

# LAW AND TECHNOLOGICAL INNOVATIONS: THREE REASONS TO PAUSE

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*Faced with optimistic accounts of technological innovations, businesses, law firms, and governments face pressure to rush into adopting these technologies and enjoying the increased efficiency, reduced costs, and other benefits that are promised. This Article sets forth reasons to pause before adopting such technologies. First, new technology is often contrasted with unrealistically dire portrayals of the status quo, which leads to exaggerated accounts of how beneficial the new technology will be. Second, overconfidence in technological fixes, as well as tendencies against revisiting and critiquing traditional ways of doing things, may lead to an entrenchment of harmful systems. Third, the institutional incentives and pressures in which technology is employed may affect how that technology is used—leading to unanticipated consequences for those who only consider how technology functions in non-legal settings.*

*While I urge reasons to pause, I do not counsel wholesale rejection of technological innovation. Those considering adopting new technologies should, at the outset, demand transparency from those who manufacture and market technology, particularly the avoidance of imprecise terminology. Developing policies in advance to review and audit new technology may also ensure that those adopting it get what they pay for and may help mitigate unanticipated harmful consequences. Finally, contracts with those offering new technology should have frequent renewal opportunities built in to allow those adopting the technology to demand action or back out of adopting the technology should promised benefits never materialize.*

## INTRODUCTION

Technological innovations tend to generate strong reactions in the legal space. Proponents of new technologies often make an aggressive case for adoption, while opponents point to doomsday scenarios. All the while, profit-motivated firms and businesses and government agencies interested in increased efficiency and reduced costs remain on the lookout for developments they think may give them an edge—whether it is against competitors, crime, or other obstacles.<sup>1</sup> This creates a tendency toward hasty adoption of technology, in which the nature of the technology itself is

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1. See Paige Roncke, *How Technology Changes the Game for Law Firm Profitability*, CENTERBASE (Nov. 10, 2024), <https://centerbase.com/blog/how-technology-changes-the-game-for-law-firm-profitability/> [https://perma.cc/DR32-D49L].

often vague and imprecise and the impacts of the technology's use are uncertain or, in some cases, potentially "catastrophic."<sup>2</sup>

In response to pressures to adopt new technology quickly, I offer three reasons to pause. Stepping back and accounting for potential pitfalls allows decision-makers to contemplate whether a technology is worth it, and, if so, how to realize the benefits of new technology while minimizing the risk of harms resulting from misuse and abuse. While reasons to pause are not necessarily reasons to reject technology, more careful consideration may lead to a more selective approach to deciding what to use and what to refuse. Additionally, taking time to pause and consider how new technology is adopted may lead to more effective use through increased transparency and ongoing auditing practices.

Section I addresses the danger of exaggerated value-added claims. Supporters of new technologies critique naysayers for demanding that the technology be held to unrealistic, near-perfect standards, rather than evaluating the comparative advantage of new technology in contrast to the human-centric status quo.<sup>3</sup> But this problem cuts in the opposite direction as well. Specifically, overly rudimentary portrayals of the status quo may inflate the purported benefits of new technology.<sup>4</sup> Discourse over the use of generative AI in legal contexts exemplifies this tendency, as those who espouse the use of tools like ChatGPT frequently compare the technology to unrealistic visions of attorneys writing motions up from scratch and wandering the library stacks to find case law.<sup>5</sup> Taking a moment and reflecting on actual practices brings a more measured, realistic approach to adopting new technologies and considering the costs and benefits of such adoptions.

Section II discusses unwarranted confidence and inertia that may accompany the adoption of new technology. While technology may prove advantageous over human-centric approaches to problems or processes,

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2. See Roland L. Trope & Sarah Jane Hughes, *Red Skies in the Morning—Professional Ethics at the Dawn of Cloud Computing*, 38 WM. MITCHELL L. REV. 111, 287–88 (describing how the “rush to adopt and adapt” new technologies has resulted in “a prolific use of vague terms that obscure from counsel and their clients the precise nature and risks of such technologies”); see also Danielle Keats Citron, *Fulfilling Government 2.0’s Promise With Robust Privacy Protections*, 78 GEO. WASH. L. REV. 822, 829 (2010) (highlighting warnings of the dangers of rushing to adopt new technologies).

3. See ORLY LOBEL, *THE EQUALITY MACHINE: HARNESSING DIGITAL TECHNOLOGY FOR A BRIGHTER, MORE INCLUSIVE FUTURE* 5 (2022).

4. See, e.g., ThingsICantFindOtherwise, *The Juice Loosener (The Simpsons)*, YouTube (Oct. 11, 2015), <https://www.youtube.com/watch?v=viejY6UZ5Bk> [<https://perma.cc/Y74B-87DQ>], ([Troy McClure, smashing an orange against his head as the juice drains into a cup] “Until now, this was the only way to get juice form an orange.” [Homer Simpson, watching McClure’s infomercial at home while also smashing an orange against his head]: “You mean there’s a better way?!”).

5. See generally Michael L. Smith, *Language Models, Plagiarism, and Legal Writing*, 22 U.N.H. L. REV. 361 (2024) (contrasting accounts of attorneys writing documents from scratch with realistic portrayals of attorneys working from templates and adapting prior work product).

there is a danger that fixating on these advantages may foreclose meaningful scrutiny of the technology once it's in place. This danger may be compounded when the technology is adopted in high-volume contexts, which happen to characterize a great deal of the criminal legal system.<sup>6</sup> Continuing certain practices simply because "this is how things have been done," creates institutional inertia that forecloses reevaluation of whether new technology is beneficial. Using risk assessment tools in criminal proceedings, I illustrate this tendency toward inaction and its negative consequences.

