* (Walker, 2012); and the keywords and major concepts in the abstracts of a random sample of 20% of the articles published in *JPSP* with a 3040 *social perception and cognition* classification code and *social cognition* index term. We compared the major concepts identified from the sources iteratively and selected a subset of terms that appeared to capture the most common core concepts (see Appendix 24.1). Questions of scope of inquiry were resolved in favor of those that clustered around a narrower range of topics more likely to relate to work in social cognition than to a related discipline or to accidents of syntax, nomenclature, or turns of phrase.

We then tested the selected terms for their relevance to social cognition. Specifically, we entered terms separately into searches of the abstracts-only database, then into a full-text search of articles published between 1994 and 2011<sup>2</sup> in *JPSP* with a 3040 *social perception and cognition* classification code and in the journal *Social Cognition* (SC). The number of hits for each search is given in Appendix 24.1. As anticipated, the terms each yielded a substantial number of hits. For full-text searches, these ranged from a high in both *JPSP* and *SC* for "social & perception" of 1,048 (68% of the total) and 453 (56% of the total), respectively, to a low of 5 (less than 1%) and 74 (9%), respectively, for "dual process models."

To assess the relative centrality of the terms to work in social cognition compared with other areas of social and personality psychology, we repeated the searches in the entire *JPSP* database, subtracting out hits for articles with a 3040 *social perception and cognition* classification code. We then used the results to compute an odds ratio indicating the odds of a search term appearing in the social cognition-classified articles compared with the non-social cognition-classified articles in *JPSP*.

$$\frac{(HITS_{SP\&C} / NO.HITS_{SP\&C})}{(HITS_{Not\ SP\&C} / NO.HITS_{Not\ SP\&C})}$$

The results of the analysis (see Appendix 24.1) suggested that the search terms are more central to research in social cognition than to general social and personality psychology. Indeed, with one exception—"automatic & attitude" in abstracts only—the odds ratios exceeded a value of 1, indicating higher relative odds of the term appearing in an article bearing the 3040 social perception and cognition classification code than in one not so classified. Even so, the absolute number of articles not classified as social cognition that used each search term, including those such as "implicit & association test" that are definitely social-cognitive in origin, was still high. This result suggests that, as a practical matter, subdisciplinary boundaries between social cognition and other areas of social and personality psychology may be highly permeable or that the lines demarcating research in them, at least as reflected in journal article placement and indexing, may be rather imprecise.

Finally, to assess the extent to which the selected search terms accurately identified legal scholarship using social-cognitive concepts, we repeated each search in the JLR (journals and law reviews) database in Westlaw (<http://www.westlaw.com>), retaining the date restriction. We then reviewed a random selection of the first 100 articles identified by each search for false positives. Where false positives were located, we altered the syntax of the search term to increase its specificity to the social-cognitive term or to emphasize the term's relationship to psychology. Thus, for example, the general "&" term between "social" and "perception" was replaced with a specific proximity term "/1" indicating that the two words must appear within one word of each other. This reduced the number of hits from 10,000—Westlaw's maximum—to 1,156 by removing articles that contained each word but not necessarily in any relation to one another. Similarly, the restriction "& psychology" was added to "social & perception" to eliminate false positives, such as "The suicide option created by the Ninth and Second Circuits risks

<sup>2</sup>PsycINFO *Thesaurus* and *Map Headings/Notes* indicate that *social cognition* was added to PsycINFO as a mapping term in 1994.

changing the social perception of legitimate behavior" (Martyn & Bourguignon, 1997, p. 396), which does not refer to social perception as studied specifically by social-cognitive psychologists. Doing so reduced the hits for this search from 1,282 to 692.

### Population and Sample

To locate the population of law review articles for the quantitative analysis, we combined the search terms into one syntactical statement: ((IMPLICIT AUTOMATIC) /2 (BIAS ATTITUD! STEREOTYP! CATEGORIZ! MEASURE!)) ("DUAL PROCESS" /2 MODEL!) ("IMPLICIT ASSOCIATION TEST") ("SOCIAL COGNITION") (SOCIAL /1 (PERCEPTION CATEGORIZ!) & PSYCHOLOGY) ("PERSON PERCEPTION") ("IMPRESSION FORMATION") & PSYCHOLOGY ((SCHEMA ATTRIBUTION PRIMING) & PSYCHOLOGY) ((SOCIAL /1 JUDGMENT) & PSYCHOLOGY) & DA(AFT 1994) & DA(BEF 2012). The search was run in the Westlaw JLR database, and the results were saved as the population to be analyzed.

We selected a random sample of approximately 10% of the population ( $N = 577$ ) for descriptive analysis.<sup>3</sup> For each article in the sample, a team of research assistants recorded (a) the social-cognitive search term or terms that resulted in its selection into the population, (b) the depth of use of the social-cognitive term, (c) the number and identities of the authors, (d) the authors' credentials (i.e., institutional affiliation and terminal degrees earned) where available, and (e) the major legal topic to which the article related. The relevant social-cognitive terms were self-evident, being highlighted in yellow in the search results. The depth of use of the relevant terms were coded using a 4-point scale: 0 = *citation only* (i.e., terms used by the author only in footnote citations); 1 = *concept mentioned* (i.e., terms used by the author in the main text without discussion or elaboration); 2 = *concept discussed* (i.e., terms used by the author along with some discussion of or elaboration on the term); and 3 = *concept central* (i.e., terms used by the author

along with substantial discussion of or elaboration on the term and its relevance to the article). In addition, research assistants coded for terms that were false positives (i.e., the search terms were used in text without reference and in a way that was inconsistent with their meaning in social-cognitive science) or passively integrated (i.e., the search terms were used in the text in a way that was consistent with their social-cognitive scientific meaning but without any reference or discussion that would confirm that the authors were aware that the words were technical terms or that they were being used as such). Appendix 24.2 provides a set of example results from each category. Once identified, research assistants used supplemental Westlaw and Google searches to attempt to locate the authors' credentials. Major legal topic categories were identified by reviewing the categories of course offerings at a cross-section of law schools. The final categories, along with an example result for each, are given in Appendix 24.3. The legal topic categorization for each article was reviewed for accuracy by Erik J. Girvan and corrected if necessary. Difficult categorizations were resolved using Girvan's best judgment.

### Assessing Social Cognition in Law

**Basic description.** Overall, the population consists of 5,972 law review articles published from 1995 to 2011. Of these, coding of the extent of use of social-cognitive concepts suggested that approximately 6% were false positives. Adjusting the total to reflect this error rate left 5,614 articles.<sup>4</sup> This volume of legal scholarship using social-cognitive concepts is rather remarkable: Almost 2.5 times the number of law review articles were published referencing social-cognitive terms from 1995 to 2011 than were published during the same period in *SC* or in *JPSP* under the social perception and cognition classification code. Even so, this number represents only approximately 3% of the total body of articles published in those years that are indexed in Westlaw's JLR database.<sup>5</sup> This proportion is quite modest when

<sup>3</sup>A 10% sample of a population this size will yield a 95% confidence interval of approximately  $\pm 4\%$ .

<sup>4</sup>For the remaining analysis, estimates of total false positives in the population and articles directly coded as false positives were removed from all population and sample values, respectively.

<sup>5</sup>Total articles indexed in the JLR database were estimated using the cumulative results of the following search during each year: #the & ad(aft 1994 & bef 2012). (The pound sign disables the error message for searches of common words.)



compared, for example, with Druckman et al.'s (2009) finding that approximately 35% to 40% of mainstream political science scholarship references a concept from psychology.

**Increasing volume, stable proportion.** Is the use of social-cognitive psychology in law expanding as expected? As shown in Figure 24.1, in absolute terms the number of articles using social-cognitive concepts that were published over the 17-year period we examined increased substantially over that period. Indeed, the number of articles more than doubled from a low of 197 articles in 1995 to 511 articles in 2010 (the total in 2011 dropped slightly to 509). Undoubtedly, this represents a significant amount of work. However, the total volume of law review publications also increased during this period. Accordingly, in many respects, assessment of the relative use of social-cognitive concepts may paint a more precise picture.

Figure 24.2 depicts the percentage the identified population represents of the total number of law review articles indexed in the Westlaw JLR database for each year analyzed. Though arguably continuing to show a slight increase—2.6% in 1995 to 3.2% in 2010—the trend was considerably less pronounced than that suggested by the absolute number of articles.<sup>6</sup> Thus, although the total volume of legal scholarship using social-cognitive concepts is unquestionably increasing, as expected, contrary to expectations the relative role of social cognition in law appears to be relatively constant.

