# TOWARD AN ETHICAL HUMAN-COMPUTER DIVISION OF LABOR IN LAW PRACTICE

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## INTRODUCTION

By now, even casual observers of the legal profession are familiar with the "fake court citations" case.[1] In June of 2023, Judge P. Kevin Castel of the U.S. District Court for the Southern District of New York fined two lawyers

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1. There has been reference to "fake court citations" in several news reports. *See, e.g.*, Ramishah Maruf, *Lawyer Apologizes for Fake Court Citations*, CNN (May 28, 2023, 3:28 PM), https://www.cnn.com/2023/05/27/business/chat-gpt-avianca-mata-lawyers/index.html [https://perma.cc/HMT3-K5HG]; Dan Milmo, *Two US Lawyers Fined for Submitting Fake Court Citations from ChatGPT*, GUARDIAN (June 23, 2023, 5:14 AM), https://www.theguardian.com/technology/2023/jun/23/two-us-lawyers-fined-submitting-fake-court-citations-chatgpt [https://perma.cc/XW4Y-YQQP]. Other articles refer to the scandal slightly differently as involving "fake case citations." *See, e.g.*, Jane Wester, *Judge Imposes $5K Fine on Lawyers Who Submitted ChatGPT-Generated Fake Case Citations*, N.Y. L.J. (June 22, 2023, 3:29 PM), https://www.law.com/newyorklawjournal/2023/06/22/judge-imposes-5k-fine-on-lawyers-who-submitted-chatgpt-generated-fake-case-citations/?slreturn=20231121212732 [https://perma.cc/WCV4-22Q2].

for submitting case law that—as it turns out—did not actually exist.[2] The lawyers, both experienced civil litigators, admitted to using the artificial intelligence (AI) application ChatGPT[3] to generate cases and quotes that were included in their filing.[4] These lawyers were apparently unaware of the technology's propensity to "hallucinate"—an uncomfortable but technical term used to describe how artificially intelligent language models like ChatGPT "will literally invent things that sound reasonable, yet are plain wrong."[5]

To say that the case sent a ripple through the legal community would be an understatement. Judge Castel acknowledged as much, explaining that the relatively modest $5,000 fine was appropriate in part because of the "significant publicity generated by [the lawyers'] actions."[6] Importantly, the case occurred against the backdrop of a debate in the profession about the extent to which the proliferation of AI could help, hurt, or altogether replace lawyers.[7] For some, it was a cautionary tale about how the apparent upsides of AI might not always be effectively balanced against its risks. For others, the case was confirmation that our technologized future will lead lawyers

2. The case in question is *Mata v. Avianca, Inc.*, No. 22-CV-1461, 2023 WL 4114965 (S.D.N.Y. June 22, 2023). The underlying dispute involved Roberto Mata's suit against Avianca, an airline, "asserting that he was injured when a metal serving cart struck his left knee during a flight from El Salvador to John F. Kennedy Airport." *Id.* at *2. Mata's lawyers submitted the invented cases to the court in response to Avianca's motion to dismiss. *See id.* Judge Castel stated that the fake citations alone might not have caused as substantial an issue but instead admonished the lawyers for how they "doubled down and did not begin to dribble out the truth until [a later time], after the Court issued an Order to Show Cause why one of the individual Respondents ought not be sanctioned." *Id.* at *1.

3. *See* CHATGPT, https://chat.openai.com/ (last visited Dec. 22, 2023). If only for whimsy's sake, I asked the latest version of ChatGPT, GPT-4, the following question: "what are you?" It answered as follows: "I am ChatGPT, a large language model developed by OpenAI. I'm designed to assist with a wide range of tasks, including answering questions, providing explanations, assisting with language-related tasks, and generating creative content. My capabilities are based on the information and training I've received up to April 2023."

4. *See Mata*, 2023 WL 4114965, at *1.

5. Damien Charlotin, Large Language Models and the Future of Law (Aug. 22, 2023) (unpublished manuscript), https://ssrn.com/abstract=4548258. For more information about hallucination in large language models like ChatGPT, see Ayush Agrawal, Mirac Suqzun, Lester Mackey & Adam Kalai, Do Language Models Know When They're Hallucinating References? (Sept. 13, 2023) (unpublished manuscript), https://arxiv.org/abs/2305.18248.

6. *Mata*, 2023 WL 4114965, at *17 ("In considering the need for specific deterrence, the Court has weighed the significant publicity generated by Respondents' actions . . . . The Court concludes that a penalty of $5,000 paid into the Registry of the Court is sufficient but not more than necessary to advance the goals of specific and general deterrence.").

7. There is an emerging genre dedicated to discussing the future of lawyers in light of advances in artificial technology. For some notable recent examples, see ABDI AIDID & BENJAMIN ALARIE, THE LEGAL SINGULARITY: HOW ARTIFICIAL INTELLIGENCE CAN MAKE THE LAW RADICALLY BETTER (2023); IS LAW COMPUTABLE?: CRITICAL PERSPECTIVES ON LAW AND ARTIFICIAL INTELLIGENCE (Simon Deakin & Christopher Markou eds., 2020); Benjamin Alarie, Anthony Niblett & Albert H. Yoon, *How Artificial Intelligence Will Affect the Practice of Law*, 68 U. TORONTO L.J. 106 (2018); Tim Wu, *Will Artificial Intelligence Eat the Law?: The Rise of Hybrid Social Ordering Systems*, 119 COLUM. L. REV. 2001 (2018); Jonathan H. Choi, Kristin E. Hickman, Amy B. Monohan & Daniel Schwarcz, *Chat-GPT Goes to Law School*, 71 J. LEGAL EDUC. 387 (2022); Rebecca J. Kunkel, *Artificial Intelligence, Automation, and Proletarianization of the Legal Profession*, 56 CREIGHTON L. REV. 69 (2022).

down a path of blunder.[8] And even though the reality of the case was far less dramatic than initially presented (the lawyers simply failed to verify the accuracy of ChatGPT's output),[9] the implications were clear: misusing AI could result in clients being poorly served, in lawyers breaching their ethical duties, and in courts being altogether duped.