Section III discusses institutional pressure to err as a third reason to pause when adopting new technologies. Innovative technologies may appear promising when employed in one context or profession. This promise, however, may vanish when the technology is introduced in other contexts and subjected to the pressures and incentives facing those who operate in these fields. To illustrate, I discuss the use of corpus linguistics, in which those seeking to determine the meaning of terms or phrases engage in computer-aided searches of vast databases of written materials to identify patterns of usage.<sup>7</sup> While corpus linguistics may be useful for those in academia, its adoption by those in legal practice involves inherent perils. Attorneys and judges tend to lack training in linguistics or statistical analysis, resulting in a tendency to misuse corpus linguistics and failures to properly explain their methodology.<sup>8</sup> Attorneys are likely to approach corpus linguistics as advocates—taking advantage of the hundreds of discretionary steps involved in the analysis to benefit their clients.<sup>9</sup> Institutional incentives and pressures like those faced by judges and attorneys must be taken into account when considering the impact new technology will have, and forecasts based on the technology's use in non-legal contexts tend to be incomplete and potentially misleading.

While these reasons to pause are important, they will not necessarily require the rejection of new technology. Innovation can be beneficial—but it must be contemplated with clear eyes and adopted in a manner that makes room for unanticipated consequences. To that end, Section IV advances some suggestions to firms, governments, and others

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6. See, e.g., ALEXANDRA NATAPOFF, *PUNISHMENT WITHOUT CRIME: HOW OUR MASSIVE MISDEMEANOR SYSTEM TRAPS THE INNOCENT AND MAKES AMERICA MORE UNEQUAL* 2–3, 78–83 (2018) (describing the massive scope of misdemeanor enforcement and prosecution and the comparative lack of scrutiny of such cases).

7. See generally Neal Goldfarb, *The Use of Corpus Linguistics in Legal Interpretation*, 7 ANN. REV. LINGUISTICS 473 (2021) (describing the use of corpus linguistics in legal contexts).

8. See generally Stefan Th. Gries, *Corpus Linguistics and the Law: Extending the Field from a Statistical Perspective*, 86 BROOK. L. REV. 321 (2021) (highlighting the shortcomings of untrained attorneys and judges using corpus linguistics in the legal field).

9. See Daniel C. Tankersley, *Beyond the Dictionary: Why Sua Sponte Judicial Use of Corpus Linguistics Is Not Appropriate for Statutory Interpretation*, 87 MISS. L.J. 641, 648 (2018) (arguing that corpus linguistics involves "literally hundreds of levels of discretion").

considering adopting new technology. These suggestions include demanding transparency of those developing and marketing technology and avoiding imprecise buzzwords such as “artificial intelligence.” Additionally, those who contract with private firms that develop and administer high-tech systems should develop policies for ongoing review and auditing of these systems in advance of adopting the technology. Doing so can ensure that those adopting the technology get what they pay for and avoid falling into patterns of complacency.

## I. EXAGGERATED VALUE-ADDED CLAIMS

When considering whether to adopt new technology—especially technology developed by businesses and individuals who stand to gain from the use and sale from this technology—one must be on the lookout for exaggerated claims about the value the technology adds. The first reason to pause is the tendency toward exaggerated value-added claims that paint an unrealistically dire picture of present circumstances and practices which, in turn, makes technological advancement seem all the more beneficial. To illustrate this phenomenon, I turn to discourse regarding generative AI.

### A. Illustration: Generative AI

Recent years have seen the introduction of large language model powered chatbots, referred to as large language models, generative AI, or by brand names like ChatGPT. I describe these developments as “generative AI,” as it captures variations of the technology that I hope to discuss. Modern generative AI finds its origins in software designed to produce outputs based on a range of queries input by the user.<sup>10</sup> Examples of the theory underlying modern generative AI—including predictive models and theorizing about human-machine communication—date back centuries.<sup>11</sup>

Modern generative AI manifests in chatbots created by companies, such as OpenAI’s ChatGPT.<sup>12</sup> The technology is “trained” using extensive text to generate outputs in responses to queries—predicting the desired output using the patterns picked up from the extensive training materials

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10. See MD. AL-AMIN, MOHAMMAD SHAZED ALI, ABDUS SALAM, ARIF KHAN, ASHRAF ALI, AHSAN ULLAH, NUR ALAM, & SHAMSUL KABIR CHOWDHURY, HISTORY OF GENERATIVE ARTIFICIAL INTELLIGENCE (AI) CHATBOTS: PAST PRESENT, AND FUTURE DEVELOPMENT, 2 (2024), <https://arxiv.org/abs/2402.05122> [<https://perma.cc/RL2K-HCHZ>].

11. *Id.* at 2, 4, 6.

