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THE LEGAL TECH BRO BLUES: GENERATIVE AI, LEGAL INDETERMINACY, AND THE FUTURE OF LEGAL RESEARCH AND WRITING

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I.   INTRODUCTION: THE LEGAL TECH BRO AND THE NEW LEGAL BIBLIOGRAPHER

In recent years, a new figure, the tech bro, has arrived in the legal field. He can be found opining on podcasts and social media platforms, selling his wares in the boardrooms of big law firms, and giving guest presentations in law school classrooms. He speaks with unwarranted confidence about the coming technological transformation of law and the brave new world of so-called "AI-driven" law practice that awaits lawyers and judges. He promises that these changes will bring unimaginable efficiencies and profits.

Occasionally, but not often, the legal tech bro touches on access to justice, suggesting that AI will solve this complex and age-old problem as well. He cannot fathom that AI would ever be used to justify cuts to legal aid or further rarify the luxury of skilled human legal representation. This is because the legal tech bro is the techno-optimist[1] *par excellence*, and he harbors an extreme aversion to

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[1] For an account of the techno-optimist ideology, see Jag Bhalla & Nathan J. Robinson, *'Techno-Optimism' is Not Something You Should*

skepticism, however well-informed, and a contempt for the defenders of established practices and processes. He perceives caution about the use of AI in law as a threat to his relevance and livelihood.

While the precise moment of the legal tech bro's arrival is difficult to pinpoint, it likely happened in the last decade, sometime between the rise of "brogrammer" culture in the greater tech industry[2] and before the brief AI hiatus that preceded the release of ChatGPT.[3] The legal tech bro is typically, though not always, a vendor of some legal tech product. And although not all vendors are legal tech bros, the legal tech bro's earliest habitat was certain legal tech startups, several of them now defunct, the cultures of which were known for their hubris, paranoia, and resistance to criticism of their products.

It is important to note, lest use of the noun "bro" and the pronouns "he" and "him" creates any confusion, that the legal tech bro does not belong to any single race, sex, sexual orientation, or class. However, the legal tech bro is typically white, male, heterosexual, and upper-middle to upper class with the elite credentials to show for it.[4] This is, perhaps, the root of his techno-optimism, for people like him have always been the beneficiaries of technological change. "Move fast and break things," he thinks, echoing the philosophy of one of his idols,[5] even if those "things" include the legal system itself.

In the last year, the legal tech bro's fortunes have been bolstered by the advent of generative AI: large language model (LLM) chatbots that can seemingly "do everything that a human being [can]

Believe   In,   CURRENT   AFFS.   (Oct.   20,   2023), https://www.currentaffairs.org/2023/10/techno-optimism-is-not-something-you-should-believe-in [https://perma.cc/QYC5-BN7S].

[2] *See* Douglas MacMillan, *The Rise of the 'Brogrammer'*, BLOOMBERG (Mar. 1, 2012, 8:15 PM), https://www.bloomberg.com/news/articles/2012-03-01/the-rise-of-the-brogrammer [https://perma.cc/5AW2-UCBZ].

[3] *See* Steve Lohr, *A.I. Is Coming for Lawyers, Again*, N.Y. TIMES (Apr. 10, 2023), https://www.nytimes.com/2023/04/10/technology/ai-is-coming-for-lawyers-again.html [https://perma.cc/LZG3-XNTF].

[4] *See* Cassandre Coyer, *The Legal Tech Funding Gap: Who Got the Most Funding   in   2023?*,   LAW.COM   (Dec.   19,   2023,   10:13   AM), https://www.law.com/legaltechnews/2023/12/19/the-legal-tech-funding-gap-who-got-the-most-funding-in-2023/ [https://perma.cc/R8WD-ZLPE].

[5] Henry Blodget, *Mark Zuckerberg on Innovation*, BUS. INSIDER (Oct. 1, 2009,   4:36   PM),   https://www.businessinsider.com/mark-zuckerberg-innovation-2009-10 [https://perma.cc/69YM-K9RZ].

do except drink and swear and go on [] strike."[6] Of course, LLM chatbots are not truly intelligent: they do not reason but rather derive statistical patterns from enormous amounts of training data in order to generate synthetic data with similar characteristics.[7] Where text generation is concerned, it would be fair to say that LLM chatbots do not so much provide information as produce "information-shaped"[8] sentences. A number of clever metaphors have been used to describe the LLM chatbot phenomenon—"stochastic parrots,"[9] "a kind of super-autocomplete,"[10] "a new form of alchemy,"[11] among them— but what Marshall McLuhan wrote of the television might be the most accurate and damning description of all: the chatbot "speaks, and yet says nothing."[12] During the AI hype cycle that followed the release of ChatGPT in November 2022, the "data cartels"[13] and several legal research startups, sensing a major profit opportunity, began working to develop law-specific generative AI products

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[6] 3 ALBERT BIGELOW PAINE, MARK TWAIN: A BIOGRAPHY 904 (1912). Twain made this quip of the Paige Compositor, his investment in which bankrupted him. *See* RON POWERS, MARK TWAIN: A LIFE 561 (2005).

[7] *See* Emily M. Bender & Alexander Koller, *Climbing Towards NLU: On Meaning, Form, and Understanding in the Age of Data*, PROC. 58TH ANN. MEETING ASS'N FOR COMPUTATIONAL LINGUISTICS 5185, 5188 (2020).

[8] Neil Gaiman (@neilhimself), TWITTER (Mar. 25, 2023, 9:49 AM), https://twitter.com/neilhimself/status/1639610373115375616 [https://perma.cc/3AJV-VZUU].