**Diversified authorship.** Is the use of social cognition in law driven by a small number of psychologically minded individuals? Analysis of the authors of the sampled articles suggested that a fairly wide variety of individuals use social-cognitive concepts in their legal scholarship. In particular, there were 655 unique authors in the sample. Of these, 91%

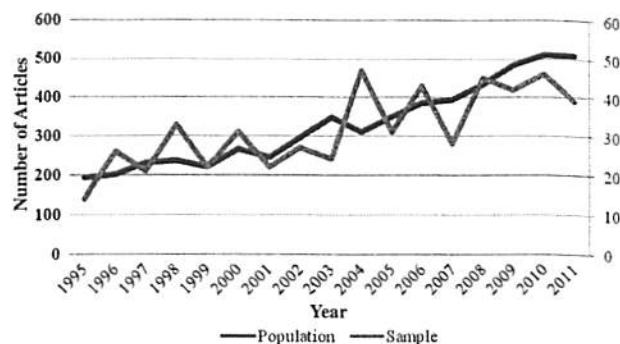


FIGURE 24.1. Population and sample of articles that used selected social-cognitive terms (1995–2011). Sample and population values exclusive of false positives. Sample values graphed with reference to right-side scale, which is one-tenth of the population scale, given on the left.

appeared once; 8%, twice; 1%, three times; and less than 1%, four times.<sup>7</sup> With respect to affiliation, 56% of the authors in the sample were law faculty, 19% were non-law faculty, 14% were in legal practice (i.e., judges or lawyers), 2% were students, and 9% were members of other professions or their affiliations were unknown. In terms of formal education, of the authors for whom information was obtained, 54% had a JD or LLB only, 24% had another terminal degree only, 15% had a JD or LLB

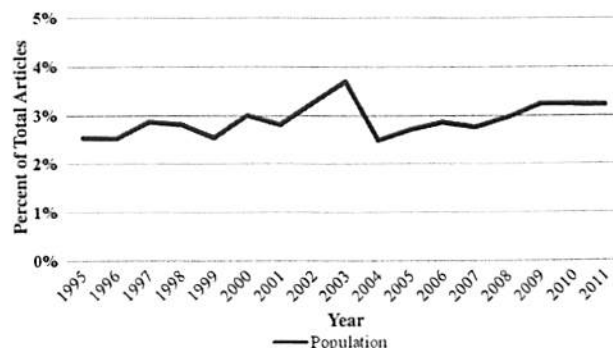


FIGURE 24.2. Percentage of total publications indexed in Westlaw journals and law reviews database that use selected social-cognitive terms (1995–2011).

<sup>6</sup>Ellickson (2000) pointed out that the articles added to Westlaw's JLR database in the 1980s and 1990s tended to be from lower ranked law reviews or were in the form of student notes and articles for practitioners. Accordingly, to the extent one is interested in relative rates of use of concepts in the more concept-laden law review articles (i.e., those written by professional academics), use of the total content of the database to adjust for absolute growth will likely understate that growth rate. Ellickson developed a deflator to adjust for this effect. Here, we adopted the slightly different tactic of estimating, through the sample, the proportion of the articles containing social-cognitive concepts that were written by law faculty as opposed to students, practitioners, or faculty of nonlaw programs.

<sup>7</sup>The seven authors appearing in the sample three or more times were Chris Guthrie (4), Martha Chamalla (3), Jeffrey Fagan (3), Mark R. Fondacaro (3), Gregory Mitchell (3), Michael L. Perlin (3), and Robert Prentice (3).

and another terminal degree, and 6% had neither. For the 39% of authors who had other terminal degrees, the degrees included PhDs (90%), MBAs (3%), MDs (2%), and EdDs (1%). PhD fields were varied, with psychology—including social, personality, experimental, and clinical psychology, where specified—accounting for 27%; economics and political science, 8% each; sociology, 7%; philosophy, 6%; and a variety of others, including public health, linguistics, and organizational behavior, making up the remainder.

To better assess the interdisciplinarity in training of the authors of the articles, we created an index of terminal degrees. To do so, all of the terminal degrees for the authors of an article were identified and assigned a score of either  $-1$  (terminal degree in law, e.g., JD, LLB) or  $1$  (terminal degree in non-law field, e.g., PhD, MBA). We then averaged the values to create the index of terminal degrees ( $M = -.46$ ,  $Mdn = -1$ ). Dividing the articles into three categories on the basis of their authors' interdisciplinarity, 58% were written by authors with only JDs (index =  $-1$ ), 24% by authors with mixed JD and other terminal degrees ( $-1 < \text{index} < 1$ ), 13% by authors with only other terminal degrees (index =  $1$ ), and 4% by authors with no terminal degree or unknown.

### Changing use of social-cognitive concepts.

Which of the social-cognitive concepts are used in legal scholarship? What are the absolute and relative trends in such use over time? By far the most common social-cognitive concept used in the sample was attribution (40%), followed by schema (20%), implicit bias (10%), and social judgment (8%), with the remainder appearing in between 5% and fewer than 1% of the articles. (Each term was used in at least one sampled article.) Accordingly, to facilitate an analysis of changes in the use of social-cognitive concepts over time, we combined related search terms with lower frequencies of use into one of two broader conceptual categories: implicit bias (encompassing terms related to implicit attitudes and stereotypes, the measurement of such attitudes, or related methods such as priming) or social judgment (collecting terms related to social perception, categorization, judgment, and person perception).

The specific search terms placed into each of these categories are identified in Appendix 24.1.

The absolute and relative distribution of the resulting four major concept categories are given in Figures 24.3 and 24.4, respectively. In absolute terms, each of the categories showed some increase in use from 1995 to 2011. For example, comparing the average estimated number of articles in each category during the 5 years 1995–1999, inclusive, with that of the last 5 years, 2007–2011, inclusive, showed that use of attribution increased by 13%, use of schema by 24%, use of social judgment-related concepts by 69%, and use of implicit bias-related concepts by 370%.

Examination of the relative use of the terms again painted a slightly different picture. In terms of the percentage of the annual total use of social-cognitive terms in legal scholarship, rates of use of attribution and schema declined from 1995 to 2011, use of social judgment-related terms has been stable, and concepts related to implicit bias have increased. In particular, a comparison of the average relative use of each term for the first 5 years of the period with that of the last 5 showed that the proportion of articles referencing attribution decreased by 39%; those using schema, by 32%; and social judgment-related terms, by 9%, whereas the use of concepts related to implicit bias increased by 146%.

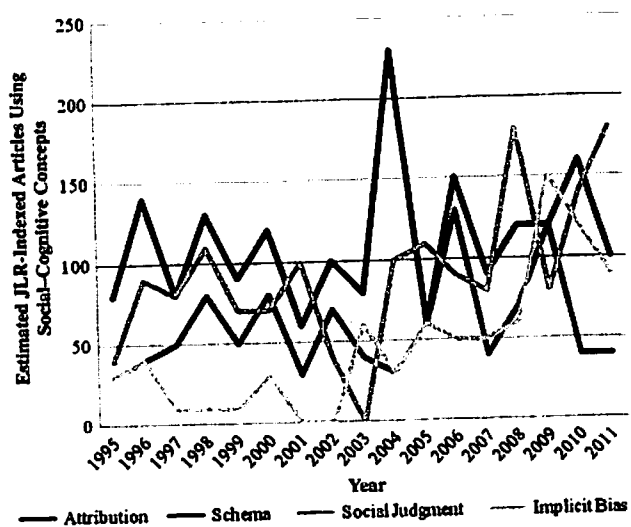


FIGURE 24.3. Estimated number of law review articles using major social-cognitive concepts (1995–2011).

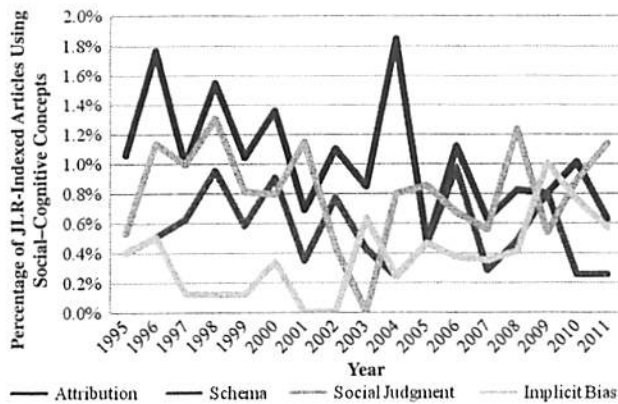


FIGURE 24.4. Relative use of social-cognitive concepts in legal scholarship (1995–2011).

In terms of the various patterns of concept use described by Sigelman (2007), the combination of the high overall rate of use of the attribution concept coupled with its pattern of modest absolute increase but relative decline suggests that, within legal scholarship, its associated insights are well established but perhaps a bit dated. The concept of schema also appears to be at a similar point within the same pattern of its interdisciplinary life cycle. By comparison, the use of concepts related to social judgment in legal scholarship is relatively stable over the period, suggesting establishment and continued relevance. Finally, the use of concepts associated with implicit bias by legal scholars is increasing in absolute and relative terms, a depiction of a hot or emerging concept early in the interdisciplinary life cycle. Taken together, the range of patterns of use of the concepts, coupled with the diversity of individual scholars using them in legal scholarship, suggests that there is a substantial degree of independence in what concepts are used.