12. See Bernard Marr, *A Short History of ChatGPT: How We Got to Where We Are Today*, FORBES (May 19, 2023), <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/> [<https://perma.cc/TG6E-SW3X>].

reviewed.<sup>13</sup> This recognition of patterns without continuous input and revision by human programmers is known as machine learning, and it helps power generative AI toward its goal of “creat[ing] computer models that exhibit ‘intelligent behaviors’ like humans.”<sup>14</sup> Of particular relevance here are generative AI chatbots that “generate human-like responses to user prompts based on information they have ‘learned’ during a training process,” which can mimic answers to questions and generate documents according to user-requested specifications.<sup>15</sup>

Lawyers and law professors can’t get enough of generative AI. Some claim that generative AI will “reduc[e] human error, automat[e] repetitive tasks, improv[e] efficiency, increas[e] human safety, and enabl[e] faster decision-making.”<sup>16</sup> Others argue that generative AI can assist in tasks as diverse as legal research, client intake, jury selection, contract drafting, and beyond.<sup>17</sup> While some advocates of generative AI acknowledge that there may be dangers in relying on early iterations of the technology, they argue that this should not foreclose its gradual adoption by attorneys.<sup>18</sup>

Legal writing, in particular, is a focal point for promises of generative AI’s potential. Joe Regalia argues that generative AI is a powerful tool for legal writers, exploring in great detail the many ways the technology may assist in drafting legal documents and how users of the technology may use it more efficiently.<sup>19</sup> The effectiveness of the technology may increase as other actors, notably “legal databases LexisNexis and Westlaw,” announce similar technologies.<sup>20</sup> Others have made similar points—albeit in the law school essay context.<sup>21</sup>

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13. See George Lawton, *What is Generative AI? Everything You Need to Know*, ENTER. AI (Nov. 10, 2024), <https://www.techtarget.com/searchenterpriseai/definition/generative-AI> [<https://perma.cc/NF8Y-KWTZ>].

14. Sara Brown, *Machine Learning, Explained*, MIT MGMT.: SLOAN SCH. (Apr. 21, 2021), <https://mitsloan.mit.edu/ideas-made-to-matter/machine-learning-explained> [<https://perma.cc/FFB8-NK8B>].

15. See Nina Brown, *Bots Behaving Badly: A Products Liability Approach to Chatbot-Generated Defamation*, 3 J. FREE SPEECH L. 389, 390 (2023).

16. Carla L. Reyes, *Foreword: Artificially Intelligent Innovation and Justice*, 27 SMU SCI. & TECH. L. REV. 2, 5 (2024).

17. See Jessica Paluch-Hoerman, *Jumpstart Your AI Journey*, 60 TRIAL MAG. 22, 24–26 (2024).

18. See Jimmy Chestnut, Tarek Ghalayina, & Danielle Davidson, *Don’t Throw the Bot Out With the Bathwater: Embracing Generative AI in EDiscovery Work*, ACC DOCKET 1, 3–4 (2024).

19. See generally Joe Regalia, *From Briefs to Bytes: How Generative AI is Transforming Legal Writing and Practice*, 59 TULSA L. REV. 193 (2024). (explaining that generative AI may be used to refine sentences or summarize pages into a paragraph, along with other practical AI tools that save time and efficiency).

20. See Priya Baskaran, *Searching for Justice: Incorporating Critical Legal Research into Clinic Seminar*, 30 CLINICAL L. REV. 227, 282–83 n.264 (2024).

21. See Jonathan H. Choi, Kristin E. Hickman, Amy B. Monahan, & Daniel Schwarcz, *ChatGPT Goes to Law School*, 71 J. LEGAL EDUC. 387, 398–400 (2022).

Claims about generative AI's benefits run into trouble, however, when they fail to account for the status quo of legal practice. When generative AI, or any new technology, is under consideration, one must account for how much comparative value such technology provides in light of existing practices. The next section expands on this concept and demonstrates how some claims regarding generative AI illustrate a failure to sufficiently consider the status quo.

### **B. Reason to Pause: Exaggerated Value-Added Claims**

When evaluating how effective a new technology will be for attorneys, the question is not one of absolute efficiency but comparative efficiency that accounts for how attorneys already do things. Advocates for the adoption of new technology make similar comparative points when responding to criticism of technological developments.<sup>22</sup> Writing on the use of digital technology, Orly Lobel argues:

[W]e don't need to find it perfect. We only need to be convinced of its potential and ability to do better than our current systems. Human decision-making is inherently limited, flawed, and biased. We should strive to grasp AI's comparative advantages as well as its comparative limits. . . . The inquiry should be comparative and relative, not absolute. The goal should be progress, not perfection.<sup>23</sup>

Similarly, Henry Perritt argues that, should generative AI be regulated, regulatory proposals "should be disentangled from hostility to new technologies generally, from criticisms of big social networks, and from longer-standing proposals to regulate robots" and that regulation "should be risk-based, narrowly focused on particular probabilities of harm to legally recognized interests, and positioned in the mainstream of government regulation so that constitutional mechanisms of accountability through judicial review are available."<sup>24</sup>

But this same tendency to ignore comparative advantages works in the opposite direction as well. Considering technology in isolation may create an appearance of efficiency or benefit that is artificially inflated. Once the technology is considered in a comparative light against existing practices, the value it adds may diminish drastically.

Discussion of generative AI often involves this failure to truly account for the status quo. One purported benefit of generative AI is its

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22. See generally LOBEL, *supra* note 3. (encouraging the use of new technology to make future processes and systems better than they are today even if not perfect substitutes).