[9] Emily M. Bender, Timnit Gebru, Angelina McMillan-Major & Shmargaret Shmitchell, *Stochastic Parrots: Can Language Models Be Too Big?*, PROC. 2021 AMC CONF. ON FAIRNESS, ACCOUNTABILITY & TRANSPARENCY 610, 610 (2021); Elizabeth Weil, *You Are Not a Parrot*, N.Y. MAG.: INTELLIGENCER (Mar. 1, 2023), https://nymag.com/intelligencer/article/ai-artificial-intelligence-chatbots-emily-m-bender.html [https://perma.cc/RW6B-424E].

[10] Noam Chomsky, *The False Promise of ChatGPT*, N.Y. TIMES (Mar. 8, 2023), https://www.nytimes.com/2023/03/08/opinion/noam-chomsky-chatgpt-ai.html [https://perma.cc/S4FD-N6CM].

[11] Sharon Goldman, *Today's AI is 'Alchemy,' Not Science—What That Means and Why That Matters*, VENTUREBEAT (Sept. 18, 2023, 7:36 AM), https://venturebeat.com/business/todays-ai-is-not-science-its-alchemy-what-that-means-and-why-that-matters-the-ai-beat/ [https://perma.cc/Y29T-8TLP].

[12] MARSHALL MCLUHAN, UNDERSTANDING MEDIA: THE EXTENSIONS OF MAN 9 (1964).

[13] This is the term Sarah Lamdan uses to describe RELX and Thomson Reuters, the parent companies of LexisNexis and Westlaw, respectively, in her book of the same name. *See* SARAH LAMDAN, DATA CARTELS: THE COMPANIES THAT CONTROL AND MONOPOLIZE OUR INFORMATION 72–93 (2022).

trained on large private repositories of legal materials.[14] Although many of these products have yet to be released and practically none of them are widely available,[15] they have successfully driven the legal field into a state of AI hysteria.[16]

What are we to make of the legal tech bro's role in the legal field in light of these developments? Whereas the judge asks what the law is, the lawyer asks how law can be used in the client's interest, and the legal scholar asks what the law could be, the legal tech bro asks how law can be profitably automated. The legal tech bro's antithesis is another figure, one that has been around far longer but is virtually obscure today: the legal bibliographer, who asks how the law came to be what it is. Something of a Foucauldian genealogist of the law, the legal bibliographer uses the materials of law to unmask how the law operates in the margins.[17]

Legal bibliography has long been maligned in various quarters of the legal academy,[18] but the greatest challenge facing the legal bibliographer today is an image problem. "Legal bibliographer" conjures a senior and bespeckled scholar clad in a tweed coat and smoking a pipe while he examines an incunable in the rare book room of an elite academic law library. But this stereotype, at once antiquated and endearing, fails to capture the breadth and relevance

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[14] Jean O'Grady, *Standing on the Threshold of Change: 2023 in Review (A Somewhat Irreverent Review of the AI Hysteria That Swept Through the Legal Industry)*, DEWEY B STRATEGIC (Dec. 20, 2023), https://www.deweybstrategic.com/2023/12/standing-on-the-threshold-of-change-2023-in-review-a-somewhat-irreverent-review-of-the-ai-hysteria-that-swept-through-the-legal-industry.html [https://perma.cc/3J8Y-JGHC].

[15] Recently, Pablo Arredondo, co-founder and chief innovation officer at Casetext, told the hosts of a podcast that "what really convinced me [CoCounsel] was real was when the law librarian community didn't rip it to shreds." Greg Lambert & Marlene Gebauer, *Pablo Arredondo on the One-Year Anniversary of CoCounsel*, 3 GEEKS & A L. BLOG (Feb. 29, 2024), https://www.geeklawblog.com/2024/02/pablo-arredondo-on-the-one-year-anniversary-of-cocounsel.html [https://perma.cc/E56J-BSZ3]. But as one of my colleagues quipped, "That's only because we don't have access to it!"

[16] O'Grady, *supra* note 14.

[17] Nicholas Mignanelli, *Legal Research and Its Discontents: A Bibliographic Essay on Critical Approaches to Legal Research*, 113 LAW LIBR. J. 101, 127–28 (2021).

[18] *See, e.g.*, Christopher G. Wren & Jill Robinson Wren, *The Teaching of Legal Research*, 80 LAW LIBR. J. 7 (1988); Ellie Margolis & Kristen E. Murray, *Say Goodbye to the Books: Information Literacy at the New Legal Research Paradigm*, 38 U. DAYTON L. REV. 117 (2012); Robert C. Berring, *The End of Scholarly Bibliography: Reconceptualizing Law Librarianship*, 104 LAW LIBR. J. 69 (2012).

of legal bibliography. Legal bibliography is not, as many suppose it to be, the study of law books but of *legal information*.

Today's legal bibliographer, although no less historically informed, is fresh-faced, tech-savvy, techno-skeptic, and interested in the roles power and capital play in the development of legal information structures and legal research tools. Legal bibliographers consist of instructional law librarians (legal research professors) and their allies. And just as the legal bibliographer does not study law books but rather legal information, the legal bibliographer does not teach students how to use law books but rather how to find, use, evaluate, and criticize legal information and the technologies that facilitate it. In doing so, the legal bibliographer imparts to the law student the lesson at the heart of legal bibliography: legal tools and technologies are not neutral.