In this Essay, I explain that responsible and ethical use of AI in law practice requires reconceptualizing the lawyer's professional relationship to technology. The current commercial-industrial relationship is based on a stylized model of technology as mechanical application, not calibrated to emergent AI-enabled technologies. Put differently, lawyers cannot interact with AI-enabled technologies the way that they traditionally interact with, say, word processors. For AI-enabled technologies, I explain that a "division of labor" framework is more fruitful; like horizontal professional relationships between peers or vertical ones in professional hierarchies, lawyers ought to interact with sophisticated technologies through arrangements that optimize for their relative skills.[10] This reconceptualization is necessary for at least two related reasons. First, technologies that purport to perform sophisticated tasks (for example, analysis, judgment, and synthesis) will tend to have higher error rates because of the nature of the information that they process and their objectives being generally imprecise. Unlike mechanical applications, for which error is tantamount to failure, errors in higher-order tasks—such as those involving judgment, synthesis, or analysis—are not necessarily disqualifying. As a result, safe use of these tools requires a template that both accommodates and mitigates error. Second, AI technologies pose an asymmetrical risk: the peculiar mix of obligations, rights, and public interest considerations means that failure carries high costs. As the "fake citations case" demonstrates, misusing AI-enabled tools could generate substantial legal-ethical harms.

## I. TOWARD A NAVIGABLE FRAMEWORK

### *A. Rejecting Definitions and Categories of AI*

The legal profession is not alone in grappling with how to best accommodate AI. Currently, discussions about AI are plagued by two related

8. It is worth noting that other such cases emerged in recent months, including some with notable individuals. For the recent case involving Michael Cohen, see Pranshu Verma, *Michael Cohen Used Fake Cases Created by AI in Bid to End His Probation*, WASH. POST (Dec. 29, 2023, 3:54 PM), https://www.washingtonpost.com/technology/2023/12/29/michael-cohen-ai-google-bard-fake-citations/ [https://perma.cc/S4UP-FRKJ].

9. *Mata*, 2023 WL 4114965, at *15 ("Mr. LoDuca violated Rule 11 in not reading a single case cited in his March 1 Affirmation in Opposition and taking no other steps on his own to check whether any aspect of the assertions of law were warranted by existing law.").

10. Here, I rely on an early formulation of the "division of labor" by Professors Jack Gibbs and Dudley Poston, Jr., which they define as "differences among members of a population in their sustenance activities and the related functional interdependence." Jack P. Gibbs & Dudley L. Poston, Jr., *The Division of Labor: Conceptualization and Related Measures*, 53 SOC. FORCES 468, 469 (1975). I discuss how I reconceptualize this idea below. *See infra* Part II.

uncertainties: a legal-regulatory uncertainty and a definitional uncertainty. First, the legal-regulatory uncertainty: there are few meaningful rules—or adjudicated cases—to signal to developers and users of AI how their technologies will be treated. As of this writing, the United States does not have comprehensive federal legislation governing AI, though since February 2023 there have been at least fifty proposed bills in the 118th Congress concerning artificially intelligent technologies.[11] Beyond the federal level, some fifteen states and Puerto Rico have "adopted resolutions or enacted legislation" concerning AI[12] but, as the Brennan Center for Justice observes, most of these "delegate research obligations to government or government-organized entities to increase institutional knowledge of AI and better understand its possible consequences."[13] The absence of meaningful legislation has meant that efforts to regulate AI largely take the form of voluntary codes promulgated by governments, organizations and even technologists themselves.[14] The White House's Office of Science and Technology Policy's *Blueprint for an AI Bill of Rights* is a recent example of the dominant approach: the framework articulates principles—such as safety, privacy, notice, etc.—but largely leaves it to organizations to thereafter operationalize these principles.[15] In short, efforts to regulate AI-enabled technologies are in their infancy.

This legal and regulatory uncertainty is secondary to—and perhaps even the result of—a longstanding definitional uncertainty about what artificial intelligence *is*. Disentangling AI's many constituent parts is a tall order given the relative absence of consensus in a literature that spans some eight decades.[16] Here, I instead focus on efforts to understand AI in the context of rulemaking. These efforts tend to organize themselves into two categories in the literature and in the available legal and policy frameworks:

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11. *See Artificial Intelligence Tracker*, BRENNAN CTR. FOR JUST. (Jan. 5, 2024), https://www.brennancenter.org/our-work/research-reports/artificial-intelligence-legislation-tracker [https://perma.cc/LV5G-957B].

12. Nikki Davidson, *Map: How Are State and Local Governments Navigating AI Regulation?*, GOV'T TECH. (Oct. 30, 2023), https://www.govtech.com/biz/data/how-are-state-and-local-governments-navigating-ai-regulation [https://perma.cc/G7KN-GMJF].

13. Lawrence Norden & Benjamin Lerude, *States Take the Lead on Regulating Artificial Intelligence*, BRENNAN CTR. FOR JUST. (Nov. 6, 2023), https://www.brennancenter.org/our-work/research-reports/states-take-lead-regulating-artificial-intelligence [https://perma.cc/6QYA-L7UQ].

14. Technology companies have played a significant role in advocating for AI regulation in the United States. Jillian Deutsch observes, however, that in the European Union, "lobbyists for these same companies are fighting measures that they believe would needlessly constrict tech's hottest new sector." Jillian Deutsch, *Big Tech Companies Want AI Regulation—but on Their Own Terms*, BLOOMBERG NEWS (June 27, 2023), https://www.bnnbloomberg.ca/big-tech-companies-want-ai-regulation-but-on-their-own-terms-1.1938321# [https://perma.cc/H22V-949E].

15. *See Blueprint for an AI Bill of Rights*, WHITE HOUSE, https://www.whitehouse.gov/ostp/ai-bill-of-rights/ [https://perma.cc/4L8J-DQPR] (last visited Mar. 3, 2024).

16. P.M. Krafft, Meg Young, Michael Ratell, Karen Huang & Ghislain Bugingo, *Defining AI in Policy Versus Practice*, *in* AIES '20: PROCEEDINGS OF THE AAAI/ACM CONFERENCE ON AI, ETHICS, AND SOCIETY 72, 73 ("Researchers in AI have long recognized the lack of definitional consensus in the field.").