What explains the marked absolute increase in use of implicit bias-related concepts in legal scholarship? One likely cause is the expanding scholarly and popular interest during the mid- to late 2000s in the IAT and its implications for a more subtle and less intentional form of social bias. Figure 24.5 depicts articles per year in the PsycINFO database that referenced the IAT. As indicated, use of the IAT in psychological research increased approximately eightfold from 2002 to 2007. Around the same time, the IAT was featured in a range of popular media, including in an episode of *King of the Hill* (Cook & DiMartino, 2003), the

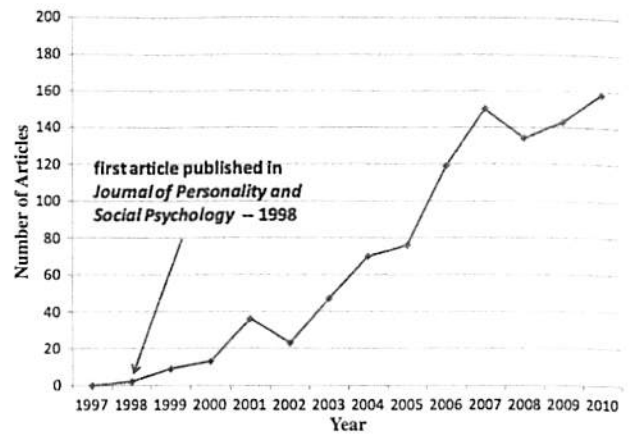


FIGURE 24.5. Expanding use of Implicit Association Test in psychology research. Data from PsycINFO database.

*Washington Post* (Vedantam, 2005), *Blink* (Gladwell, 2005), and an episode of *Oprah* ("Left for Dead," 2006). The incidence of social-cognitive concepts related to implicit bias in legal scholarship increased sharply over the same period. Articles referencing such concepts in the 8 years from 1995 to 2002 accounted for just 20% of their total use (and 3% of the use of all social-cognitive concepts), with those published from 2004 to 2011 encompassing 72% of their total use (and 11% of all social-cognitive references in the population).

Although more speculative, the relative decline in the use of the attribution and schema concepts is likely related to their relative maturity. Indeed, although the term *social cognition* was itself not added to PsycINFO as an index term until 1994, *attribution* gained that status in 1973 and *schema* in 1988. Thus, although attribution and schema are arguably foundational concepts for our understanding of the social-cognitive process of person perception, as stand-alone theoretical concepts, their development, and thus their introduction to and period of peak influence in legal scholarship, likely predates the years that are the focus of our inquiry. Finally, in addition to the maturity of the underlying concepts, the stability of use of terms in the social judgment category may reflect the fact that it is a category of relatively general and diverse concepts: Whereas attribution and schema are specific ideas and implicit bias is relatively new, the collective concepts of social cognition, social perception, and social judgment reflect a broadly applicable array of theories of various vintage.

Most common legal subtopics. Which topics in legal scholarship use social-cognitive concepts most frequently? Figure 24.6 depicts the overall estimated absolute number of articles using social-cognitive concepts from 1995 to 2011, inclusive, for each coded legal topic. Assuming a total of 5,614 such articles, if the use of social-cognitive concepts is randomly distributed, then the expected number for each of the 26 legal topics would be 216. Seven specific legal topics exceeded this threshold: jurisprudence and legal theory, criminal law, labor and employment law, civil procedure, legislation, evidence, and constitutional law.<sup>8</sup> Arguably, most if not all of these topics satisfy the prominence criterion in that they encompass legal issues about which nonlawyers generally, and psychologists in particular, are likely to be aware. Cases involving criminal and constitutional law are frequent in the popular press, as are debates about particular statutes. Moreover, many of the most provocative of the cases in the public press involve assertions of race or gender bias, topics that also implicate labor and employment law. This is particularly true in comparison to most of the topics that do not appear in the top seven.

Although there is a robust body of legal scholarship regarding issues of intellectual property, commercial law, and contracts, those topics are not frequently covered in the popular press and few nonjurists are aware of them.

The categories also satisfy the parity criterion. Depending on the framing of a particular research question, mainstays of law and psychology, such as eyewitness identification, expert testimony, and jury decision making fall within criminal law, civil procedure, or evidence. Moreover, a social-cognitive theory explaining the causes of discrimination speaks directly to legal issues concerning race and gender discrepancies in sentencing and incarceration (criminal law and constitutional law) and employment settings (labor and employment law, legislation), as well as to broader issues such as affirmative action (constitutional law).

Figure 24.7 illustrates how articles using terms from each of the social-cognitive categories, respectively, are distributed across the legal topics. The distributions further support the parity explanation. In particular, although the relative proportion of use of the various social-cognitive concepts is similar for most legal topics, there are several notable

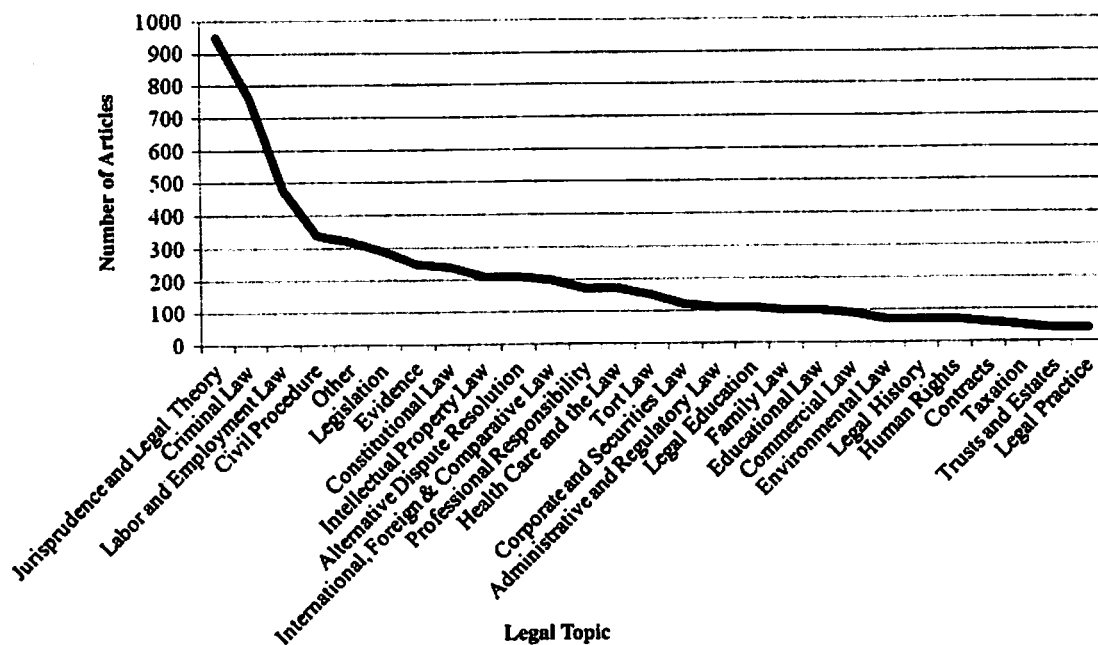


FIGURE 24.6. Estimated number of law review articles using major social-cognitive concepts by legal topic (1995–2011).

<sup>8</sup>Articles placed in the "other" category also exceeded this threshold.

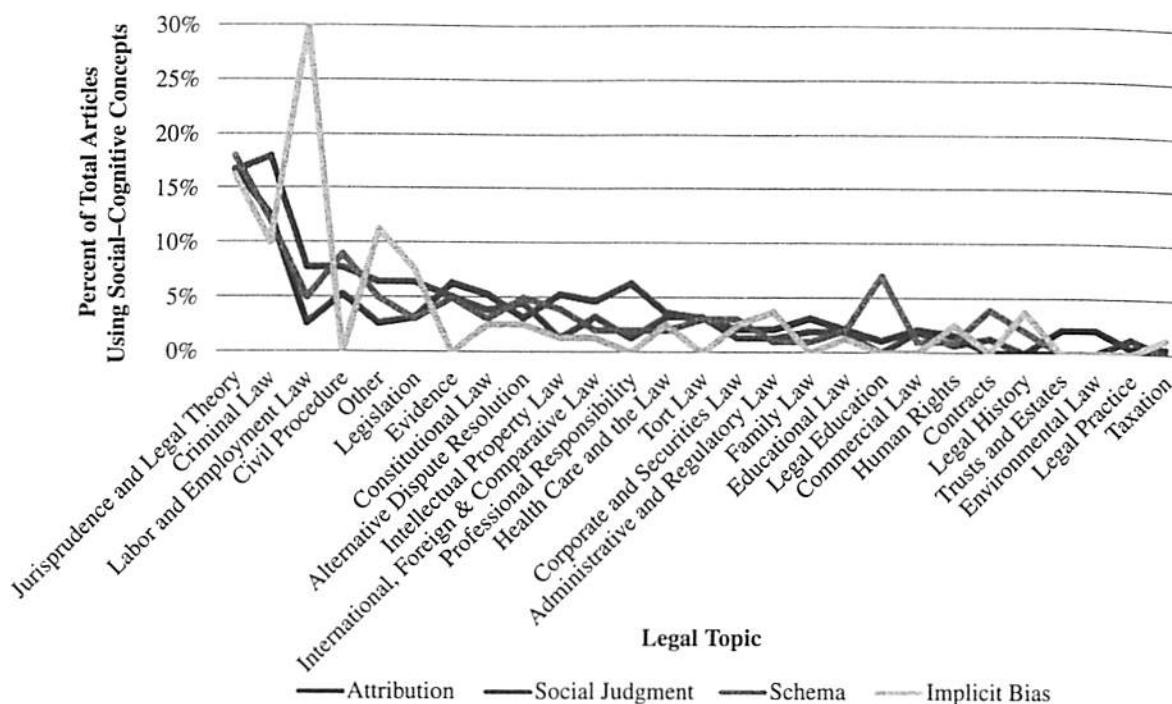


FIGURE 24.7. Distribution of sampled articles in each major social-cognitive concept category by legal topic.