This insight is of course not unique to law but is particularly true of it. The legal bibliographer knows, for instance, that Blackstone's *Commentaries*, which attempt to naturalize and legitimate the legal status quo of 18th-century England, served as the foundation of American law and legal thought;[19] that the proliferation of case publishing in the 19th century nearly broke the myth of the American common law;[20] that the myth of the American common law was sustained by the invention of West's American Digest System, which, in turn, reshaped American law in its image when it was internalized by practitioners;[21] and that full-text searching, in spite of its initial promise, has hindered analogical reasoning and led to a preoccupation with factual minutiae.[22] Now the legal bibliographer warns, seemingly with little notice, of the careless development and use of generative AI in law, as it threatens to transform the corpus of Anglo-American law into a dataset, automate the legal status quo, and place *stare decisis* on steroids.

Whereas the legal tech bro is guided by implicit faith in the law's coherence and a vague notion of legal singularity, the legal bibliographer is convinced of law's indeterminacy, having seen the material evidence for it and being the intellectual progeny of countless failed attempts to remedy it. In the following pages, this Essay problematizes the legal tech bro's approach to the law by examining these concepts, "the legal singularity" and legal

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[19] Duncan Kennedy, *The Structure of Blackstone's Commentaries*, 28 BUFF. L. REV. 205, 211 (1979).

[20] Robert C. Berring, *Legal Research and Legal Concepts: Where Form Molds Substance*, 75 CALIF. L. REV. 15, 22–23 (1987).

[21] *Id.* at 25.

[22] Richard Delgado & Jean Stefancic, *Why Do We Ask the Same Questions? The Triple Helix Dilemma Revisited*, 99 LAW LIBR. J. 307, 318 (2007).

indeterminacy. Next, this Essay considers what aspects of lawyering should be automated by exploring the role experience plays in legal research and how it forms the basis of legal creativity. With this understanding in mind, this Essay proposes a new normative model of the legal research and writing process that allows lawyers to responsibly augment their law practice with LLM-based technologies. Finally, this Essay concludes by discussing the curricular implications of this model.

II. THE LEGAL SINGULARITY MEETS LEGAL INDETERMINACY

In an overlooked corner of the legal academy, a significant scholarly debate is raging with profound implications for how the legal field will understand its relationship to technology in the coming decades. At its center is the feasibility and desirability of the legal singularity or computational law, the proposition that "[a]dvances in technology, especially the improvement and widespread proliferation of artificial intelligence," will lead to "a stable and complete order, capable of addressing and resolving practically all types of legal uncertainty in real time and on demand."[23] In many ways, it is a vision of law that only the owner of a legal tech startup could love.[24]

Premised upon an idiosyncratic conception of legal information[25] and an unexamined positivist definition of legal research,[26] the legal singularity holds that we are entering a computational era in legal information that will "enable legal prediction, allowing lawyers to access answers to legal questions without expensive and laborious legal research."[27] This means using machine learning and natural language processing to canvass large volumes of legal information in order to detect patterns that predict outcomes in the pursuit of "legal certainty"[28] and "complete law."[29] Proponents have variously claimed that the legal singularity will

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[23] ABDI AIDID & BENJAMIN ALARIE, THE LEGAL SINGULARITY: HOW ARTIFICIAL INTELLIGENCE CAN MAKE LAW RADICALLY BETTER 3 (2023).

[24] *Id.* at 21–22. This is interesting in that the proponents of the legal singularity claim that it "will run up against those whose livelihoods (at least as they now know them) depend upon the failure or significant delay of the legal singularity" but fail to acknowledge the financial interests of those proffering and defending the concept. *Id.* at 31.

[25] AIDID & ALARIE, *supra* note 23, at 38–43 (classifying sources of legal information according to their so-called "predictiveness").

[26] *Id.* at 43 ("At the core, legal research is a quest for understanding what law requires.").

[27] *Id.* at 58–59.

[28] *Id.* at 67.

[29] *Id.* at 73–92.

fulfill Holmes's prediction theory of law,[30] achieve Rawls's reflective equilibrium,[31] and play the role of Dworkin's fictitious Justice Hercules,[32] but Pound's mechanical jurisprudence[33] seems more on point. To be fair, the legal singularity causes consternation even among its proponents. For instance, a recent article in *Tax Notes*, co-authored by one of the concept's originators, unironically argues that while "[t]raditional legal research skills . . . may become less critical" due to advances in AI, the work of tax lawyers is unlikely to be automated because of "the human touch of empathy" they bring to client relationships![34]

The legal singularity has been roundly criticized,[35] but the most incisive criticisms have been leveled by Frank Pasquale, a noted expert on AI and the law, who points out that computational law mistakes "traces of the legal process" for "the process itself."[36] Pasquale writes:

> AI is a long way from explaining why a case should be decided a certain way, and how broadly or narrowly an opinion ought to be written. Nor have technology firms proven themselves particularly adept at recognizing the many values at stake in such questions. Given that law is a human institution primarily concerned with human activities, it is

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[30] *See* Benjamin Alarie, *The Path of the Law: Towards Legal Singularity*, 66 U. TORONTO L.J. 443 (2016); *see also* AIDID & ALARIE, *supra* note 23, at 39–40.

[31] *See* Alarie, *supra* note 30, at 453–54.

[32] *See* Daniel Goldsworthy, *Dworkin's Dream: Toward a Singularity of Law*, 44 ALT. L.J. 286, 286 (2019).