23. See *id.* at 5.

24. Henry H. Perritt, Jr., *Robot Regulations*, 75 S.C. L. REV. 219, 222 (2023).

efficiency.<sup>25</sup> Generative AI promises to improve on existing drafting practices—helping attorneys become “much more efficient” at “generat[ing] the documents associated with filing a claim.”<sup>26</sup> Attorneys can use generative AI to prepare initial drafts of memos or other documents that can then be revised “as needed.”<sup>27</sup> By preparing initial drafts of documents, generative AI “can significantly reduce the time spent on initial drafting, allowing legal professionals to focus on refining and polishing their work.”<sup>28</sup> AI can assist in legal research by “sift[ing] through vast amounts of legal data, including case law, statutes, regulations, and legal opinions, in a fraction of time it would take a human researcher.”<sup>29</sup>

The problem with these claims is that they portray generative AI as an improvement over existing methods. But the existing methods aren’t discussed or specified. Instead, this task is left to the reader. If one thinks of an attorney as normally conducting research by walking through the stacks of a library and poring over the dusty pages of old reporters, one will certainly find generative AI’s ability to “curate and present a vast array of sources like articles and research papers” to be an improvement.<sup>30</sup> If one thinks that attorneys typically draft motions from scratch, it follows that technology that can produce a near-instantaneous initial draft would improve attorney efficiency.<sup>31</sup>

But this isn’t how attorneys do things. Attorneys typically don’t page through indexes and physical reporters to locate authorities—they rely upon search engines like Westlaw and LexisNexis to locate these authorities and related sources. Attorneys don’t draft documents from scratch—they plagiarize, often relying on templates, others’ work, or their own prior motions and contracts that have proven to be effective in prior cases.<sup>32</sup>

Once one takes a more realistic approach to the work of lawyers, the value that generative AI adds becomes less apparent. Consider

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25. *Artificial Intelligence in Law and Legal Practice*, BL, (Nov. 10, 2024), <https://pro.bloomberglaw.com/insights/technology/ai-in-legal-practice-explained/#what-is-artificial-intelligence> [<https://perma.cc/U6AY-SPU4>].

26. John Villasenor, *Generative Artificial Intelligence and the Practice of Law: Impact, Opportunities, and Risks*, 25 MINN. J.L. SCI. & TECH. 25, 37 (2024).

27. See Choi et al., *supra* note 21, at 397.

28. Regalia, *supra* note 19, at 213.

29. Samuel D. Hodge, Jr., *Revolutionizing Justice: Unleashing the Power of Artificial Intelligence*, 26 SMU SCI. & TECH. L. REV. 217, 227 (2023).

30. Regalia, *supra* note 19, at 210–11.

31. See Daniel E. Pinnington & Reid F. Tratuz, *Future Proofing: Using ChatGPT for Research and Writing*, 49 L. PRAC. MAG. (FIN. ISSUE) 38, 42 (2023) (“While ChatGPT won’t be replacing you soon, it presents an incredible opportunity for attorneys to enhance and redefine where they add value and can be more efficient at some tasks, and in particular the first draft of documents.”).

32. See generally Brian L. Frye & Megan E. Boyd, *Plagiarism Pedagogy: Why Teaching Plagiarism Should Be a Fundamental Part of Legal Education*, 99 WASH. U. L. REV. ONLINE 1 (2021) (explaining why plagiarism is not only accepted legal practice but should be encouraged).

generative AI's promise of preparing initial drafts of motions. While this certainly seems preferable to drafting a motion from scratch, it is unclear if this technology is any better than using a similar motion from a previous case or a preexisting template to prepare the present motion.<sup>33</sup> Indeed, once one considers how generative AI may produce false or "hallucinated" citations, an attorney may be more comfortable using his or her own prior work (or the work of trusted colleagues) as a starting point than the potentially error-prone black box that is generative AI.<sup>34</sup>

The larger point is this: when considering whether to adopt or employ new technology in the legal context, one must weigh the value the technology adds to existing practices. Failure to consider the status quo leads to exaggerated claims of the benefits new technology provides. And failure to pause and consider the true value new technology adds may be a costly mistake. Westlaw and Lexis, for instance, are developing their own generative AI offerings, but these offerings aren't cheap.<sup>35</sup> Should they ultimately add little to what attorneys are already doing, firms and businesses may find themselves out a significant sum with little return on their investments.

## II. UNWARRANTED CONFIDENCE AND INERTIA

Technological innovations are often touted as improving on the failures of human-centric systems. Where people may be prone to prejudice, overreliance on heuristics, or insufficiently informed decisions, technological innovations may overcome—or perhaps even replace—these biased approaches. In response, critics argue that technologies often reflect the nature of their makers.<sup>36</sup> Algorithms designed to make complex tasks automated and efficient often tend to reflect the very biases they're supposed to overcome, as they often draw on data or past practices that reflect these biases.<sup>37</sup> Proponents of technological innovation respond that

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33. See generally Smith, *supra* note 5 (arguing that plagiarism, though often condemned by law schools, is a key technique of legal writers often ignored by those encouraging the adoption of AI language models).

34. See Jessica R. Gunder, *Rule 11 Is No Match for Generative AI*, 27 STAN. TECH. L. REV. 308, 313–14 (2024) (discussing generative AI's potential to generate false authorities and citations).