exceptions. Almost one third of all legal scholarship using implicit bias-related concepts addresses issues of labor and employment law. Outside of the top seven legal topics, a similar pattern exists for use of the schema concept, which is prominent in the cognitive psychology of learning, for scholarship related to legal education. Finally, compared with the other social-cognitive topics, a disproportionate amount of scholarship using the attribution concept is on the topic of professional responsibility, an area that encompasses sanctions for lawyer malpractice and thus questions of fault and intent.

To test the hypothesis that interdisciplinary training and expertise facilitates more novel applications of social-cognitive concepts to law, we divided the authors of the articles into three groups on the basis of their terminal degrees: JD, mixed JD and other, and other terminal degree. The percentage of articles in each legal topic for each of the three groups is shown in Figure 24.8. Authors with terminal degrees in law and nonlaw fields published articles at a substantially different rate than those with only JDs on three legal topics: jurisprudence and legal theory (35% more articles), alternative dispute resolution (70% fewer articles), and professional responsibility (100% fewer articles). Similarly, authors with

only nonlaw terminal degrees differed from those with only JDs in their rates of publication on three legal topics: professional responsibility (73% fewer articles), civil procedure (100% more articles), and health care and the law (332% more articles).

This pattern does not provide much support for the proposition that interdisciplinary training facilitates the location of novel connections between elements of the two disciplines. Indeed, for the majority of topics, we found little to no difference in the proportion of articles for authors from differing training backgrounds. Moreover, for those for which we found differences, the pattern suggests differences in motivated author interest rather than facilitation. For example, although Figure 24.6 depicting the absolute use of social-cognitive terms across legal topics suggests that social cognition contains relevant insights for professional responsibility, it may be that people who are interested in professional responsibility-related topics typically do not have or seek interdisciplinary training. Conversely, health care and the law might be a topic that, overall, is of more interest to nonlawyers than to lawyers. Finally, although the amount of scholarship from interdisciplinary authors regarding civil procedure, which is often regarded as a practicing

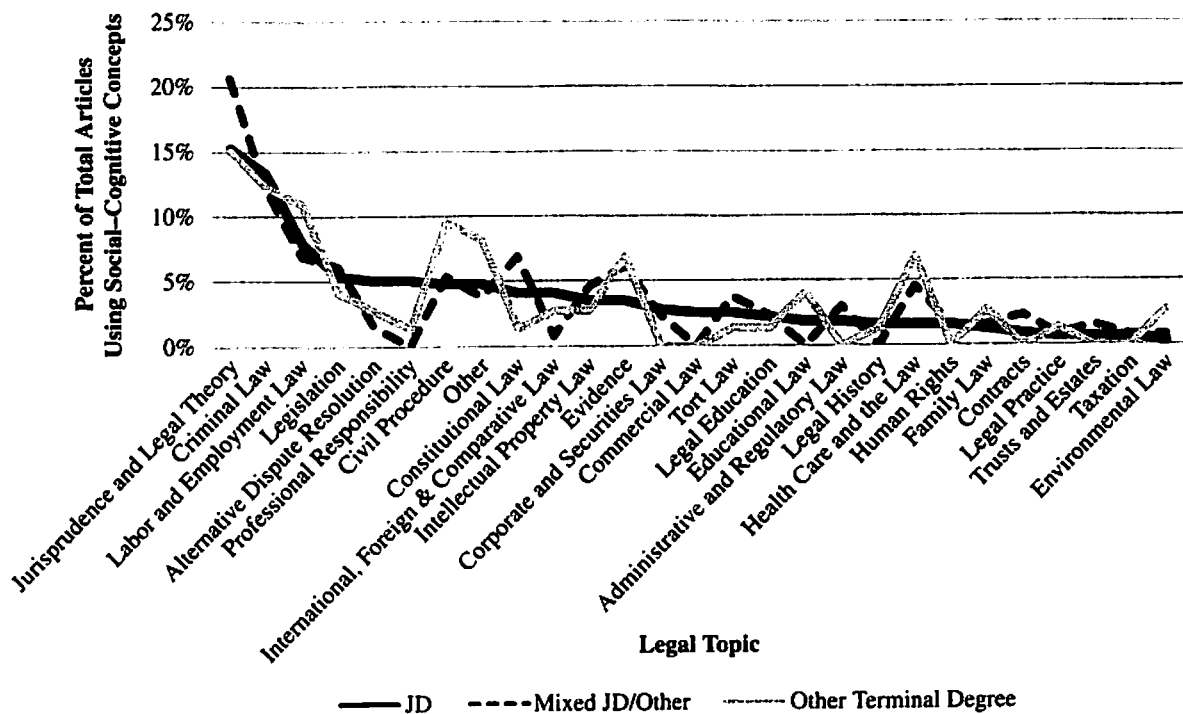


FIGURE 24.8. Distribution of sampled articles in each category of author's interdisciplinarity by legal topic.

lawyer's topic, would appear to contradict this pattern; as noted earlier, that topic also encompasses some research on topics such as jury and judicial decision making and expert testimony, which are heavily interdisciplinary.

**Meaningful interdisciplinarity.** Our descriptive analysis shows that a range of social-cognitive concepts are being used, at some level, in a heterogeneous mixture of legal scholarship by a fairly wide variety of scholars, practitioners, and others with a diversity of training. This is, however, only the barest prerequisite for meaningful interdisciplinarity. Turning to our second goal, in this section we examine the extent of conceptual integration using a measure of the depth of use, or centrality, of social-cognitive concepts in the legal scholarship in which it is used. In addition, we look at the extent of immersion through the methodological lens of whether legal scholarship incorporating social cognition adheres to the empirical and collaborative norms of social-cognitive psychology more than to the theory and sole authorship that is otherwise native to it.

**Depth of use.** Conceptual integration of social cognition in law involves more than merely citation

to or mention of social-cognitive theory and may require extended substantive discussion. How much of the use of social-cognitive concepts in legal scholarship is substantive rather than merely referential? Overall, 41% of the sampled law review articles included mention of the relevant social-cognitive concepts only in the references, 21% mentioned the concept in the text, and 11% provided some discussion of the concept. In only 5% of the articles was the social-cognitive concept central to the article. Accordingly, in only an estimated 5% to 16% of the total scholarship we identified did the authors go beyond appropriation of social cognition to integrate the concepts from each field.

Figure 24.9 depicts an estimate of the absolute number of law review articles at each depth of use for each social-cognitive concept category. Figure 24.10 shows the distribution of depth of use within each concept category. We found no significant differences between the social-cognitive categories in terms of depth of use.

**Collaboration and empirical methods.** Substantial depth of use of social-cognitive concepts implies some immersion of the authors in social cognition.

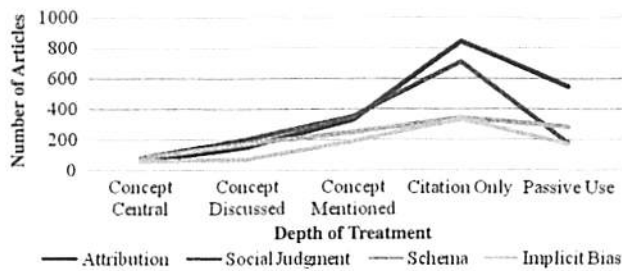


FIGURE 24.9. Estimated number of law review articles referencing social-cognitive concepts by depth of treatment (1995–2011).