[33] That is a "petrification" that "tends to cut off individual initiative in the future, to stifle independent consideration of new problems and of new phases of old problems, and so to impose the ideas of one generation upon the other." Roscoe Pound, *Mechanical Jurisprudence*, 8 COLUM. L. REV. 605, 606 (1908).

[34] Benjamin Alarie, Rory McCreight & Cristina Tucciarone, *Will AI Replace Tax Practitioners?*, TAX NOTES (Oct. 30, 2023), https://www.taxnotes.com/featured-analysis/will-ai-replace-tax-practitioners/2023/10/27/7hghl [https://perma.cc/RXV9-RAZR].

[35] *See, e.g.*, Robert F. Weber, *Will the "Legal Singularity" Hollow Out Law's Normative Core?*, 27 MICH. TECH. L. REV. 97, 99–105 (2020); IS LAW COMPUTABLE?: CRITICAL PERSPECTIVES ON LAW AND ARTIFICIAL INTELLIGENCE (Simon Deakin & Christopher Markou eds., 2020). For a reply to the critics of the legal singularity, see ADID & ALARIE, *supra* note 23, at 93–117.

[36] Frank Pasquale, *The Resilient Fragility of Law*, *Foreword* to IS LAW COMPUTABLE?, *supra* note 35, at vi–vii.

quite possible that AI will never attain such forms of reason and evaluation.[37]

At the core of Pasquale's critique is legal indeterminacy:

> What makes law relatable is also what makes it frustrating: the sense that anyone can have an opinion as to how a case should come out, or a regulation drafted. Avoiding indeterminacy would take a project of specialization and bureaucratization at least as tightly managed and technologically complex as Google's search engine, or Tencent's WeChat app.
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> The virtual realities of legal automation may put us on a path toward such determinacy. But they are dangerous because long 'residence' in them (or even aspiration to create them) can dull us to the values of the complexity and intractability of the real. They condition us to make our expression and action even more 'machine readable' (or to expect litigants to do so in order to be recognized as having valid claim).[38]

Legal indeterminacy is a concept with a long and storied history.[39] Although it has its roots in legal realism, today it is most often associated with the Critical Legal Studies movement.[40] In its most radical form, legal indeterminacy holds that "the existing body of legal doctrines— statutes, administrative regulations, and court decisions—permits a judge to justify any result she desires in any particular case,"[41] and that "*stare decisis* neither leads to nor requires any particular results or rationales in specific cases" because "[a] wide variety of precedents and a still wider variety of interpretations and distinctions are available from which to pick and choose."[42] Consequently, cases, to take one example of legal information,

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[37] *Id.* at vii.

[38] *Id.* at xv.

[39] *See* James E. Herget, *Unearthing the Origins of a Radical Idea: The Case of Legal Indeterminacy*, 39 AM. J. LEGAL HIST. 59, 59 (1995).

[40] *See* Akbar Rasulov, *What CLS Meant by the Indeterminacy Thesis*, LAW & POL. ECON. BLOG (Mar. 27, 2023), https://lpeproject.org/blog/what-cls-meant-by-the-indeterminacy-thesis/ [https://perma.cc/E8FW-VPYZ].

[41] Lawrence B. Solum, *On the Indeterminacy Crisis: Critiquing Critical Dogma*, 54 U. CHI. L. REV. 462, 462 (1987).

[42] David Kairys, *Legal Reasoning*, *in* THE POLITICS OF LAW: A PROGRESSIVE CRITIQUE 11, 14 (David Kairys ed., 1st ed. 1982).

"record the language judges must use to legitimize their decisions, but the real reasons for decisions are not expressed."[43]

The extent of law's indeterminacy has long been contested,[44] but even scholars who reject radical indeterminacy concede that "law is underdeterminate in important ways."[45] Proponents of the legal singularity dismiss legal indeterminacy as an unanswerable question of legal philosophy,[46] but the claim that law is indeterminate would seem to warrant careful consideration given their aspirations. If the law is indeterminate to any extent, then computational law does not predict what the law is but reifies it, anticipating the whims of the dominant culture and expediting their fulfillment.

III. The Life of the Law Has Not Been Logic

Legal indeterminacy also has important implications for legal information. If law is indeterminate, then legal research is not the positivist search for what the law is or what the law requires ("the right answer"), nor mere legal information retrieval. Instead, legal research is a process in which the legal researcher, informed by the experience of living in the world—observing the law and/or being the subject of it—engages the sources of law and participates in the creation of new legal knowledge. Put simply, if law is "what the judge had for breakfast,"[47] then legal research and analysis is the creative process in lawyering.

An "artificial intelligence" like an LLM does not live, much less live in the world. What an LLM possesses of the world is only documentation. Experiences that are undocumented or under-documented, for instance those of marginalized communities that disseminate and preserve knowledge through oral tradition, are statistically disadvantaged or insignificant. Accordingly, biases are baked into the dataset and impossible to resolve. This is especially true because the generalization capabilities of transformer models,

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[43] Steven M. Barkan, *Deconstructing Legal Research: A Law Librarian's Commentary on Critical Legal Studies*, 79 Law Libr. J. 617, 630 (1987).

[44] *See, e.g.*, Solum, *supra* note 41, at 462–63; Ken Kress, *Legal Indeterminacy*, 77 Calif. L. Rev. 283, 283–87 (1989).

[45] Lawrence B. Solum, *Legal Theory Lexicon: Indeterminacy, Determinacy, and Underdeterminacy*, Legal Theory Blog (Sept. 3, 2023), https://lsolum.typepad.com/legaltheory/2023/09/legal-theory-lexicon-indeterminacy-determinacy-and-underdeterminacy.html [https://perma.cc/VCE4-SPTC].