35. See Tom O'Brien, *The Cost of Lexis and Westlaw's AI*, LAW.COM (Nov. 16, 2023), <https://www.law.com/legaltechnews/2023/11/16/the-cost-of-lexis-and-westlaws-ai/?slreturn=20240720162948> [<https://perma.cc/C3UV-HBQ5>] (noting that "the costs to upgrade your current subscription to their AI functionality is very steep").

36. Roberto Torres, *How AI Learns the Biases of its Creators*, CIO.DIVE (Nov. 10, 2024), <https://www.ciodive.com/news/how-ai-learns-the-biases-of-its-creators/563089/> [<https://perma.cc/2QX7-A6SZ>].

37. SAFIYA UMOJA NOBLE, ALGORITHMS OF OPPRESSION: HOW SEARCH ENGINES REINFORCE RACISM 18–24 (2018) (describing how the output of online search algorithms tend to reflect the biases of users); VIRGINIA EUBANKS, AUTOMATING INEQUALITY: HOW HIGH-TECH TOOLS PROFILE, POLICE, AND PUNISH THE POOR 11–13 (2019) (summarizing the harms that increased automation entail for those with fewer resources).

even if technology is flawed, it may still be a substantial improvement on existing practices.<sup>38</sup>

Even if technological innovations are improvements on human-based systems, there is a risk that the technology itself will be less prone to critique or second-guessing than prior systems based on human determinations. Additionally, limitations on political will and funding, as well as legal and administrative barriers may present obstacles to adaptation or change even when flaws in adapted technologies are identified.<sup>39</sup> These risks must be taken into account and weighed when considering the long-term costs and benefits of adopting new technology.

### A. Illustration: Risk Assessment Algorithms

Risk assessment algorithms—which consider factors like “age, gender, criminal record, employment status, education level, etc.” and “identify correlations between future crime” and these factors—are popular in discussions of criminal justice reform.<sup>40</sup> Using sophisticated algorithms and machine learning on data regarding crimes, violations, and the characteristics of those involved, companies can generate risk assessment tools that identify particular features that are associated with heightened recidivism or, in the pretrial release context, risk of failure to appear in court.<sup>41</sup>

In the bail and pretrial release context, risk assessment algorithms are touted for their potential in the face of more traditional methods like bail schedules—which tend to assign set bail amounts to various crimes, leading to inflexible administration and overburdening those who have difficulty affording bail.<sup>42</sup> Risk assessments are often generated through algorithms that determine what factors to consider and evaluate whether these factors are tied to increased risks of failure to appear or danger to the public.<sup>43</sup> Rather than provide a single bail amount tied only to crimes, risk assessment tools can take more factors into account that can lead to a more nuanced picture of whether any given defendant might fail to appear for a future proceeding or pose a danger to the public.<sup>44</sup> Statistical tools can aid in making these predictions and may contemplate factors like “employment,

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38. See LOBEL, *supra* note 3, at 5.

39. Bill Whyman, *AI Regulation is Coming—What is the Likely Outcome?*, CSIS (Nov. 10, 2024), <https://www.csis.org/blogs/strategic-technologies-blog/ai-regulation-coming-what-likely-outcome> [https://perma.cc/KQ3M-FH3Q].

40. Megan Stevenson, *Assessing Risk Assessment in Action*, 103 MINN. L. REV. 303, 304–05 (2018).

41. See Kia Rahnema, *Science and the Ethics of Algorithms in the Courtroom*, 2019 U. ILL. J.L. TECH. & POL’Y 169, 173–75 (2019).

42. Richard F. Lowden, *Risk Assessment Algorithms: The Answer to an Inequitable Bail System?*, 19 N.C. J.L. & TECH. ONLINE ED. 221, 241–42 (2018).

43. See Brandon L. Garrett, *Models of Bail Reform*, 74 FLA. L. REV. 879, 908–10 (2022).

44. See *id.* at 905–08.

history of drug and alcohol abuse, and residency status,” along with other factors related to the present case and one’s history of prior convictions.<sup>45</sup>

In the sentencing context, risk assessments may be used to determine sentences for those convicted of crimes. Like risk assessment tools in the bail and pretrial release context, actuarial assessments are employed to generate “a static prediction of the likelihood that populations similarly situated to the defendant would engage in future behavior at the moment the assessment is administered.”<sup>46</sup> At least twenty states use “some form of risk assessment to inform sentencing.”<sup>47</sup> Because these risk assessment methods are an “impersonal, data-driven method to determine the recidivism risk,” supporters of the methods argue that they “are simultaneously increasing fairness in discretionary sentencing and reducing the overpopulation of prisons by diverting low-risk offenders from prison.”<sup>48</sup>

Risk assessment tools are not without their critics. The fact that the data used to power the algorithms employed to generate risk assessment tools tends to consist of inputs from “carceral knowledge sources” such as the police, prosecutors, and criminal courts, urges a tendency toward the status quo and assumptions that public safety is “promot[ed] through incarceration.”<sup>49</sup> Other problems may arise in attempting to generalize risk assessment factors over crimes of varying severity—raising concerns over whether risk factors adopted for felony cases can be applied in the misdemeanor context.<sup>50</sup> Other critics warn that the tools used to develop risk assessment tools are “not intended for use in sentencing” and are instead meant to help “effectively rehabilitate inmates during their incarceration—*after* a judge has announced a sentence.”<sup>51</sup> Conflation of the concept of “future dangerousness” with the commission of any future criminal activity, for example, may create inflated risk assessments that, in the sentencing context, might result in lengthier sentences that contribute to oppressive and expensive incarceration practices.<sup>52</sup>

While a deep dive into the validity and impacts of risk assessment tools is beyond the scope of this Article, these tools exemplify a broader problem of unwarranted confidence in innovations. This problem is

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45. See Wendy R. Calaway & Jennifer M. Kinsley, *Rethinking Bail Reform*, 52 U. RICH. L. REV. 795, 809 (2018).