"comprehensive definitions" and "functional categorizations."[17] Comprehensive definitions are those that aspire to some reasonable breadth. Take, as one example, the definition of AI offered in 15 U.S.C. § 9401(3).[18] This example is particularly illustrative because it appears in the October 2023 Executive Order on *Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence*[19] in the Federal Trade Commission's November 2023 Omnibus Resolution[20] and borrows language fairly extensively from recommendations issued by the Organisation for Economic Co-operation and Development (OECD)'s Council of Artificial Intelligence.[21] The statute reads:

> The term "artificial intelligence" means a machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations or decisions influencing real or virtual environments. Artificial intelligence systems use machine and human-based inputs to—(A) perceive real and virtual environments; (B) abstract such perceptions into models through analysis in an automated manner; and (C) use model inference to formulate options for information or action.[22]

15 U.S.C. § 9401(3) has the hallmarks of a comprehensive definition. It is relatively broad; not only does the statute cast a wide net (systems that use machine *and* human-based inputs), but it also declines to distinguish between types of systems (those that make predictions, recommendations, *or* decisions that influence real *or* virtual environments). There is some specificity, albeit minor. For instance, § 9401(3)(B) above suggests that systems that feature human intervention at the model-to-analysis stage might be out of the definition's scope. But that is more or less where it stops.[23] The definition does not distinguish between different types of AI, nor does it acknowledge differences between AI that present through software media and AI that present through, say, robotics.

Of course, the preference for comprehensive definitions is understandable from a regulatory perspective. Definitions need to be broad enough to serve enforcement ends in multiple contexts, and developers of AI tools need to anticipate the extent to which these rules might apply to them.[24] Yet these

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17. I am construing the literature broadly to also include nonscholarly sources (such as policy documents) that discuss definitions of AI. Because of the nascence of the field of legal technology and because it is only beginning to take root in academic discourse, scholars share the epistemic space with practitioners, technologists, policy analysts, and others.

18. 15 U.S.C. § 9401(3).

19. Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, Exec. Order No. 14,110, 88 Fed. Reg. 75191 (Oct. 30, 2023).

20. Press Release, Fed. Trade Comm'n, FTC Authorizes Compulsory Process for AI-Related Products and Services (Nov. 21, 2023), https://www.ftc.gov/news-events/news/press-releases/2023/11/ftc-authorizes-compulsory-process-ai-related-products-services [https://perma.cc/V782-USFB].

21. *See* ORG. FOR ECON. COOP. & DEVELOP., RECOMMENDATION OF THE COUNCIL ON ARTIFICIAL INTELLIGENCE (2023).

22. 15 U.S.C. § 9401(3).

23. *Id.*

24. There is no shortage of individuals and experts lamenting the lack of consensus regarding definitions of AI and noting that this state of affairs poses challenges for regulation.

broad definitions of AI have three shortcomings that make them less useful in the legal profession's context. First, broad definitions present a paradox: they often cast a very wide net in order to regulate the widest possible range of activity (overinclusivity), but they are also not sufficiently specific to capture some activity that should be squarely within their scope (underinclusivity).[25] Consider 15 U.S.C. § 9401(3) once more. There, AI tools are understood as *systems*, and so there remains an open question as to whether discrete *applications* are considered AI. In organizational settings, in which AI is being deployed to serve specific business or process functions, it is unclear whether any principles-based frameworks would guide responsible use of an application aimed at improving contract review, for instance.[26] Second, in addition to presenting the overinclusivity/underinclusivity paradox, broad definitions of AI will often require ex post clarification to be workable. A large body of law and economics literature discusses how broad legal standards often require ex post adjudication by successive courts to shape their contours.[27] Yet in organizational settings, no such mechanisms for after-the-fact adjudication exist. As a result, the organizations that are tasked with interpreting the third problem of broad and comprehensive definitions of AI is that they tend to contemplate some newness. Put differently, the definitions are self-consciously aimed at regulating technologies that break with the past. The result is that some legacy AI technologies that generate some of the same legal-ethical concerns as AI-enabled technologies may escape scrutiny.

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*See, e.g.*, Matt O'Shaughnessy, *One of the Biggest Problems in Regulating AI Is Agreeing on a Definition*, CARNEGIE ENDOWMENT FOR INT'L PEACE (Oct. 6, 2022), https://carnegieendowment.org/2022/10/06/one-of-biggest-problems-in-regulating-ai-is-agreeing-on-definition-pub-88100 [https://perma.cc/72QT-Y35B] ("As policymakers around the world have attempted to create guidance and regulation for AI's use in settings ranging from school admissions and home loan approvals to military weapon targeting systems, they all face the same problem: AI is really challenging to define."). It is also worth noting that some specialized definitions of discrete types of AI applications exist in certain domains. For instance, Bryan Casey and Professor Mark A. Lemley point out that 49 U.S.C. § 44801(5) defines "counter-UAS system." *See* Bryan Casey & Mark A. Lemley, *You Might Be a Robot*, 105 CORNELL L. REV. 287, 387 n.220 (2020). Casey and Lemley use this to helpfully point out some of the problems of overbroad definitions, noting that the definition of counter-UAS systems in the statute "raises the possibility that the FAA will unintentionally regulate eagles that have been known to capture drones." *Id.*

25. In the context of regulating "robots," Casey and Lemley make a similar observation about the California's bot disclosure bill, S.B. 1001, 2017–2018 Leg., Reg. Sess. (Cal 2018) (codified at CAL. BUS. & PROF. CODE §§ 17940–17943 (West 2024)), and share a helpful turn of phrase: "Like Schrodinger's regulation, [the bill] is simultaneously over- and under-inclusive" *Id.* at 328.

26. Nathaniel Lovin of the Technology Policy Institute explains that the definition from 15 U.S.C. § 9401(3) is "both too narrow and too broad: It does not readily include generative AI unless you interpret it broadly, which would cause it to also encompass computer systems few would consider to be AI." Nathaniel Lovin, *We Need a New Definition of AI*, TECH. POL'Y INST. (Dec. 18, 2023), https://techpolicyinstitute.org/publications/artificial-intelligence/we-need-a-new-definition-of-ai/ [https://perma.cc/UB25-PN3K].

27. For a good summary of the problem of over- and underinclusiveness in rulemaking, see generally Anthony J. Casey & Anthony Niblett, *The Death of Rules and Standards*, 92 IND. L.J. 1401 (2017).