[46] *See* Adid & Alarie, *supra* note 23, at 97 ("[W]e do not wish to rehash a century of debate about whether the law has content independent of its instrumental uses.").

[47] *See* Dan Priel, *Law Is What the Judge Had for Breakfast: A Brief History of an Unpalatable Idea*, 68 Buff. L. Rev. 899, 899 (2020).

such as LLMs, are closely tied to their training data.[48] Consider, for instance, how the LLM image generator Midjourney is incapable of rendering a Black doctor treating white children.[49]

Forty years ago, Richard Delgado, a founding figure in Critical Race Theory, wrote "The Imperial Scholar: Reflections on a Review of Civil Rights Literature," a scholarly exposé about an influential inner circle of elite white male scholars that had come to dominate civil rights scholarship by citing its members to the exclusion of legal scholars of color.[50] Delgado found that, whatever the intentions of these authors, their "uniformity of life experience"[51] made them incapable of sharing "the values, desires, and perspectives of the population whose rights [were] under consideration."[52] Delgado called on these authors to "redirect their efforts" and defer to "innovative" scholars of color.[53]

Just as white scholars can be problematic expositors and theorists of civil rights law because they lack the experiences of people of color, an LLM is no substitute for a human attorney. This is because, as philosopher David Abram writes, "meaning . . . remains rooted in the sensory life of the body—it cannot be completely cut off from the soil of direct, perceptual experience without withering and dying."[54] Accordingly, an LLM, which inherently lacks the experience of living in the world, will never be capable of the legal creativity of lawyers like Thurgood Marshall[55] and Ruth Bader Ginsburg[56]—to say nothing of Pauli Murray,[57] the gender-

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[48] *See generally* Steve Yadlowsky, Lyric Doshi & Nilesh Tripuraneni, *Pretraining Data Mixtures Enable Narrow Model Selection Capabilities in Transformer Models*, ARXIV (Nov. 3, 2023), https://arxiv.org/abs/2311.00871 [https://perma.cc/VCE4-SPTC].

[49] Arsenii Alenichev, Patricia Kingori & Koen Peeters Grietens, *Reflections Before the Storm: The AI Reproduction of Biased Imagery in Global Health Visuals*, 11 LANCET GLOB. HEALTH 1496 (2023).

[50] Richard Delgado, *The Imperial Scholar: Reflections on a Review of Civil Rights Literature*, 132 U. PENN. L. REV. 561 (1984).

[51] *Id.* at 572.

[52] *Id.* at 568.

[53] *Id.* at 577.

[54] DAVID ABRAM, THE SPELL OF THE SENSUOUS: PERCEPTION AND LANGUAGE IN A MORE-THAN-HUMAN WORLD 80 (2012).

[55] *See, e.g.*, Sweatt v. Painter, 339 U.S. 629 (1950); McLaurin v. Okla. State Regents, 339 U.S. 637 (1950); Brown v. Bd. of Educ., 347 U.S. 483 (1954).

[56] *See, e.g.*, Reed v. Reed, 404 U.S. 71 (1971); Frontiero v. Richardson, 411 U.S. 677 (1973); Craig v. Boren, 429 U.S. 190 (1976).

[57] *See generally* Pauli Murray, Should the Civil Rights Cases and Plessy v. Ferguson be Overruled? (1944) (unpublished seminar paper) (on file with the Schlesinger Library, Radcliffe Institute for Advanced Study, Harvard

nonconforming Black legal scholar and activist whose work influenced both.[58]

Today, AI technology is no closer to *generating* legal theories and strategies like the ones these lawyers *created* than it was when the term "artificial intelligence" was coined in the midst of the Cold War.[59] However, AI can inhibit legal creativity, and thus stifle legal innovation, by automating the aspects of lawyering that facilitate it, specifically legal research and analysis. Legal tech bros compare established methods of legal research and analysis to using Shepard's in print[60] and promise that automation will create opportunities for lawyers "to focus on the most impactful aspects of their practice"[61] —whatever those are. But the automation of legal research and analysis, "far from freeing the lawyer's . . . time for 'higher questions,' may enslave it to 'routinized' formulas; as a result ideas like that of justice, the richness and ambiguities of which are essential for dealing with the human situation, may receive even less attention than in the past."[62]

Put a different way, legal indeterminacy does not prevent legal technology from presenting legal information as though law is determinate: replacing the apparent subjectivity of the judge and the lawyer with the faux objectivity of the programmer and the algorithm, and transforming law, which formerly spoke with many organic voices, into a single synthetic utterance. Here one imagines a real-life version of Frederic Brown's short story *Answer*,[63] sans the AGI, in which the lawyer asks, "Is law determinate?" and the chatbot

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University); Pauli Murray & Mary O. Eastwood, *Jane Crow and the Law: Sex Discrimination and Title VII*, 34 GEO. WASH. L. REV. 232 (1965).

[58] *See* ROSALIND ROSENBERG, JANE CROW: THE LIFE OF PAULI MURRAY (2017); *see also* MY NAME IS PAULI MURRAY (Amazon Studios 2021).

[59] *See* John McCarthy, Marvin Minsky, Nathaniel Rochester & Claude Shannon, A Proposal for the Dartmouth Summer Research Project on Artificial Intelligence (Aug. 31, 1955) (unpublished manuscript) (on file with Rauner Special Collections Library, Dartmouth College).