46. Jessica M. Eaglin, *Population-Based Sentencing*, 106 CORNELL L. REV. 353, 364–65 (2021).

47. Rebecca Foxwell, *Risk Assessments and Gender for Smarter Sentencing*, 3 VA. J. CRIM. L. 435, 438 (2015).

48. Charlotte Hopkinson, *Using Daubert to Evaluate Evidence-Based Sentencing*, 103 CORNELL L. REV. 723, 725–26 (2018).

49. Ngozi Okidegbe, *Discredited Data*, 107 CORNELL L. REV. 2007, 2024–26 (2022).

50. See Shima Baradaran Baughman, *Dividing Bail Reform*, 105 IOWA L. REV. 947, 985–86 (2020).

51. Erin Collins, *Punishing Risk*, 107 GEO. L.J. 57, 61 (2018).

52. *Id.* at 92–93.

exacerbated in settings where actors tend to fall into routines, even if the routine is not based in—or is outright contrary to—governing law.

### **B. Reason to Pause: Unwarranted Confidence and Inertia**

In adopting new technology, agencies, municipalities, and firms might be overly optimistic about the benefits the technology will provide because of its advanced nature. There may be such a gulf between a rudimentary, human-centric approach and the processes that technology promises that those who employ the technology tend to become overly confident and over reliant on the technology. This is particularly risky in legal settings that tend to settle around traditional ways of doing things simply out of routine. A new technology that looks effective on its face, coupled with the inertia of tradition, may lead to stagnation and extensive harm over time.

Consider the case of *ODonnell v. Harris County*.<sup>53</sup> There, several people who had been incarcerated pending further criminal proceedings due to an inability to post bail sued Harris County for violation of their Eighth Amendment protections against the imposition of excessive bail requirements, as well as on Due Process and Equal Protection grounds.<sup>54</sup> Of relevance here is Harris County's use of a "risk-assessment tool" by the county's Pretrial Services department in evaluating "defendant[s'] risk of flight or risk of new criminal activity during pretrial release."<sup>55</sup> Pretrial Services would check for "seventeen different risk indicators," including "Criminal Risk Items," such as whether the "current charge involves a crime of violence," whether the defendant was on probation or parole, prior misdemeanor convictions, prior felony convictions, and whether there were multiple of either of these types of prior convictions.<sup>56</sup> The risk assessment tool also included "Background Risk Items," giving one additional risk point if a defendant:

- Was male;
- Lacked a high school diploma or GED;
- Did not own a land line phone;
- Lived with "someone other than a spouse or family";
- Lacked full-time employment; and
- Was under thirty years of age.<sup>57</sup>

One point would be given for each of these background items and added to whatever criminal risk factor points the defendant had accumulated.<sup>58</sup> Three points and lower meant a defendant was low risk, four

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53. *ODonnell v. Harris County*, 251 F. Supp. 3d 1052 (S.D. Tex. 2017).

54. *Id.* at 1060–64.

55. *Id.* at 1089.

56. *Id.*

57. *Id.*

58. *Id.* at 1089–90.

to five meant “low moderate risk,” while six to seven was “moderate risk.”<sup>59</sup> Scores higher than eight meant a defendant was designated as “high risk.”<sup>60</sup> As of the litigation in *ODonnell*, Harris County had proposed switching to “the Arnold Tool, a nationally validated risk assessment tool” that would replace the seventeen-point risk tool previously in place.<sup>61</sup> The Arnold Tool relied on “only nine indicators of risk,” almost all of which “relate to either past criminal history, past failure to appear, or the severity of the current charge,” other than “the defendant’s age at time of arrest.”<sup>62</sup> The Arnold Tool also “scales and weights the indicators,” providing three different scores associated with “risk of failure to appear, risk of new criminal activity, and risk of violence.”<sup>63</sup>

The *ODonnell* case exemplifies a tendency toward routine in low-level criminal proceedings—even if the routine involves making determinations to jail people based, in part, on whether they have roommates or a landline. The prosecution of misdemeanor offenses “is a highly technical, procedure-focused, and routine practice” involving high caseloads.<sup>64</sup> These routines, unfortunately, may involve the violation of constitutional rights, such as the right to counsel.<sup>65</sup> Routine violations often go unaddressed, as misdemeanor cases are rarely appealed.<sup>66</sup> All of this creates inertia—a tendency towards going through certain motions or procedures simply because that’s the way things have always been done. Indeed, in *ODonnell*, Harris County did not move toward adopting new risk assessment methods until litigation was underway.<sup>67</sup>

Implementing technologies into such a setting risks similar entrenchment in how that technology is used. Algorithmic risk assessment tools may be promising, so long as they are regularly reviewed and updated. But should they be used to develop a set of factors to be used across a wide number of cases, there is a chance that these tools may manifest

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59. *Id.* at 1090.

60. *Id.*

61. *Id.* at 1124.