In contrast to the comprehensive definition approach is the functional category approach. The functional category approach usually takes one of two forms: either AI-enabled technologies are categorized according to their business purpose (for example, AI in healthcare, security, and law) or according to their type (for example, generative AI, machine learning, natural language processing, and robotics). Like comprehensive definitions, functional categories suffer from shortcomings that render them ineffective in the context of law practice. First and most obviously, for categories to be useful for regulatory purposes, they need to be specific enough to be distinct from one another. With specificity comes increased risk that categories will be underinclusive; a rule is underinclusive when it fails to capture a significant proportion of the behavior that it is designed to regulate.[28] This risk is compounded in the context of emerging technologies, in which even longstanding observers cannot predict new developments.[29] Rulemakers who want to restrain misuse of AI must—if regulating by category—anticipate circumstances that are perhaps yet to emerge. Here, the broad definitions favored by the federal government have the advantage; in being insufficiently particularized, broad definitions can accommodate more yet-unanticipated future activity. Relatedly, premising any AI guidance on specific categories could simply promote strategic evasive behavior on the part of AI stakeholders, namely developers and users.

### *B. Challenges for Legal Ethics*

Taken together, the shortcomings associated with the comprehensive definition approach (over- and underinclusiveness, the need for ex post clarification, and the fact that regulations are unnecessarily future-oriented) and the functional category approach (their specificity undermining their regulatory scope) contribute to an immature regulatory environment surrounding AI. But what does this all mean for lawyers and their day-to-day practice? These early weaknesses implicate lawyers twice over. First, in their client representation, lawyers are being asked to assist with navigating legal-regulatory and definitional uncertainty in ways that make robust ethical practice difficult. Indeed, much like judges and regulators themselves, lawyers are being asked to interpret the implications of

28. For a helpful discussion regarding over- and underinclusiveness, see Colin S. Diver, *The Optimal Precision of Administrative Rules*, 93 YALE L.J. 65, 73 (1983) ("Increasing the transparency of a rule may increase the variance between intended and actual outcomes. The rulemaker may be unable to predict every consequence of applying the rule or to foresee all of the circumstances to which it may apply.").

29. This view of AI's future trajectory being essentially unpredictable is endorsed by Geoffrey Hinton, one of modern AI's progenitors. *See* Ashlee Vance, *Oral History: Geoff Hinton on How AI Came to Be and What We're Supposed to Do with It*, SUBSTACK (Apr. 27, 2021), https://ashleevance.substack.com/p/oralhistorywithgeoffhinton [https://perma.cc/C85Z-5CEW]; *see also* Amy Webb, *How to Prepare for a GenAI Future You Can't Predict*, HARV. BUS. REV. (Aug. 31, 2023), https://hbr.org/2023/08/how-to-prepare-for-a-genai-future-you-cant-predict [https://perma.cc/Y93G-MF4U] ("First, it's too early to predict the exact future of AI—especially given that generative AI is just one tiny area of a field with many interdependencies, each in various stages of development.").

technological developments that are occurring at considerable speed. Professor Jamila Jefferson-Jones explains this in the context of local government lawyers advising municipalities with AI-enabled "smart city technologies" like data collection sensors in high-traffic locations.[30] There, lawyers have to play the expansive role of "advisor-evaluator[],"[31] thus "participat[ing] in both evaluating the impact of various smart 'products' and advising the city of the legal impacts of adoption."[32] This requires broad technological competence and is necessitated by the peculiar constellation of challenges posed by AI (such as privacy and data security). In addition to evaluating the risks associated with certain technologies, lawyers sometimes must evaluate whether technologies are likely to be successful on their own terms, particularly in circumstances in which failure might itself mean liability. Take, for example, lawyers that are advising corporate clients about AI-enabled cybersecurity applications that purport to better protect against breaches. Because the fact of a breach would create liability exposure, evaluating the technology's actual effectiveness is a component part of the lawyers' assessment of a breach's legal consequences.

The immature regulatory environment also affects lawyers in their ability to discharge their professional ethical duties. This is largely attributable to an incongruency between legal ethics and the comprehensive definitions/functional categorizations approach to understanding AI. As an initial matter, neither approach is sufficiently attentive to the actual harms that legal ethics regimes aim to constrain. Whether a given technology is, in fact, AI or not is distinctly *not* what causes a legal-ethical violation. Similarly, whether a given legal technology is an example of a machine learning application, a generative AI application, or an automated decision-making system is not in and of itself problematic.

In fact, professional codes are altogether unconcerned with how lawyers execute their day-to-day tasks and what technologies they use. Instead, legal ethics codes are principally concerned with the ultimate harms that these activities can produce. This is true in both substance and procedure. It is true substantively because the rules of professional ethics codes tend to impose sanctions where some injury is felt by one of the legal ethics' overlapping constituencies (clients, the public, or the profession).[33] It is also

30. Jamila Jefferson-Jones, *Advising the "Smart City": When Artificial Intelligence and Big Data Are the Subjects of Professional Advice, What Is a Local Government Lawyer to Do?*, 50 U. TOL. L. REV. 447, 447 (2019) ("Just as technology is changing the practice of law, it is also reshaping urban life, as cities become 'smarter.' New 'smart city' technologies often incorporate sensors and interactive devices that generate huge amounts of data (commonly referred to as 'Big Data') that are then processed via artificial intelligence ('AI') and may be shared via connected devices that comprise part of the Internet of Things ('IoT').").

31. *Id.* at 449.

32. *Id.* at 454.

33. For the purposes of this discussion, I consider rules to be expressions of law that are promulgated by institutional authorities such as legislatures and courts. The American Bar Association's Model Rules of Professional Conduct (the "Model Rules") have been adopted in meaningful form in all fifty states and the District of Columbia. *See Alphabetical List of Jurisdictions Adopting Model Rules*, AM. BAR ASS'N, https://www.americanbar.org/

true procedurally: legal ethics regimes do not regulate by monitoring lawyer behavior.[34] Instead, legal ethics regimes depend on consumers of legal services to report ethical breaches. Put differently, the place at which legal ethics accesses lawyer conduct is where harm is possible. The light-touch supervision of professional ethics regimes generally makes it such that the means through which lawyers execute their duties is irrelevant.[35] Legal ethics rules that restrict or encourage the use of, say, large language models, are as out of place as legal ethics rules that restrict or encourage the use of desktop email clients or browser-based document storage. That is true regardless of whether desktop email clients and browser-based document storage create heightened privacy and confidentiality concerns or increase the risk of inadvertent disclosure (spoiler: they *do*). Consequently, lawyers receive little in the way of ethical guidance by definitions or categorizations of AI technologies.