As an alternative, and perhaps more rigorous, assessment of immersion, we examined the extent of use of social-cognitive methodological norms—that is, collaboration and empiricism—in articles using social-cognitive concepts. Overall, just 22% of the articles in the sample were coauthored: 13% had two authors; 3%, three authors; 1%, four authors; and fewer than 1%, five or more authors. This proportion is significantly higher than Ginsburg and Miles's (2011) observation of 12% coauthorship in a sample of law review articles,  $\chi^2(1) = 49, p < .001$ . Moreover, overall, 4.8% of the sampled articles reported results of experiments or other substantive original data analysis. This is highly consistent with Diamond and Mueller's (2010) finding that 5.7% of law review articles reported original empirical analysis.

An examination of the intersection of coauthorship and use of empirical methods revealed substantial differences, however. Of coauthored publications in the sample, 18% contained original data analysis. The same was true for only 1% of single-author publications. The observed rates are highly significantly different from the 4.8% baseline in the sample,  $\chi^2(1) = 55, p < .001$ , and the 5.7% expected baseline from

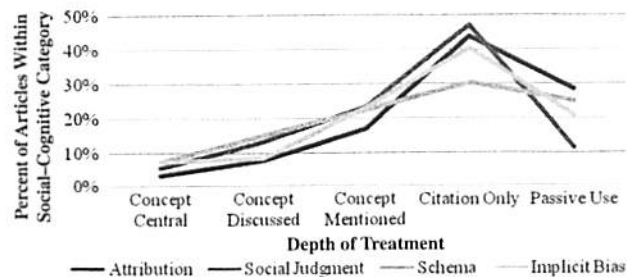


FIGURE 24.10. Distribution of sampled articles in each social-cognitive category by depth of treatment.

Ginsburg and Miles (2011),  $\chi^2(1) = 48, p < .001$ . Following up on the subsample, taking only those articles that used empirical methods, more than 80% were coauthored, a figure that is significantly higher than the approximately 50% rate of coauthorship that Ginsburg and Miles observed in major law review articles using empirical methods,  $\chi^2(1) = 10, p = .002$ . It is, however, very similar to the 77% to 85% coauthorship rate that Wuchty et al. (2007) observed for various domains of psychological research in the Web of Science database and the 85% coauthorship rate that we found for articles indexed with the 3040 *social perception and cognition* classification code in *JPS*,  $\chi^2(1) < 1, p = .546$ . The similarity provides some evidence that the authors of law review scholarship who are using social-cognitive concepts and empirical methods are also conforming substantially to the authorship norms of psychology rather than to those of law or any other social science. In short, they are effectively immersing themselves sufficiently in social cognition to appear to be doing social-cognitive research for a legal audience.

A combined analysis of depth of use of social-cognitive terms by coauthorship further substantiated this conclusion. Social-cognitive concepts were central in only 4% of single-authored articles. By comparison, of coauthored articles the relevant social-cognitive concept was central in 8%, a significantly higher amount,  $\chi^2(1) = 5, p = .015$ . Similarly, as shown in Figure 24.5, in absolute terms coauthored law review articles accounted for a disproportionate amount of those in which the relevant social-cognitive terms were discussed in depth. Indeed, although 22% of the articles had multiple authors, of the articles in which the social-cognitive concept was central, 36% were coauthored. Again, the distribution was significantly different from the base rate expectation,  $\chi^2(1) = 3, p = .05$ .

Within the sample of coauthored articles, training in a nonlegal discipline was significantly related to the use of empirical methods. Indeed, although fewer than 4% of the articles authored by teams with only legal training reported original data analysis, more than 20% of the articles written by teams with other terminal degrees used such methods,  $\chi^2(1) = 83.50, p < .001$ . A similar pattern emerged for depth of treatment. For articles written by

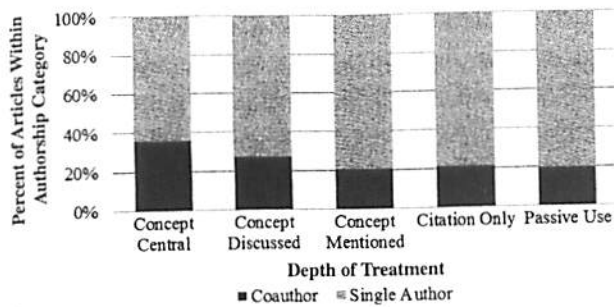


FIGURE 24.11. Relative proportion of coauthored articles by depth of use.

authors with only legal training, social-cognitive concepts were central in 4%, were discussed in 8%, were mentioned in 19%, and appeared only in citations in 42%. By comparison, social-cognitive concepts tended to be more central in articles by authors who had other training; in 10% of these articles, the social-cognitive concept was central; in 15%, discussed; in 20%, mentioned; and in 37%, appeared only in a citation. The difference between the two author groups was significant,  $\chi^2(4) = 20.53, p < .001$ .

## CONCLUSIONS

In this chapter, we have examined the extent to which, and the ways in which, theory and research in social cognition has contributed to doctrinal legal scholarship. Our analysis has been guided by analogous efforts to assess the influence of interdisciplinarity at the intersection of psychology and political psychology (e.g., Druckman et al., 2009). In taking stock of social cognition in law, we too were particularly influenced by two National Academy of Sciences standards (Committee on Facilitating Interdisciplinary Research, 2005) for assessing interdisciplinary research: (a) the extent to which social cognition researchers and legal scholars immersed themselves “in the languages, cultures, and knowledge of their collaborators” (p. 487) and (b) the extent to which the social cognition in law contribution involves conceptual integration, or the “amalgamation of previously unconnected elements, producing novel theories, concepts, or methods that draw on and are of relevance to both disciplines in tandem, rather than to one as donor and the other as recipient” (p. 487).

With these two standards in mind, we articulated and then empirically examined two issues. First, we sought to sketch a portrait of the universe of influence of social-cognitive research on legal scholarship. We expected an increased use of social-cognitive concepts in legal scholarship over time because the intersection of social cognition and the law has drawn greater attention in both psychological science and legal circles. Indeed, as shown in Figure 24.1, the total volume of legal scholarship using social cognition concepts between 1995 and 2011 has shown a remarkable increase, though the relative rate of social cognition usage has been fairly constant.

We also examined who was driving this expected expansion and found that it has involved a wide variety of authors with varying affiliations and formal educational backgrounds, as opposed to a small, homogeneous group of scholars. How did this relatively diverse set of scholars use social-cognitive concepts? Did contemporary concepts such as implicit bias supplement or supplant the use of more scientifically mature concepts (e.g., attribution) in legal scholarship? We found that the most common concept used was indeed attribution, followed by schema, implicit bias, and social judgment. However, between 1995–1999 and 2007–2011, the absolute use of attribution concepts and theories increased 13%, whereas the use of more contemporary concepts such as implicit bias and related concepts increased by 370%. Similarly, our analyses of the relative use patterns demonstrated that traditional concepts such as attribution and schema declined between 1995 and 2011, whereas concepts related to implicit bias increased dramatically. This striking increase in the use of implicit bias and related concepts also happened to coincide with two recent developments that have influenced legal scholarship. First, research on implicit processes has been central to the behavioral realism movement in doctrinal scholarship. The movement emphasizes that an intentional examination of the extent to which various legal procedures and rules, or more pointedly the social, psychological, and behavioral assumptions on which they rely, is scientifically justified or realistic (Greenwald & Krieger, 2006; Jolls & Sunstein, 2006; Kang & Banaji, 2006; Krieger &



Fiske, 2006). Second, this increase in the use of implicit bias and related concepts may also be driven by the increased use of social cognition by experts in employment discrimination litigation and, in particular, the very lively and contentious scientific debate over the use of the IAT as a reliable and valid indicator of implicit bias (e.g., Fiske & Borgida, 2008; Jost et al., 2009; Tetlock & Mitchell, 2009).

Our portrait of the influence of social cognition research on legal scholarship included two other aspects. First, we expected that the use of particular social cognition concepts would not be uniform across legal topics and that the legal topics with the highest rates of use of social cognition concepts would be those that satisfied the criteria of prominence and parity (or fit). We found that the usage patterns across 26 legal topics were not randomly distributed and that the seven legal topics that emerged from this analysis (jurisprudence and legal theory, criminal law, labor and employment law, civil procedure, legislation, evidence, and constitutional law) satisfied the criteria of prominence and parity, as expected. Second, we expected but found little support for the hypothesis that law review articles by authors with interdisciplinary expertise (either solo authors or teams of authors) would cover different legal topics than those authors or author teams without interdisciplinary training.

The second overarching goal of this chapter was to examine the extent to which the legal scholarship using social cognition concepts is substantively interdisciplinary. Are the insights from social-cognitive science influential in legal scholarship in ways that enrich and deepen the legal analysis at hand, our understanding of the implicated social-cognitive concept, or both? We first examined depth of treatment or use—how central are the social-cognitive concepts to the architecture of the arguments made in the law review articles that use them? Overall, we found that 41% of the sampled law review articles mentioned the social-cognitive concepts only in the references, whereas in 11% there was some textual discussion of the concept and in 5% the concepts actually were intellectually central to the focus of the article. As shown in Figure 24.10, we found no statistically significant

differences between the social-cognitive categories (attribution, social judgment, schema, and implicit bias) in terms of their depth of use (i.e., whether the concept was central or mentioned or merely included in the references).