62. *Id.*

63. *Id.*

64. Larry Cunningham, *The Use of “Boot Camps” and Orientation Periods in Externships and Clinics: Lessons Learned from a Criminal Prosecution Clinic*, 74 MISS. L.J. 983, 1001 (2005).

65. See Erica Hashimoto, *The Problem with Misdemeanor Representation*, 70 WASH. & LEE L. REV. 1019, 1023–24 (2013) (noting that, despite developments in Supreme Court caselaw requiring the right to counsel in many misdemeanor cases, “representation rates for misdemeanor defendants, who have a constitutional right to counsel, lag behind those for felony defendants and lag far behind in at least some jurisdictions”).

66. See Alisa Smith, *Misdemeanors Lack Appeal*, 45 AM. J. CRIM. L. 305, 337 (2019) (studying misdemeanors filed in a “large, urban” Florida county and finding that the vast majority of convictions were never appealed).

67. See Florian Martin, *New Risk Assessment Tool Meant to Make Harris County Bail Rulings More Fair*, HOUS. PUB. MEDIA (July 31, 2017), <https://www.houstonpublicmedia.org/articles/news/2017/07/31/228089/new-risk-assessment-tool-meant-to-make-harris-county-bail-rulings-more-fair/> [<https://perma.cc/YT8T-ZWRA>].

disproportionate impacts of their own—and that such flawed implementation may go unaddressed.

A variation on this concern over inertia in new technology may be a lack of transparency in how the technology functions. In some instances, a lack of transparency may be inherent to the technology itself. Recall the earlier discussion of generative AI. While one might be able to see prompts go into a system and responses come out, how the model draws on its training material to generate the output is generally viewed as a mystery, since the systems analyze patterns themselves and “us[e] that knowledge to predict the next words in a sequence.”<sup>68</sup> This “black box” nature of generative AI technology raises concerns over determining whether the technology is prone to misuse or corruption.<sup>69</sup> While other companies are beginning to specialize in their own AI technology to decipher the workings of generative AI, it’s still early days, and the technology remains largely opaque.<sup>70</sup>

Other times, a lack of transparency may be attributable to technology companies’ own profit motivations. Rebecca Wexler details how companies may invoke trade secrets protections to shield from scrutiny tools used in forensic investigation technologies, software scanning and investigation, and risk assessment tools.<sup>71</sup> Companies may also seek protection for data used to train technologies that rely on machine learning and pattern recognition to function.<sup>72</sup> Should companies invoke trade secret protections to prevent scrutiny into the inner workings of technology, those adopting the technology may be unable to critically assess whether the technology is worth adopting or as effective as it’s marketed to be. And if such technologies are used to prosecute crimes, this may raise issues of due process for those adversely affected by the secretive inner workings of the systems used to aid in their prosecution.<sup>73</sup>

### III. INSTITUTIONAL PRESSURE TO ERR

Technological innovations may hold promise—but realizing this promise may depend on the context in which the technology is employed. When discussing the use of new technology in legal contexts, it is important

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68. Kevin Roose, *A.I.’s Black Boxes Just Got a Little Less Mysterious*, N.Y. TIMES (May 21, 2024), <https://www.nytimes.com/2024/05/21/technology/ai-language-models-anthropic.html> [https://perma.cc/QD6N-H4YB].

69. See Steve Zurier, *The Cybersecurity ChatGPT “Black Box” Problem*, SC MEDIA (May 26, 2023), <https://www.scmagazine.com/news/chatgpt-black-box-problem> [https://perma.cc/G3PY-643J].

70. See Roose, *supra* note 68.

71. Rebecca Wexler, *Life, Liberty, and Trade Secrets: Intellectual Property in the Criminal Justice System*, 70 STAN. L. REV. 1343, 1358–71 (2018).

72. See Arthur Rizer & Caleb Watney, *Artificial Intelligence Can Make Our Jail System More Efficient, Equitable and Just*, 23 TEX. REV. L. & POL. 181, 215 (2018).

73. See *id.* at 202–06 (detailing a due process challenge raising concerns over risk assessment tools used in sentencing).

to keep in mind just how institutional incentives and pressures in legal settings may impact the use of the technology at issue before making claims about the benefits such technology will bring. Technology (and other methods) that may be useful in contexts such as academic research may be misapplied in legal contexts due to lack of expertise and experience of legal actors, as well as the incentives created by the adversarial process.<sup>74</sup>

### A. Illustration: Corpus Linguistics

Corpus linguistics is a method of analyzing “patterns of use in natural texts,” which relies upon “a large and principled collection of natural texts, known as a ‘corpus,’ as a basis for analysis,” using computers to engage in “automatic and interactive techniques.”<sup>75</sup> Using these large databases of texts, scholars can sift through mentions of particular terms and phrases and determine—among other things—frequency of usage in given contexts.<sup>76</sup> In the legal context, advocates of corpus linguistics claim that analyzing the results of words’ and phrases’ usages across a corpus may help determine the ordinary meaning of these words and phrases.<sup>77</sup>

In 2010, Stephen Mouritsen first suggested the use of corpus linguistics in resolving legal disputes by critiquing overreliance on dictionaries and urging the adoption of corpus linguistics as an alternative for determining plain meaning.<sup>78</sup> In the courts, Utah Supreme Court Justice Thomas Lee was the first to employ the technique.<sup>79</sup> Drawing on Mouritsen’s work, Lee wrote several separate opinions employing and arguing for the use of corpus linguistics to aid in questions of legal interpretation.<sup>80</sup> In the 2015 case of *State v. Rasabout*, for instance, Lee wrote a lengthy concurrence, espousing the virtues of corpus linguistics, in which he conducted a search of Google News to interpret the statutory

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74. While this Article highlights this issue of adopting technological innovations, the broader point applies to other concepts such as interpretive methodologies. *See generally* Michael L. Smith, *Disingenuous Interpretation*, 93 Miss. L.J. 349 (2023) (discussing how legal actors like judges and attorneys face institutional pressure to misuse interpretive methods).