### *C. Deterministic Versus Probabilistic Technologies*

A more fruitful understanding of AI and its associated challenges, then, is one that best enables lawyers to anticipate the sorts of harms that are likely to implicate their legal-ethical rights and obligations. Here, I suggest a simple scheme for distinguishing between technologies based on their propensity to produce the kind of risk that lawyers are compelled to guard against: a model of emerging legal technologies as either deterministic or probabilistic.[36] As an initial matter, it is worth emphasizing that this is principally a stylized model; a large and robust body of literature in mathematics, as well as in both the physical and computer sciences, discusses deterministic and probabilistic systems, and the debates in those epistemic communities about appropriate definitional boundaries far exceed the scope of this Essay. The insights that are borne out in the distinctions, however, are instructive.

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groups/professional_responsibility/publications/model_rules_of_professional_conduct/alpha_list_state_adopting_model_rules/ [https://perma.cc/3NRX-QRMX] (last visited Mar. 3, 2024). Courts or their delegates—such as ad hoc tribunals, in the case of attorney discipline—have the power to interpret the Model Rules. With this established, I do not consider important expressions of norms, like office codes of conduct or nonbinding professional oaths, to be per se ethics rules.

34. *See generally* MODEL RULES OF PRO. CONDUCT (AM. BAR ASS'N 2020).

35. *See* Joan MacLeod Heminway, *Professional Responsibility in an Age of Alternative Entities, Alternative Finance, and Alternative Facts*, 19 TRANSACTIONS: TENN. J. BUS. L. 227, 228 (2017) (explaining that business lawyers in the U.S. "find little in the way of robust, tailored guidance in most applicable bodies of rules governing their professional conduct").

36. The terms will be familiar to readers of popular AI literature, but other than Professor Gerald J. Postema's passing coupling of the two terms, this framework is not otherwise featured in the legal scholarship. *See* GERALD J. POSTEMA, LAW'S RULE: THE NATURE, VALUE, AND VIABILITY OF THE RULE OF LAW 296 (2022) ("Algorithms are deterministic or probabilistic, but always reliably repeatable: once data is provided, they require no fresh cognitive effort by the executor."). Postema's passage here refers to algorithms and thus does not use deterministic and probabilistic in the broad sense that I do in this Essay.

First, consider deterministic technologies. These are systems that are largely predictable.[37] The hallmark of a deterministic technology is that repeated commands will yield repeated results. Deterministic technologies can be analogized to mechanical applications. As a simple example, consider one of the more ubiquitous technologies in professional settings: word processing software. A tap of the spacebar on a standard keyboard would move the cursor on a blank document approximately one-quarter of an inch. The technological process that underlies this is complex; in modern computers, it involves information being routed to and processed by a computer's operating system. But this action is not conceptually distinct from, say, turning a doorknob. Each time a working doorknob is turned, it should disengage the latching mechanism and enable the user to open the door. For the doorknob it is the interaction of physical components—which are of course subject to the laws of physics—that leads to its repeatability and predictability. For word processing software, the preprogrammed rules circumscribe the universe of possibilities.

Deterministic technologies simply do not produce the same legal-ethical concerns as the kinds of technologies that power ChatGPT. This is largely because failure is easy to identify in deterministic systems.[38] Because

37. This concept is used in a number of technical works. For a discussion of systems design, see Thomas A. Henzinger, *Two Challenges in Embedded Systems Design: Predictability and Robustness*, 366 PHIL. TRANSACTIONS ROYAL SOC'Y A 3727, 3729 (2008) ("One approach to the building of predictable systems is to build them entirely from deterministic parts. This would require one to use: only processors for which the execution time of each instruction is predictable, in particular, independent of cache and memory accesses; communication channels for which the delivery time of each message is predictable; etc."). For a discussion of algorithms, see Gilles Dowek, *The Physical Church–Turing Thesis and Non-deterministic Computation over the Real Numbers*, 370 PHIL. TRANSACTIONS ROYAL SOC'Y A 3349, 3350 (2012) ("A deterministic algorithm, which takes an element of a set $A$ as an argument and returns an element of a set $B$ if it terminates, defines a partial function from $A$ to $B$. A non-deterministic algorithm, in contrast, defines a relation between the sets $A$ and $B$ and it is therefore natural to try to characterize the relations that correspond to these algorithms. A relation $R$ between two sets $A$ and $B$ can always be seen as a function from $A$ to the power set of $B$: the function that maps the element $x$ to the set $R_x = \{y \in B | x\, R\, y\}$. This leads to raising, in a first step, the question of the representation of sets with computable functions."). The notion of deterministic and nondeterministic technology is also richly considered in some domain-specific literature, such as aviation and aeronautics. *See, e.g.*, NAT'L AERONAUTICS & SPACE ADMIN., NONDETERMINISTIC APPROACHES AND THEIR POTENTIAL FOR FUTURE AEROSPACE SYSTEMS (2001), https://ntrs.nasa.gov/api/citations/20010110412/downloads/20010110412.pdf [https://perma.cc/3BDY-KCFP]; Alfonso Noriega, Safety Assurance of Non-deterministic Flight Controllers in Aircraft Applications (Nov. 31, 2016) (Ph.D. dissertation, Embry-Riddle Aeronautical University), https://commons.erau.edu/cgi/viewcontent.cgi?article=1287&context=edt [https://perma.cc/23WE-BVV4].