[60] *See, e.g.*, Pioneers and Pathfinders, SEYFARTH (Nov. 29, 2023), https://www.seyfarth.com/news-insights/pioneers-and-pathfinders-damien-riehl.html [https://perma.cc/5GX2-5HA6].

[61] Bob Ambrogi, *Casetext Launches Co-Counsel, Its OpenAI-Based 'Legal Assistant' To Help Lawyers Search Data, Review Documents, Draft Memos, Analyze Contracts and More*, LAWSITES (Mar. 1, 2023), https://www.lawnext.com/2023/03/casetext-launches-co-counsel-its-openai-based-legal-assistant-to-help-lawyers-search-data-review-documents-draft-memos-analyze-contracts-and-more.html [https://perma.cc/3YMA-CFRW].

[62] Julius Stone, *Man and Machine in the Search for Justice*, 16 STAN. L. REV. 515, 516 (1964).

[63] *See* FREDRIC BROWN, ANGELS AND SPACESHIPS 23–24 (1954).

answers, "Yes, *now* law is determinate," before striking divergent legal outcomes with a bolt of lightning and fusing the possibility of law reform shut.

IV. A NEW MODEL OF LEGAL RESEARCH AND WRITING

What will be necessary to prevent the determinization of law is a process of legal research and writing that "prepare[s] a free relationship"[64] between the legal field and technology. Such a process will simultaneously allow lawyers to augment their practice with new technology while maintaining control over it and safeguarding legal creativity. For the reasons discussed above, legal research and analysis is a poor candidate for automation. Routine document drafting, on the other hand, is an area in which generative AI has great potential in law practice.[65] In fact, this is similar to the official position taken by the courts of England and Wales.[66]

What follows is a sketch of what a new normative legal research and writing process that responsibly incorporates LLM-based technology might look like. This is not an attempt to anticipate user behavior but to set forth a model for legal research and writing that, allowing for the effective utilization of generative AI, does not foreclose possibilities but continues to open up meaning, as good legal research always has. Given the wide variety of products, as well as the number of products that have yet to be released or made widely available, the following description is platform agnostic.

1. Research: Edification → 2. Prompting and Generation → 3. Research: Verification → 4. Writing: Polishing and Preparation

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[64] Martin Heidegger, *The Question Concerning Technology*, *in* THE QUESTION CONCERNING TECHNOLOGY AND OTHER ESSAYS 3, 3 (William Lovitt trans., 1977) (1954).

[65] *See* Joseph Regalia, *From Briefs to Bytes: The GAI Renaissance in Legal Writing*, 59 TULSA L. REV. (forthcoming 2024).

[66] *See* CTS. & TRIBUNALS JUDICIARY, ARTIFICIAL INTELLIGENCE (AI): GUIDANCE FOR JUDICIAL OFFICE HOLDERS (Dec. 12, 2023), https://www.judiciary.uk/wp-content/uploads/2023/12/AI-Judicial-Guidance.pdf [https://perma.cc/5HEA-DJZ6].

1.   *Research: Edification*

Legal tech bros often tell potential buyers that their generative AI products will replace secondary sources. But is the chatbot really the new Blackstone? While this is a clever marketing strategy for startups with a dearth of proprietary secondary sources, it is nonetheless bad legal research. This is because LLM outputs are not stable or reproducible,[67] and LLM chatbots can influence the user's moral judgment without their knowledge.[68] Furthermore, the legal researcher needs to know *something* to use an LLM-based law practice tool effectively. Technology is no substitute for competence, and the use of legal technology without sufficient knowledge of the underlying law one is working with is a recipe for malpractice. For all these reasons, the LLM chatbot is an inadvisable starting place.

Accordingly, the first step must continue to be reference to a reliable secondary source.[69] While this step is not particularly exciting, it grounds the endeavor in reliable human legal expertise. What this looks like will continue to depend on the individual legal researcher and the circumstances. Seasoned attorneys working in a particular area of law have always relied on their knowledge and experience, consulting the secondary source or sources they consider most authoritative as necessary. For instance, a senior copyright attorney looks to *Nimmer on Copyright* for insight on a niche issue of licensing. Similarly, an activist lawyer reads outsider legal scholarship that criticizes the prevailing legal regime and offers novel theories that can be applied to the facts of a client's case. This should continue. But what about the law student, the new lawyer, and the lawyer working with an unfamiliar area of law? For best results, they should seek background information from reliable secondary sources like legal encyclopedias, treatises, and state, local, and specialized practice materials, and continue from there.

However, we must not to give a free pass to legal publishers, which charge exorbitant prices for clunky electronic versions of these materials,[70] or the legal academy, which largely abandoned

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[67] *See* Shuyin Ouyang, Jie M. Zhang, Mark Harman & Meng Wang, *LLM is Like a Box of Chocolates: The Non-determinism of ChatGPT in Code Generation*, Arxiv (Aug. 5, 2023), https://arxiv.org/abs/2308.02828 [https://perma.cc/KM9J-4VQB].

[68] *See* Sebastian Krügel, Andreas Ostermaier & Matthias Uhl, *ChatGPT's Inconsistent Moral Advice Influences User's Judgment*, 13 Sci. Reps. (2023).

[69] *See* Kent C. Olson, Legal Research in a Nutshell 24–25 (14th ed. 2021).