In addition to depth of treatment, we delved deeper into the level of immersion by examining the use of empirical methods and collaboration. As expected, a small percentage (4.8%) of sampled law articles included original data analyses. But the intersection of collaborative author arrangements and the use of empirical methods proved quite interesting. We noted that plural authorship was quite common in empirical fields but not in legal scholarship. However, we also suggested that legal scholars doing meaningfully interdisciplinary work would be more likely to adopt the collaborative methodological norms of the social sciences than their pure jurisprudential theory-oriented peers in law. Thus, what we expected and found was that those sampled articles containing social-cognitive concepts had higher rates of coauthorship than typical law review articles. When we combined coauthorship status with our depth-of-treatment analysis, we found that the social-cognitive concepts were central to the architecture of the legal arguments in twice as many coauthored articles as those with single authors: 8% and 4%, respectively. Moreover, as shown in Figure 24.11, 36% of the sampled articles in which social cognition concepts were central were coauthored. More important, empirical analyses were more likely to appear in articles coauthored by teams of authors that included scholars trained in a nonlegal discipline. Social-cognitive concepts were also more likely to be intellectually central to the legal framework of sampled articles written by an author or authors with nonlegal training. Taken together, this finding suggests that, although a strong majority of social cognition in law may not reflect sufficient immersion or conceptual integration to meet the National Academy of Sciences criteria for meaningfully interdisciplinary work, a nontrivial amount of the social cognition used in legal thought does appear to reflect just that.

In this chapter, we have provided an evidence-based portrait of the universe of influence of social cognition research in legal scholarship, a portrait obviously constrained by the assumptions and

limitations of our analytic approach. Developing more refined measures of depth of treatment, for example, would enable us to address whether the social cognition concepts are primarily being used to buttress legal arguments that the authors are trying to establish or whether assumptions about social cognition processes in a given legal arena are leading the authors to question whether they need to think differently about the law. We offer only a first look at the extent to which theory and research from social cognition influences legal scholarship in an intellectually substantive rather than superficial manner. Our data suggest that author teams, collaborating authors with interdisciplinary expertise, are most associated with in-depth analyses in the reviewed

articles. This key finding is consistent with the emergence of teams in the production of knowledge in other arenas of research (Wuchty et al., 2007). Whether and how this influence flows back to enrich theory and research in social cognition was not examined here but is indeed our next research task. Thus, we contend that our approach to assessing social cognition in law is a more substantive gauge of the interdisciplinarity to be found at the intersection of social cognition and law and a potentially more informative way (compared with alternative, informal qualitative approaches) to understand, assess, and predict whether and how social cognition science influences legal scholarship and ultimately the development of legal policy, doctrine, and procedure.

#### APPENDIX 24.1: SOCIAL COGNITION SEARCH TERMS

Search terms	JPSP (SP&C; n = 1,537)		Social Cognition (n = 803)		JPSP (not SP&C; n = 7,571) <sup>a</sup>		JPSP odds ratio <sup>b</sup>	
	Abstract	Total	Abstract	Total	Abstract	Total	Abstract	Total
implicit	71	494	60	269	163	1642	2.20	1.71
& attitude <sup>c</sup>	9	186	18	165	14	606	3.18	1.58
& stereotype <sup>c</sup>	9	169	9	148	4	194	11.14	4.70
& bias <sup>c</sup>	9	12	11	161	20	30	2.22	1.98
& categorization <sup>c</sup>	5	144	2	125	3	254	8.23	2.98
& association test <sup>c</sup>	12	272	12	215	14	873	4.25	1.65
& measure <sup>c</sup>	2	2	4	4	6	6	1.64	1.64
automatic	37	287	32	203	63	689	2.94	2.29
& attitude <sup>c</sup>	1	126	10	120	7	254	0.70	2.57
& stereotype <sup>c</sup>	7	112	7	114	3	95	11.54	6.19
& bias <sup>c</sup>	5	166	3	118	8	305	3.09	2.88
& categorization <sup>c</sup>	5	108	2	100	3	138	8.23	4.07
social <sup>d</sup>	582	1,537	242	785	1,885	7,524	1.84	9.60
& cognition <sup>d</sup>	34	174	49	754	22	88	7.76	10.86
& judgment <sup>d</sup>	53	873	46	430	60	2,194	4.47	3.22
& perception <sup>d</sup>	83	1,048	55	453	81	3,493	5.28	2.50
& heuristic <sup>d</sup>	5	221	5	111	10	523	2.47	2.26
& categorization <sup>d</sup>	30	318	13	213	30	729	5.00	2.45
dual process models <sup>d</sup>	3	5	3	74	1	5	14.80	4.94
priming <sup>d</sup>	39	45	61	221	68	81	2.87	2.79
impression formation <sup>d</sup>	45	148	22	60	29	87	7.84	9.17
person perception <sup>d</sup>	33	61	17	21	19	36	8.72	8.65
schema	8	17	2	55	15	25	2.64	3.38
attribution	122	607	51	376	186	1,388	3.42	2.91

Note. Total articles estimated using searches of common words. JPSP = *Journal of Personality and Social Psychology*; SP&C = social perception and cognition classification code (3040).

<sup>a</sup>Values in these columns were calculated by subtracting JPSP (SP&C) values from total search results. <sup>b</sup>In the computation of JPSP odds ratio for *social*, 1 was added to the denominator to avoid error. <sup>c</sup>Included in the Implicit Bias concept category for analysis. <sup>d</sup>Included in the Social Judgment concept category for analysis.

## APPENDIX 24.2: DEPTH OF TREATMENT CATEGORIES

Category	Example
False positive	"The restrictive <b>attitude implicit</b> in the DBS Resolution, however, has apparently 'withered' since 1982." (Andrews, 2000, p. 19)
Passive use	"Both explicit bias (the stated values which are used to direct behavior deliberately) and <b>implicit bias</b> (those unconscious attitudes) have been shown to impact decision-making among caseworkers employed by state agencies responsible for investigating and monitoring reports of abuse and neglect." (Dixon, 2008, p. 116)
Citation only	"See, e.g., Jerry Kang & Kristin Lane, Seeing Through Colorblindness: <b>Implicit Bias</b> and the Law, 58 UCLA L. Rev. 465 (2010) (behavioral realism)." (Lenhardt, 2011, p. 292)
Concept mentioned	"These articles explore such topics as the critical race theory and the law and economics, <sup>330</sup> <b>implicit bias</b> , <sup>331</sup> racial disparities in medical care, <sup>332</sup> racial profiling, <sup>333</sup> and implications for lawyers in advocating against racism." (Parks, 2008, pp. 723–724)
Concept discussed	"Experiments show that <b>implicit bias</b> can predict behavior. If, for example, one registers bias against a group, one is less likely to make eye contact with a member of that group. <sup>142</sup> One is also more likely to believe that a member of the group is guilty of a crime or deserves a long sentence. <sup>143</sup> Bias also seems to be correlated with perspectives on public policy issues. People with anti-black bias are more likely to support racial profiling and to be against affirmative action. <sup>144</sup> As a writer in the Washington Post noted, 'This suggests that implicit attitudes affect more than snap judgments—they play a role in positions arrived at after careful consideration.' <sup>145</sup> " (Butler, 2006, p. 1036)
Concept central	"Considerable attention has been given to the Implicit Association Test (IAT), which finds that most people have an implicit and unconscious bias against members of traditionally disadvantaged groups. <b>Implicit bias</b> poses a special challenge for antidiscrimination law because it suggests the possibility that people are treating others differently even when they are unaware that they are doing so. Some aspects of current law operate, whether intentionally or not, as controls on <b>implicit bias</b> ; it is possible to imagine other efforts in that vein. An underlying suggestion is that <b>implicit bias</b> might be controlled through a general strategy of 'debiasing through law.'" (Jolls & Sunstein, 2006, p. 969)

Note. Search terms are in bold.