38. Compare this with nondeterministic systems, which require considerably more from failure testing. *See, e.g.*, Donald Firesmith, *The Challenges of Testing in a Non-deterministic World*, CARNEGIE MELLON U. SOFTWARE ENG'G INST. BLOG (Jan. 9, 2017), https://insights.sei.cmu.edu/blog/the-challenges-of-testing-in-a-non-deterministic-world/# [https://perma.cc/SCW4-7CLX] ("With non-deterministic systems and software, you can run the exact same test case (i.e., with the exact same test inputs under the exact same test preconditions) multiple times and get different results (i.e., different test outputs and test postconditions). Running a single test case only once is insufficient to determine whether the test case truly passes or fails.").

outputs are predictable and repeatable, deviations are highly visible. Moreover, users are generally intolerant of failure in deterministic systems because of the relationship between inputs and outputs: because the universe of outcomes are logically bounded by the instructions, users are generally aware of the outcomes that they are looking for by simple virtue of submitting instructions. As a clarifying example, consider the analogy between the word processor and the doorknob once more. If a tap of the spacebar does not move the cursor as intended, it fails, just as a doorknob fails if it does not disengage the latching mechanism when turned. The high visibility of error in deterministic technologies means easier testing, debugging, diagnostics, and ultimately improvements.

A few caveats. First, it is important not to confuse deterministic technologies with simple or unsophisticated technologies. There is deterministic AI, too. Autonomous driving systems, for instance, can be deterministic if road conditions and signs are fully observable.[39] Any trust in these systems actually depends on this fact; if braking is not a reliable output in response to a stop sign, a red light, or a distracted pedestrian, then the autonomous driving system is ineffective. Similarly, algorithms involved in automated decision-making can ingest voluminous data but can nevertheless be "carefully crafted with detailed instructions at every step to solve narrow well-defined problems."[40] Nor does the fact of a system being deterministic mean invulnerability to other potential performance encumbrances. For instance, a spacebar can be less responsive if a computer system is overloaded or if there is dust and debris cluttering under the key and interrupting the signal, just as the efficacy of a doorknob is affected by weather or disrepair. But the causes of these are largely familiar. Environmental variables, hardware issues, human error, security issues, or poor design are all possible, but they are largely the kinds of challenges that users of technology would face outside of the context of AI. This means that deterministic technologies tend not to put strain on existing monitoring systems. Put differently, trying to identify problems does not require any new capabilities beyond ordinary competence or diligence.

Deterministic technologies can be contrasted with probabilistic technologies. The outputs of probabilistic technology can vary even with the same input, offering a range of possible outcomes based on inferences and patterns. This makes probabilistic systems highly adaptable and capable of handling complex, uncertain scenarios.[41] The cost is that these probabilistic

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39. *See* Sofia Sanchez-Mateo, Alfredo Valle-Barrio, Alberto Díaz-Álvarez & Felipe Jiménez, *Assessing a Deterministic Model for Autonomous Driving Through Visual Behavior*, *in* PROCEEDINGS. OF THE XV IBERO-AMERICAN CONGRESS OF MECHANICAL ENGINEERING 154, 158 (Antonio Vizán Idoipe & Juan Carlos García Prada eds., 2022).

40. Andrew Tutt, *An FDA for Algorithms*, 69 ADMIN. L. REV. 83, 85 (2017).

41. *See, e.g.*, Dennis V. Lindley, *The Probability Approach to the Treatment of Uncertainty in Artificial Intelligence and Expert Systems*, 2 STAT. SCI. 17, 19–20 (1987) ("On the basis of simple, intuitive rules (or using a technique of scoring statements of uncertainty), it follows that probability is the only way of handling uncertainty. In particular other ways are unsound and essentially ad hoc in that they lack an axiomatic basis. There is however

approaches also introduce an element of unpredictability and less precise control compared to deterministic systems. The imprecision of probabilistic systems has much to do with the nature of the data that they ingest. However, even more importantly, the task that the generative AI tool is being asked to perform is itself variable.[42] Instead, the lawyer relies on the system to make "choices" as to structure, turns of phrase, included information, word choice, and several other components that will determine the quality of the final product. Indeed, had the lawyer had an exact picture of their desired brief, they would have drafted it themselves. Unlike deterministic systems, in which failure and success exist in effectively binary states, failure in probabilistic systems can occur in myriad ways. Consider two broad categories of failure. First, the generative AI tool can fall short of the lawyer's threshold by producing a poorly drafted brief that has analytical weaknesses and clunky prose. Second, the generative AI tool can fail by hallucinating or altogether proposing incorrect or nonsensical information. These failures are distinct but considerably harder to identify than the kinds of failures that surface in deterministic technologies.

## II. ERROR TOLERANCE, RISK ASYMMETRY, AND THE ETHICAL DIVISION OF LABOR

### *A. Increasing Error Tolerance*

The advantages of the reconceiving of legal technologies as either deterministic or probabilistic are threefold. First, the deterministic/probabilistic framework resolves the problems of over- and underinclusivity that plague the comprehensive definition and functional category approaches. To reiterate, comprehensive definitions present an inclusivity paradox: they are often overbroad to capture as many AI technologies as possible, but also insufficiently specific to meaningfully regulate problematic activity. Relatedly, functional category approaches often err on the side of specificity, such that rulemakers are forced into the difficult task of having to anticipate future technological developments. In either case, costs are high: in the comprehensive definition approach, the ex post adjudication and uncertainty costs are high, and, in the functional category approach, the ex ante research and design costs are high.[43] The

more than just the inevitability of probability. There is the consideration that probability is totally adequate for all uncertain situations encountered so far.").

42. Léonard Boussioux, Jacqueline N. Lane, Miaomiao Zhang, Vladimir Jacimovic & Karim R. Lakhani, *The Crowdless Future?: How Generative AI Is Shaping the Future of Human Crowdsourcing* 22 (Harvard Bus. Sch. Working Paper No. 24-005, 2023) ("Our analysis of semantic dissimilarity scores . . . reveals interesting patterns. Human outputs display greater variability than AI-generated counterparts, but substantial overlap exists in the between-source human and AI semantic dissimilarity scores. The overlap indicates that under certain conditions, AI-generated outputs can exhibit variability comparable to human-generated content. This suggests that AI outputs can sometimes statistically mirror the unpredictability we associate with human thought and ingenuity.").