[70] *See, e.g.*, Brian L. Frye (@brianlfrye), Twitter (Nov. 23, 2023, 4:26 AM), https://twitter.com/brianlfrye/status/1727619502571933893 [https://perma.cc/V7AF-692D].

treatise writing decades ago.[71] To quote Richard Danner's foreword to the *Michigan Law Review*'s 2012 Annual Survey of Books:

> In the twenty-first century, American lawyers could benefit most from authoritative works on specialized subjects by knowledgeable scholars who are not only able to provide interpretive frameworks for tackling new questions but also conversant with technologies that lawyers employ for seeking and working with legal information. Twenty-first-century Blackstones will be technologically literate legal scholars who understand the relationships between form, content, and structure, and who possess the skills to present legal information in innovative ways appropriate to the formats in which information is now published, identified, and delivered.[72]

The legal field must work to develop and encourage twenty-first-century Blackstones who will continue to humanize the law as technology advances.

2.   *Prompting and Generation*

Terms and connectors searching has been a staple of the legal research curriculum since the days of the Westlaw Automated Law Terminal. While sometimes it seems like Boolean search logic is to legal research what Hand's calculus of negligence is to torts, teaching searching is, above all, about showing students how to use precise language to describe problems and refine questions: "Always the beautiful answer who asks a more beautiful question."[73]

The LLM chatbot interface requires the use of natural language, but this is deceptive. Output quality is highly dependent upon the prompt, and any advice from legal tech bros suggesting that skill and method is unnecessary can be safely disregarded. Consequently, the

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[71] *See* Fred R. Shapiro, *The Most-Cited Legal Books Published Since 1978*, 29 J. LEGAL STUD. 397, 397–98 (2000); *see also* John H. Langbein, *The Rise and Fall of Legal-Academic Treatise Writing in the United States*, *in* PERSPECTIVES ON THE LEGAL TREATISE: THE SECOND YALE LEGAL INFORMATION SYMPOSIUM (Femi Cadmus & Nicholas Mignanelli eds., forthcoming 2024).

[72] Richard A. Danner, *Oh, the Treatise!*, 111 MICH. L. REV. 821, 834 (2013).

[73] E.E. CUMMINGS, COMPLETE POEMS 1904–1962, at 462 (George J. Firmage ed., 1994).

ethos of searching must transfer to prompting even as the emphasis changes from *querying* to *directing*.

In their article, "AI Tools for Lawyers: A Practical Guide," Daniel Schwarcz and Jonathan H. Choi recommend the following general strategies for effective prompting: providing details, iterating, and thinking step-by-step.[74] More recently, Jennifer Wondracek developed a prompt worksheet that invites the legal researcher to think through the role, output (format and jurisdiction), issue, and refinement instructions beforehand.[75] While strategies for prompting and teaching effective prompting continue to develop, the focus must be on assessing needs and using concise language to generate quality legal content rather than on the features of any particular product.

3. Research: Verification

So-called "hallucinations," a term that is problematic because of its anthropomorphic connotation, are a feature, not a bug, of the LLM.[76] Furthermore, a recent study by researchers at the Stanford RegLab and the Institute for Human-Centered AI found that "hallucinations" are particularly prevalent when legal information is involved.[77] Although grounding the model in a particular source of information through retrieval-augmented generation (RAG) and limiting the length of interactions can mitigate the risk of "hallucination," it will never be zero.[78] Recently, legal research

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[74] Daniel Schwarcz & Jonathan H. Choi, *AI Tools for Lawyers: A Practical Guide*, 108 MINN. L. REV. HEADNOTES 1, 5–7 (2023).

[75] *See* Jenny Wondracek, *Introducing AI Prompt Worksheets for the Legal Profession*, AI L. LIBRS. (Jan. 10, 2024), https://www.ailawlibrarians.com/2024/01/10/introducing-ai-prompt-worksheets-for-the-legal-profession/ [https://perma.cc/2WFQ-TD6U].

[76] *See* Matt O'Brien, *Tech Experts Are Starting to Doubt that ChatGPT and A.I. 'Hallucinations' Will Ever Go Away: 'This Isn't Fixable,'* FORTUNE (Aug. 1, 2023, 12:54 PM), https://fortune.com/2023/08/01/can-ai-chatgpt-hallucinations-be-fixed-experts-doubt-altman-openai/ [https://perma.cc/Z9UF-AJCC].

[77] *See* Matthew Dahl, Varun Magesh, Mirac Suzgun & Daniel E. Ho, *Large Legal Fictions: Profiling Legal Hallucinations in Large Language Models*, ARXIV (Jan. 2, 2024, 5:28 PM), https://arxiv.org/abs/2401.01301 [https://perma.cc/W6G3-P63F].

[78] Professor Paul McGreal of Creighton University School of Law found this out when he asked Lexis+ AI "What cases have applied *Students for Fair Admissions, Inc. v. Harvard College* to the use of race in government decision-making?" and the chatbot generated nonexistent cases "decided" in 2025 and 2026. In light of this experience, Professor McGreal concluded, "I don't see [Lexis+ AI] as a serious research tool." *See* Paul McGreal (@conlawgeek), TWITTER (Feb. 27, 2024, 2:31 PM),

vendors that have spent decades, and in some cases over a century, guaranteeing the accuracy of their publications have transitioned overnight to a sales pitch of "our product almost never hallucinates, but it's on you, the researcher, to make sure!"[79]

Accordingly, this stage of the process consists of independently verifying citations to sources, especially those not found through reliable legal research methods. This is not simply a matter of checking to see if these sources exist, although that would be a good start,[80] but also validating them and ensuring that relying on them does not undermine the interests of the client in ways that only a human attorney would have the context to recognize.