## APPENDIX 24.3: LEGAL CATEGORIES

Category	Example
Administrative and regulatory law	"During the past two decades there has been a surge of research on implicit bias within the fields of social psychology, cognitive science, and neuroscience." (Marouf, 2011, p. 418)
Alternative dispute resolution	"Rafeal Efrat, Attribution Theory Bias and the Perception of Abuse in Consumer Bankruptcy, 10 Geo. J. on Poverty L. & Pol'y 205, 217 (2003)." (Welsh, 2010, p. 577)
Civil procedure	"Fluency with a single procedural schemata could bridge that gap—although unfortunately the population learning the new language would be the state court practitioners, already the more marginalized of the two populations." (Main, 2007, p. 80)
Commercial law	"Martie G. Haselton & David M. Buss, Biases in Social Judgment: Design Flaws or Design Features?, in Social Judgments: Implicit and Explicit Processes 23 (Joseph P. Forgas et al. eds., 2003)." (O'Hara, 2005, p. 1950)
Constitutional law	"Lu-in Wang, <i>The Transforming Power of "Hate": Social Cognition Theory and The Harms of Bias-Related Crime</i> , 71 S. Cal. L. Rev. 47, 118 (1997)." (Bell, 2004, p. 389)
Contracts	"Cognitive psychologists call mental data structures that code information of this type "schemas," and consumers need to have specific schemas to understand a mortgage contract, a rental agreement, a life or health insurance policy, and so forth." (Stark & Choplin, 2009, p. 661)
Corporate and securities law	"Richard Nisbett & Lee Ross, Human Inference: Strategies and Shortcomings of Social Judgment 43–62 (1980)." (Van Der Weide, 1996, p. 86)
Criminal law	"See Harold H. Kelley, The Processes of Causal Attribution, 28 Am. Psychologist 107 (1973)." (Kremnitzer, 1998, p. 660)
Educational law	"See also Bachen et al., supra note 29, at 193 (presenting a survey of undergraduates about experiences with male and female teachers that showed "assessments of faculty were further influenced by the strength of students' gender schema")." (Maranville, 2006, p. 732)

(Continued)

## APPENDIX 24.3: LEGAL CATEGORIES (Continued)

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Environmental law	"The theme of attribution has generally been found to be a very salient characteristic in conflict situations." (Simosi & Allen, 1998, p. 316)
Evidence	"A second body of research indicates that people use cognitive devices called social schemas to organize information about the world around them." (Vidman & Diamond, 2001, p. 1137)
Family law	"Martin Daly et al., Kinship: The Conceptual Hole in Psychological Studies of Social Cognition and Close Relationships, in <i>Evolutionary Soc. Psychol.</i> 265 (Jeffrey A. Simpson & Douglas T. Kenrick eds., 1997)." (Herring, 2008, p. 556)
Health care and the law	"We find that when groups suffering ill health are defined in racial, class, or gender terms, Americans differ in their attribution of health disparities to individual behaviors versus biological or systemic factors." (Gollust & Lynch, 2011, p. 1061)
Human rights	"These practices allow students to understand concepts like implicit bias and ethnocentric thinking, which, in turn, allow them to comprehend the ways that all people misjudge, mishear and use their power inappropriately." (Bettinger-Lopez et al., 2011, p. 393)
Intellectual property law	"While objects are not tied to the person as an extension of personality, they are a means of communicating social perceptions." (Foster, 2009, p. 200)
International, foreign, & comparative law	"See Karen Bartsch & Henry Wellman, <i>Young Children's Attribution of Action to Beliefs and Desires</i> , 60 <i>Child Dev.</i> 946, 959 (1989)." (Caterina, 2004, p. 1547)
Jurisprudence and legal theory	"As we explore in this Article, the divide is based on two attributional approaches: the dispositionist approach, which explains outcomes and behavior with reference to people's dispositions (i.e., personalities, preferences, and the like), and the situationist approach, which bases attributions of causation and responsibility on unseen or unappreciated influences within us and around us." (Benforado & Hanson, 2008, p. 314)
Labor and employment law	"More discrimination than once thought is the result not of explicit and conscious attitudes, but of unconscious implicit bias." (Larson, 2008, p. 451)
Legal education	"Schema theory suggests that we remember new information by comparing it to old, familiar information that is stored in patterns, or schemata, in our brains." (Ramsfield, 1997, p. 171)
Legal history	"Some of this is actually measurable by looking at how our brain reacts, and others are measured by testing our implicit biases and our reaction time to various stimuli." (Harris, 2007, p. 457)
Legal practice	"Do people attribute outcome internally to effort or to luck?" (Cohen, 2011, p. 31)
Legislation	"Both explicit bias (the stated values which are used to direct behavior deliberately) and implicit bias (those unconscious attitudes) have been shown to impact decision-making among caseworkers employed by state agencies responsible for investigating and monitoring reports of abuse and neglect." (Dixon, 2008, p. 116)
Professional responsibility	"Social psychologists have called this tendency to overemphasize individual personality differences and underestimate the power of the situation 'the fundamental attribution error.'" (Perlman, 2007, p. 453)
Taxation	"The restrictive attitude implicit in the DBS Resolution, however, has apparently "withered" since 1982." (Andrews, 2000, p. 19)
Tort law	"See Susan T. Fiske & Shelley E. Taylor, <i>Social Cognition</i> 215 (2d ed. 1991)." (Luban, 1998, p. 380)
Trusts and estates	"Lee Ross & Craig A. Anderson, <i>Shortcomings in the Attribution Process: On the Origins and Maintenance of Erroneous Social Assessments, in Judgment Under Uncertainty</i> , supra note 158, at 129, 140." (Hirsch, 2004, p. 1101)

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## References

- Andrews, W. L., III. (2000). Targeted tax relief for space commerce—Part 2: “Astrolaw”—Where does space begin? *Journal of International Taxation*, 11, 10–42.
- Bell, J. (2004). O say, can you see: Free expression by the light of fiery crosses. *Harvard Civil Rights-Civil Liberties Law Review*, 29, 335–389.
- Benforado, A., & Hanson, J. (2008). The great attributional divide: How divergent views of human behavior are shaping legal policy. *Emory Law Journal*, 57, 311–408.
- Bettinger-Lopez, C., Finger, D., Jain, M., Newman, J., Paoletti, S., & Weissman, D. M. (2011). Redefining human rights lawyering through the lens of critical theory: Lessons for pedagogy and practice. *Georgetown Journal on Poverty Law and Policy*, 18, 337–399.
- Bluemke, M., & Friese, M. (2008). Reliability and validity of the Single-Target IAT (ST-IAT): Assessing automatic affect toward multiple attitude objects. *European Journal of Social Psychology*, 38, 977–997. doi:10.1002/ejsp.487
- Borgida, E., & Fiske, S. T. (2008). *Beyond common sense: Psychological science in the courtroom*. Malden, MA: Blackwell.
- Butler, P. (2006). Rehnquist, racism, and race jurisprudence. *George Washington Law Review*, 74, 1019–1042.
- Caterina, R. (2004). Comparative law and the cognitive revolution. *Tulane Law Review*, 78, 1501–1547.
- Cohen, C. R. (2011, May). Secrets to crafting winning case themes: Themes are the heart and soul of your case. *Practical Litigator*, 30–32.
- Committee on Facilitating Interdisciplinary Research. (2005). *Facilitating interdisciplinary research*. Washington, DC: National Academies Press.
- Cook, J. B. (Writer), & DiMartino, M. D. (Director). (2003). Racist dawg [Television series episode]. In M. Judge (Executive Producer), *King of the Hill*. New York, NY: Fox Network.
- Diamond, S. S., & Mueller, P. (2010). Empirical legal scholarship in law reviews. *Annual Review of Law and Social Science*, 6, 581–599. doi:10.1146/annurev-lawsocsci-102209-152848
- Dixon, J. (2008). The African-American Child Welfare Act: A legal redress for African-American disproportionality in child protection cases. *Berkeley Journal of African-American Law and Policy*, 10, 109–145.
- Druckman, J. N., Kuklinski, J. H., & Sigelman, L. (2009). The unmet potential of interdisciplinary research: Political psychological approaches to voting and public opinion. *Political Behavior*, 31, 485–510. doi:10.1007/s11109-009-9092-2
- Eisenberg, T. (2011). Origins, nature, and promise of empirical legal studies and a response to concerns. *University of Illinois Law Review*, 2011, 1713–1738.
- Ellickson, R. C. (2000). Trends in legal scholarship: A statistical study. *Journal of Legal Studies*, 29(Suppl. 1), 517–543. doi:10.1086/468084
- Faigman, D. L., Dasgupta, N., & Ridgeway, C. L. (2008). A matter of fit: The law of discrimination and the science of implicit bias. *Hastings Law Review*, 59, 1389–1434.
- Fiske, S. T., & Borgida, E. (2008). Providing expert knowledge in an adversarial context: Social cognitive science in employment discrimination cases. *Annual Review of Law and Social Science*, 4, 11.1–11.26.
- Fiske, S. T., & Taylor, S. E. (1991). *Social cognition* (2nd ed.). New York, NY: McGraw-Hill.
- Fiske, S. T., & Taylor, S. E. (2008). *Social cognition: From brains to culture*. New York, NY: McGraw-Hill.
- Foster, S. E. (2009). Invitation to a discourse regarding the history, philosophy and social psychology of a property right in copyright. *Florida Journal of International Law*, 21, 171–208.
- George, T. E. (2006). Empirical study of empirical legal scholarship: The top law schools. *Industrial Law Journal*, 81, 141–161.
- George, T. E., & Guthrie, C. (2002). Joining forces: The role of collaboration in the development of legal thought. *Journal of Legal Education*, 52, 559.
- Ginsburg, T., & Miles, T. J. (2011). Empiricism and the rising incidence of co-authorship in law. *University of Illinois Law Review*, 2011, 1785–1826.
- Girvan, E. J., Deason, G., & Borgida, E. (2013). *The generalizability of gender bias: Effects of expertise and accountability on sexism in labor arbitration decisions*. Unpublished manuscript.
- Gladwell, M. (2005). *Blink: The power of thinking without thinking*. New York, NY: Little, Brown.
- Gollust, S. E., & Lynch, J. (2011). Who deserves health care? The effects of causal attributions and group cues on public attitudes about responsibility for health care costs. *Journal of Health Politics, Policy and Law*, 1061–1095.
- Greenwald, A. G., & Krieger, L. H. (2006). Implicit bias: Scientific foundations. *California Law Review*, 94, 945–967. doi:10.2307/20439056
- Harris, C. I. (2007). “Too pure an air”: Somerset’s legacy from anti-slavery to colorblindness. *Texas Wesleyan Law Review*, 13, 439–450.
- Heise, M. (2002). Past, present, and future of empirical legal scholarship: Judicial decision making and the new empiricism. *University of Illinois Law Review*, 2002, 819–850.
- Herring, D. J. (2008). Kinship foster care: Implications of behavioral biology research. *Buffalo Law Review*, 56, 495–556.