43. This argument will be familiar to readers of the law and economics literature as a version of the debate about rules and standards. Few articles in the legal ethics literature really

deterministic/probabilistic framework resolves this by dispensing with definitions altogether. One immediate benefit of this approach is that it does not treat AI separately for novelty's sake; instead, AI tools with capacity for legal-ethical harms are grouped with other technologies that have the same capacity for legal-ethical harm. A second and related advantage of the deterministic/probabilistic framework is that it comports with legal ethics' orientation toward sanctioning harms imposed by lawyers, as opposed to monitoring how lawyers execute their duties. The administrative practicability of this approach is worth emphasizing here, too. Legal ethics regimes are not well-equipped to exercise strong supervision or enforcement,[44] and few engage in substantial investigation absent a complaint from a stakeholder. Thus, categorizations of technology that focus on their propensity for harm reduce overall costs.

Third and most importantly, the deterministic/probabilistic binary enables lawyers to engage with technology in a manner that is familiar to them. Indeed, ethical approaches to deterministic technologies require little in the way of new interventions for the legal profession because, even if these technologies involve more sophistication, the nature of the harms that they produce and the sorts of errors/failures that result are not new or distinct. Put differently, deterministic technologies tend to fail in ways that are more recognizable and can often be diagnosed with existing tools. By contrast, the type of malfunctions experienced by probabilistic technologies are not akin to those of mechanical or similar analog systems. This means that unique monitoring systems would be necessary to detect failures in probabilistic technologies. Essentially, the challenges presented by deterministic technologies are not inherently related to their technological nature. By contrast, the issues arising from probabilistic technologies are specific to their unique characteristics.

With this considered, how should the legal profession operationalize this understanding? Using probabilistic tools necessarily means that lawyers must increase their error tolerance. As an initial matter, probabilistic tools will tend to produce more errors due to their inherent ambition. The environments in which probabilistic tools tend to be deployed are often both rich in data and uncertainty, and the tasks that probabilistic tools are

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consider the rules versus standards debate, with a couple of notable exceptions. Mary C. Daly explored this debate in the context of legal ethics as they relate to the proliferation of international practice. *See generally* Mary C. Daly, *The Dichotomy Between Standards and Rules: A New Way of Understanding the Differences in Perceptions of Lawyer Codes of Conduct by U.S. and Foreign Lawyers*, 32 VAND. J. TRANSNAT'L L. 1117, 1118 (1999) (arguing that the distinction between rules and standards accounted for the difference in how U.S. and foreign lawyers viewed professional responsibility codes); *see also* Fred C. Zacharias, *Specificity in Professional Responsibility Codes: Theory, Practice, and the Paradigm of Prosecutorial Ethics*, 69 NOTRE DAME L. REV. 223, 240–44 (1999) (rejecting, as I do here, that rules versus standards are the proper way to frame legal ethics rules).

44. *See* David Luban, *Calming the Hearse Horse: A Philosophical Research Program for Legal Ethics*, 40 MD. L. REV. 451, 452 (1981) ("Enforcement is generally reserved for the most egregious violations, and consequently the body of case law in professional responsibility is small and the litigation is not very complex.").

compelled to perform are those that involve higher-order skills like judgment, analysis, or synthesis. Of course, users can misapprehend the benefits of these more sophisticated tools and use probabilistic technology for a simple computational task; in fact, the lawyers in the "fake citations case" appeared to do precisely this by using a large language model to perform case law research when a simple search of a case law database (for example, a deterministic technology) would likely suffice. For the most part, however, sophisticated techniques such as use cases for nondeterministic technologies implicate more core lawyer duties than mere information retrieval. The ambitious objectives coupled with the background uncertainty and noisiness of the environment make some error inevitable.

Here, it is important to distinguish between what I call "processual errors" and "ultimate errors." Processual errors are those that occur in the completion of a task but not in the exercise of a duty. Lawyers can and should be able to tolerate processual errors made by probabilistic technologies—within reason—so long as these do not translate to ultimate errors. An example of a processual error is an AI tool incorrectly drafting a contract provision to confer the wrong set of rights and obligations on a party. By contrast, an example of an ultimate error is the lawyer passing the incorrect contractual language on to a client. The processual error does not implicate a lawyer's legal-ethical commitments any more than an incorrect legal analysis in an early draft of a contract. But absent lawyer intervention—and, specifically, legal-ethical practice—processual errors can become ultimate errors. For illustrative purposes, return once more to the "fake citations case." Recall that the lawyers in the case used ChatGPT, a technology that falls on the probabilistic side of the divide in that its outputs are not the function of a perfectly contemplatable, preexisting relationship with inputs. The ethical violation occurred when the lawyers failed to correct the processual error. The American Bar Association's Model Rules of Professional Conduct (the "Model Rules"), on which most state bar rules are based, are instructive here. The Model Rules are means-agnostic; lawyerly violations tend not to be those that concern the "how" of day-to-day legal tasks.

### *B. Toward an Ethical Division of Labor*

Considering the fact that probabilistic technologies are more error-prone, lawyers can safeguard themselves against risks by distinguishing between errors as either processual or ultimate, recognizing that processual errors do not automatically implicate lawyers' ethical duties. A distinct advantage of this framework is that it enables lawyers to import a familiar practice template. Here, lawyers should consider treating deterministic technologies similarly to standard technologies by conceptualizing them as assistive tools with discrete functions. Deterministic technologies—akin to traditional, mechanical tools[45]—tend to operate within more consistent and stable

45. *See supra* Part I.C.

parameters. Ethical practice in this context means understanding specific functions and limitations of technologies, ensuring that the technologies are generally used correctly within their appropriate boundaries.

Deterministic technologies might be less inherently suspect than probabilistic technologies but are better candidates for technology-specific professional responsibility rules than probabilistic technologies. Deterministic outcomes are ascertainable, and therefore so too are their risks.[46] This means outcomes (read: harms) can be anticipated and constrained. For instance, professional regulators could require that lawyers regularly ensure that their technologies are performing accurately and require that lawyers maintain ongoing knowledge of the technology's limitations. In much the same way as lawyers must "keep abreast of changes in the law and its practice,"[47] they would here need to keep abreast of the particular technologies that they purport to use. Regulators may consider "maintenance hours"; for instance, just as licensed attorneys are required to engage in some continuing professional education,[48] state bar regulators may wish to require and credit lawyers with time spent auditing their own technologies. By contrast, the distinction between deterministic and probabilistic technologies counsels in favor of conceiving of the latter much as lawyers would conceive of their professional relationship to other humans.[49] The traditional frameworks for accommodating technologies as assistive tools are insufficient for probabilistic technologies, largely because the input-output relationships of such tools will produce error or, at the minimum, varied outcomes. Moreover, failure and success do not exist in binary states; rather than fail to draft a brief to your specifications, a large language model might produce a brief that is poor, workmanlike, serviceable, excellent, or a state in between.