4. Writing: Polishing and Preparing

Even if most day-to-day legal writing tasks are soon performed using generative AI, lawyers will still be accountable for the documents they sign and will need to ensure that these documents rhetorically accomplish what they are intended to do. This is no different from what lawyers do with legal forms, a centuries-old law practice tool.[81] Thus, this final step of polishing and preparing the generated content for use.

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https://twitter.com/conlawgeek/status/1762561111725899859 [https://perma.cc/MKG5-5TK5].

[79] *See, e.g.*, *LexisNexis Launches Lexis+ AI, a Generative AI Solution with Linked Hallucination-Free Legal Citations*, LEXISNEXIS (Oct. 25, 2023), https://www.lexisnexis.com/community/pressroom/b/news/posts/lexisnexis-launches-lexis-ai-a-generative-ai-solution-with-hallucination-free-linked-legal-citations [https://perma.cc/Q2CR-TP7V] ("[Lexis+ AI] *minimizes* the risk of invented content, or hallucinations." (emphasis added)).

[80] *See* Benjamin Weiser & Nate Schweber, *The ChatGPT Lawyer Explains Himself*, N.Y. TIMES (June 8, 2023), https://www.nytimes.com/2023/06/08/nyregion/lawyer-chatgpt-sanctions.html [https://perma.cc/U3YN-5R5E]; Pranshu Verma & Will Oremus, *These Lawyers Used ChatGPT to Save Time. They Got Fired and Fined*, WASH. POST (Nov. 16, 2023, 10:39 AM), https://www.washingtonpost.com/technology/2023/11/16/chatgpt-lawyer-fired-ai/ [https://perma.cc/93XK-L5UX].

[81] *See* Morris L. Cohen, *Legal Forms: From Clay to Computers*, 31 YALE L. REP., Spring 1985, at 25–28; M. H. Hoeflich, *Law Blanks & Form Books: A Chapter in the Early History of Document Production*, 11 GREEN BAG 189, 1055 (2008); LAUREL DAVIS, DON'T REINVENT THE WHEEL: THE HISTORY OF FORMS IN ANGLO-AMERICAN LEGAL LITERATURE (2016).

V. CONCLUSION

The legal tech bro may be a hurdle to the thoughtful evaluation and adoption of new technologies, but he is here to stay. He is a manifestation of late capitalism in the legal field. The only remedy for the legal tech bro blues is to empower the legal bibliographer, and the easiest way to achieve this is by exposing law students to legal bibliography.

At most American law schools, legal research is combined with legal writing,[82] typically over the objections of law librarians and legal writing instructors alike.[83] But legal research and legal writing are two different skill sets. This distinction, recently recognized by the National Conference of Bar Examiners in designating legal research as one of the seven discrete foundation skills to be tested on the NextGen Bar Exam,[84] will become starker as the use of generative AI in law practice spreads.

Preparing tomorrow's lawyers to responsibly use emerging technologies in the practice of law will require the national development of a standalone legal research course, preferably taught in the first year. This course must center critical legal information literacy, an approach to legal research pedagogy that conceptualizes "legal information as a social construct produced and published by people" in order to help students "develop a critical consciousness about legal information,"[85] alongside legal technology use and evaluation skills.[86] Ideally, such a course would "[d]raw[] on theories

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[82] Only 29 of the 169 law schools that responded to the 2019–2020 ALWD/LWI Legal Writing Survey indicated that they require an introduction to legal research course taught independently of legal writing. ASS'N OF LEGAL WRITING DIRS. & LEGAL WRITING INST., ALWD/LWI LEGAL WRITING SURVEY, 2019–2020: REPORT OF THE INSTITUTIONAL SURVEY 21 (2020), https://www.alwd.org/images/resources/ALWDLWI2019-20InstitutionalSurveyReport.pdf [https://perma.cc/BY4S-9W2L].

[83] *See* Sarah Valentine, *Legal Research as a Fundamental Skill: A Lifeboat for Students and Law Schools*, 39 BALT. L. REV. 173, 201–04 (2010).

[84] *See* TESTING TASK FORCE OF THE NAT'L CONF. OF BAR EXAM'RS, FINAL REPORT OF THE TESTING TASK FORCE 14 (2021), https://nextgenbarexam.ncbex.org/reports/final-report-of-the-ttf/ [https://perma.cc/CER4-PW5X].

[85] *See* Yasmin Sokkar Harker, *Critical Legal Information Literacy: Legal Information as a Social Construct*, *in* INFORMATION LITERACY AND SOCIAL JUSTICE: RADICAL PROFESSIONAL PRAXIS 205, 209 (Lua Gregory & Shana Higgins eds., 2013).

[86] For an example of this type of legal research course content, see *Learning About Law and Tech, Hands (and Headsets) On*, YALE L. SCH.

that trace all the way back to Frederick Hicks" to "construct[] a broad-ranging approach to legal literature and research that includes how to use the CFR's List of Sections Affected and the relation of LEXIS to Critical Legal Studies. In this setting, legal research can be taught as a discrete set of principles and methodologies."[87] Only the addition of such a course to the American law school curriculum will ensure that the legal field is not left to the mercy of the legal tech bro.

TODAY (Dec. 20, 2022), https://law.yale.edu/yls-today/news/learning-about-law-and-tech-hands-and-headsets [https://perma.cc/WSD9-93CS].

[87] Robert C. Berring & Kathleen Vanden Heuvel, *Legal Research: Should Students Learn It or Wing It?*, 81 LAW LIBR. J. 431, 442 (1989).