- Hirsch, A. J. (2004). Default rules in inheritance law: A problem in search of its context. *Fordham Law Review*, 73, 1031–1101.
- Hoffman, M., & Topulos, K. (2008). Tyranny of the available: Under-represented topics, approaches, and viewpoints. *Syracuse Journal of International Law and Commerce*, 35, 175.
- Jolls, C., & Sunstein, C. R. (2006). The law of implicit bias. *California Law Review*, 94, 969–995. doi:10.2307/20439057
- Jost, J., Rudman, L. A., Blair, I. V., Carney, D. R., Dasgupta, N., Glaser, J., & Hardin, C. D. (2009). The existence of implicit bias is beyond reasonable doubt: A refutation of ideological and methodological objections and executive summary of ten studies that no manager should ignore. *Research in Organizational Behavior*, 29, 39–69. doi:10.1016/j.riob.2009.10.001
- Kang, J. (2005). Trojan horses of race. *Harvard Law Review*, 118, 1489–1593.
- Kang, J., & Banaji, M. R. (2006). Fair measures: A behavioral realist revision of “affirmative action.” *California Law Review*, 94, 1063–1118. doi:10.2307/20439059
- Kang, J., Bennett, M., Carbado, D., Casey, P., Dasgupta, N., Faigman, D., . . . Mnookin, J. (2012). Implicit bias in the courtroom. *UCLA Law Review*, 59, 1124–1186.
- Kovera, M. B., & Borgida, E. (2010). Social psychology and law. In D. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *Handbook of social psychology* (5th ed., Vol. 2, pp. 1343–1385). New York, NY: Wiley.
- Kremnitzer, M. (1998). On premeditation. *Buffalo Criminal Law Review*, 1, 627–660.
- Krieger, L. H., & Fiske, S. T. (2006). Behavioral realism in employment discrimination law: Implicit bias and disparate treatment. *California Law Review*, 94, 997–1062. doi:10.2307/20439058
- Kritzer, H. M. (2009). Empirical legal studies before 1940: A bibliographic essay. *Journal of Empirical Legal Studies*, 6, 925–968. doi:10.1111/j.1740-1461.2009.01165.x
- Lane, K. A., Kang, J., & Banaji, M. R. (2007). Implicit social cognition and law. *Annual Review of Law and Social Science*, 3, 427–451. doi:10.1146/annurev.law-socsci.3.081806.112748
- Larson, D. (2008). Unconsciously regarded as disabled: Implicit bias and the regarded-as prong of the Americans With Disabilities Act. *UCLA Law Review*, 56, 451–488.
- Left for dead: The gay man who befriended his attacker. (2006). In O. Winfrey (Executive Producer), *The Oprah Winfrey Show*. Chicago, IL: Harpo Productions. Retrieved from <http://www.oprah.com/oprahshow/Overcoming-Prejudice/13>
- Lenhardt, R. A. (2011). Localities as equality innovators. *Stanford Journal of Civil Rights and Civil Liberties*, 7, 265–292.
- Levinson, J., & Young, D. (2010a). Different shades of bias: Skin tone, implicit racial bias, and judgments of ambiguous evidence. *West Virginia Law Review*, 112, 307–350.
- Levinson, J., & Young, D. (2010b). Implicit gender bias in the legal profession: An empirical study. *Duke Journal of Gender Law and Policy*, 18, 1–44.
- Levinson, J. D., Cai, H., & Young, D. (2010). Guilty by implicit racial bias: The Guilty/Not Guilty Implicit Association Test. *Ohio State Journal of Criminal Law*, 8, 187.
- Levinson, J. D., & Smith, R. J. (Eds.). (2012). *Implicit racial bias across the law*. New York, NY: Cambridge University Press. doi:10.1017/CBO9780511820595
- Luban, D. (1998). A flawed case against punitive damages. *Georgetown Law Journal*, 87, 359.
- Main, T. O. (2007). Reconsidering procedural conformity statutes. *Western State University Law Review*, 35, 75–101.
- Maranville, D. (2006). Classroom incivilities, gender, authenticity and orthodoxy, and the limits of hard work: Four lenses for interpreting a “failed” teaching experience. *William and Mary Journal of Woman and Law*, 12, 699–732.
- Marouf, F. E. (2011). Implicit bias and immigration courts. *New England Law Review*, 45, 417–448.
- Martyn, S. R., & Bourguignon, H. J. (1997). Physician-assisted suicide: The lethal flaws of the Ninth and Second Circuit decisions. *California Law Review*, 85, 371–426. doi:10.2307/3481072
- O’Hara, E. A. (2005). Choice of law for Internet transactions: The uneasy case for online consumer protection. *University of Pennsylvania Law Review*, 153, 1883–1950.
- Parks, G. S. (2008). Toward a critical race realism. *Cornell Journal of Law and Public Policy*, 17, 683–745.
- Perlman, A. M. (2007). Unethical obedience by subordinate attorneys: Lessons from social psychology. *Hofstra Law Review*, 36, 451–476.
- Rachlinski, J., Johnson, S. L., Wistrich, A., & Guthrie, C. (2009). Does unconscious racial bias affect trial judges? *Notre Dame Law Review*, 84, 9–11.
- Ramsfield, J. J. (1997). Is “logic” culturally based? A contrastive, international approach to the U.S. law classroom. *Journal of Legal Education*, 47, 157–204.
- Robbennolt, J. K., & Sternlight, J. R. (2012). *Psychology for lawyers: Understanding the human factors in negotiation, litigation, and decision making*. Chicago, IL: American Bar Association.
- Sigelman, L. (2007). *The physics of political science and psychology: How social psychological concepts diffuse into political science*. Unpublished manuscript.

- Simosi, M., & Allen, P. T. (1998). Public perception of risk management in environmental controversies: A U.K. case study. *Risk, 9*, 309–327.
- Stark, D. P., & Choplin, J. M. (2009). A license to deceive: Enforcing contractual myths despite consumer psychological realities. *New York University Journal of Law and Business, 5*, 617–744.
- Tetlock, P. E., & Mitchell, G. (2009). Implicit bias and accountability systems: What must organizations do to prevent discrimination? *Research in Organizational Behavior, 29*, 3–38. doi:10.1016/j.riob.2009.10.002
- Van Der Weide, M. E. (1996). Against fiduciary duties to corporate stakeholders. *Delaware Journal of Corporate Law, 21*, 27–86.
- Vedantam, S. (2005, January 23). See no bias. *Washington Post*, p. W12. Retrieved from <http://www.washingtonpost.com/wp-dyn/articles/A27067-2005Jan21.html>
- Vidmar, N., & Diamond, S. S. (2001). Juries and expert evidence. *Brooks Law Review, 66*, 1121–1180.
- Walker, A. E., Jr. (2012). *Thesaurus of psychological index terms*. Retrieved from <http://psycnet.apa.org/index.cfm?fa=termfinder.displayTerms&rid=BA4A33CC-DF29-5BA0-8921-2515C02A1A6C>
- Welsh, N. A. (2010). What is “(im)partial enough” in a world of embedded neutrals. *Journal of the National Association of Administrative Law Judiciary, 30*, 495–457.
- Wilkins, D. B. (2004). From “separate is inherently unequal” to “diversity is good for business”: The rise of market-based diversity arguments and the fate of the black corporate bar. *Harvard Law Review, 117*, 1548–1615. doi:10.2307/4093260
- Wuchty, S., Jones, B. F., & Uzzi, B. (2007). The increasing dominance of teams in production of knowledge. *Science, 316*, 1036–1039. doi:10.1126/science.1136099