To illustrate this point, imagine a senior lawyer who instructs a junior lawyer to produce a research memorandum on standards of review. The senior lawyer deputizes the junior lawyer because the senior lawyer either has limited time to pursue the research or because, in the organization's division of labor, it is understood that research tasks of this nature are more appropriate for junior colleagues. In any case, the junior lawyer's task will involve conducting research and presenting their analysis in some written work product. Assuming that the senior lawyer does not have perfect recall

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46. Jonathan Tan Ming En, *Non-deterministic Artificial Intelligence Systems and the Future of the Law on Unilateral Mistakes in Singapore*, 34 SING. ACAD. L.J. 91, 93 (2021); *see also* JACOB TURNER, ROBOT RULES: REGULATING ARTIFICIAL INTELLIGENCE 18 (2019).

47. *See* MODEL RULES OF PRO. CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2020).

48. *See, e.g.*, *Continuing Legal Education: FAQs for Experienced Attorneys*, NYCOURTS, https://ww2.nycourts.gov/attorneys/cle/attorney_faqs.shtml [https://perma.cc/GWF3-RMKR] (last visited Mar. 3, 2024); *Minimum Continuing Legal Education*, STATE BAR CALIF., https://www.calbar.ca.gov/Attorneys/MCLE-CLE [https://perma.cc/9JBP-LLY8] (last visited Mar. 3, 2024); *Continuing Legal Education*, SUP. CT. OHIO & OHIO JUD. SYS., https://www.supremecourt.ohio.gov/attorneys/cle/ [https://perma.cc/R6WG-VN52] (last visited Mar. 3, 2024).

49. *See* Boussioux et al., *supra* note 42, at 22 (finding that "AI outputs can sometimes statistically mirror the unpredictability we associate with human thought and ingenuity").

memory of all the cases involving standards of review, the junior lawyer will likely marshal some information that the senior lawyer is either unaware of or has not considered in the instant context. This information asymmetry means that the senior lawyer is effectively precluded from evaluating the quality of the junior lawyer's inferences unless they too spent the time considering the source material. This may be unlikely given resource constraints, but it might well be *impossible* in the context of probabilistic AI tools, which may synthesize inaccessibly large volumes of data. In the human-human context, the senior lawyer relies on certain relationship proxies. For instance, the senior lawyer expects the junior to be capable based on their working relationship. Or, if it is the first time that they are working together, the senior lawyer might trust that their firm's hiring mechanisms promise that junior lawyers are generally skilled. Or the senior lawyer generally trusts that any mistakes by the junior lawyer will be caught via the firm's organizational checks and balances. In all cases, the risk of variable outcomes is accepted; the senior lawyer can accommodate a range of output quality. Moreover, the complex and involved nature of the task means that the senior lawyer does not have a specific, predetermined image of the output. It is also understood that the junior lawyer will make some choices about what information to ingest and what information to communicate, and they will, along the way, reconcile the information against their own training and experience.

In this framing, the Model Rules can remain instructive. Much as the lawyers in the "fake citations case" were admonished for transmitting hallucinated cases to the court (by converting their processual error into an ultimate—and therefore sanctionable—one), the senior lawyer who transmits faulty, poorly researched analysis from their junior to their client or a tribunal is similarly at risk of a legal-ethical violation. This is true for at least two reasons. First, the Model Rules contemplate individual rather than collective or diffuse responsibility; save for some rules that contemplate firms, lawyers are generally considered in their individual capacity. Indeed, even the categories of rules that discuss firms are formulated as commands for individual lawyers, who are the exclusive subjects of legal-regulatory discipline. Second, Rule 5.1(c) of the Model Rules imputes responsibility for the legal-ethical violations of subordinates to supervisors if:

> (1) the lawyer orders or, with knowledge of the specific conduct, ratifies the conduct involved; or (2) the lawyer is a partner or has comparable managerial authority in the law firm in which the other lawyer practices, or has direct supervisory authority over the other lawyer, and knows of the conduct at a time when its consequences can be avoided or mitigated but fails to take reasonable remedial action.[50]

Another way to think about this is that this Model Rule places lawyers at the end of legal information's chain of transmission. In organizational settings, this suggests that a best practice for supervised work is that the

50. MODEL RULES OF PRO. CONDUCT r. 5.1(c) (AM. BAR. ASS'N 2020).

senior lawyer double-check or do precisely what the lawyers in the "fake citations case" failed to. Indeed, the very interventions that would prevent a lawyer from being forced into a legal-ethical violation by a subordinate would prevent the lawyer from being forced into a legal-ethical violation by a probabilistic technology. Just as the senior lawyer prevents the junior lawyer's processual error from metastasizing into an ultimate error (and perhaps thereafter scandal), the lawyer makes the same intervention vis-à-vis probabilistic technologies such as generative AI.

## CONCLUSION

The application of AI to the law poses no shortage of ethical challenges, particularly in moments—like now—when technological innovation appears to be outpacing the profession's ability to contend with its increasing sophistication. Central to harnessing AI's upside in legal practice is a reimagining of the relationship to its tools. Here, I argue that rather than conceive of traditional technologies and AI-enabled technologies as the salient categories, the legal profession ought to recognize that it is the distinction between deterministic and probabilistic tools that helps lawyers understand how to best discharge their professional obligations. Deterministic technologies (those that produce largely predictable outputs) are generally easier to ethically accommodate in legal practice. Probabilistic technologies have a greater capacity for legal-ethical harm due to their inherent unpredictability. Further, in aspiring to higher-order "thinking" tasks, these technologies will tend to produce more error, perhaps even in the manner that human professionals do. Understanding that these latter technologies pose distinct legal-ethical risks, lawyers must increase their error tolerance but, in doing so, further distinguish between unproblematic processual errors and ethically suspect ultimate errors.