75. DOUGLAS BIBER, SUSAN CONRAD, & RANDI REPPEN, *CORPUS LINGUISTICS: INVESTIGATING LANGUAGE STRUCTURE AND USE* 4 (1998).

76. *See* Stephen C. Mouritsen, *Hard Cases and Hard Data: Assessing Corpus Linguistics as an Empirical Path to Plain Meaning*, 13 COLUM. SCI. & TECH. L. REV. 156, 161 (2012).

77. *Id.* at 161–62.

78. *See* Stephen C. Mouritsen, Note, *The Dictionary Is Not a Fortress: Definitional Fallacies and a Corpus-Based Approach to Plain Meaning*, 2010 BYU L. REV. 1915, 1915–19 (2010); *see also* Thomas R. Lee & Stephen C. Mouritsen, *The Corpus and the Critics*, 88 U. CHI. L. REV. 275, 275–276 & n.1 (2021) (noting that Mouritsen’s work was the first to suggest using corpus linguistics “in the interpretation of legal language”).

79. Goldfarb, *supra* note 7, at 474.

80. *Id.*; *see also* *In re Adoption of Baby E.Z.*, 266 P.3d 702, 715–32 & n.31 (Utah 2011) (Lee, J., concurring in part and concurring in the judgment); *State v. Rasabout*, 356 P.3d 1258, 1271–90 (Utah 2015) (Lee, C.J., concurring in part and concurring in judgment).

meaning of “discharge a firearm,” analyzing 43 results and concluding that single shots constitute separate discharges based on his analysis of these news articles.<sup>81</sup> At the time, the court’s majority criticized Lee’s methods, pointing out that he engaged in corpus linguistics methodology of his own initiative rather than evaluating arguments of the party, and warning that Lee’s methods were “subject to neither prior review by the relevant field of study or adversarial briefing.”<sup>82</sup> Lee went on to author several articles with former law clerks that continued to espouse the use of corpus linguistics, relying on his own prior opinions as authority to demonstrate the judicial use of the method.<sup>83</sup>

Beyond Lee’s corpus linguistics contributions, legal scholars have run with the topic. Other scholars follow Lee’s lead in arguing that corpus linguistics may be used to determine the ordinary meaning of statutes in contested cases.<sup>84</sup> Advocates of the method argue that corpus linguistics promises greater rigor and transparency when determining ordinary meaning.<sup>85</sup> In the field of constitutional law, originalists cite corpus linguistics as a method to aid in determinations of original constitutional meaning.<sup>86</sup> Others point to refinement of existing techniques of technical analysis, such as an analysis that treats dictionaries as a corpus and looks to

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81. *Rasabout*, 356 P.3d at 1271–84 (Lee, C.J. concurring in part and concurring in judgment).

82. *Id.* at 1265–66. The court has since changed its stance toward corpus linguistics, following a shift in personnel. See *Richards v. Cox*, 450 P.3d 1074, 1079 (Utah 2019).

83. See James C. Phillips, Daniel M. Ortner, & Thomas R. Lee, *Corpus Linguistics and Original Meaning: A New Tool to Make Originalism More Empirical*, 126 YALE L.J.F. 20, 28 (2016) (citing *Rasabout*, 356 P.3d at 1258); Thomas R. Lee & Stephen C. Mouritsen, *Judging Ordinary Meaning*, 127 YALE L.J. 788, 796 n.23 (2018) (citing three of Lee’s prior opinions); Thomas R. Lee & Stephen C. Mouritsen, *The Corpus and the Critics*, 88 U. CHI. L. REV. 275, 278 n.10 (2021) (citing *Rasabout*, 356 P.3d at 1258); see also Thomas R. Lee & James C. Phillips, *Data-Driven Originalism*, 167 U. PA. L. REV. 261, 268–69 (2019) (arguing for the use of corpus linguistics to determine the Constitution’s original public meaning).

84. See generally Stefan Th. Gries & Brian G. Slocum, *Ordinary Meaning and Corpus Linguistics*, 2017 BYU L. REV. 1417 (2017) (arguing for the potential of corpus linguistics in the empirical verification of ordinary public meaning).

85. See generally James C. Phillips & Jesse Egbert, *Advancing Law and Corpus Linguistics: Importing Principles and Practices from Survey and Content-Analysis Methodologies to Improve Corpus Design and Analysis*, 2017 BYU L. REV. 1589 (2017); Friedemann Vogel, Hanjo Hamann, & Isabelle Gauer, *Computer-Assisted Legal Linguistics: Corpus Analysis as a New Tool for Legal Studies*, 43 L. & SOC. INQUIRY 1340 (2018).

86. See, e.g., Lawrence B. Solum, *Triangulating Public Meaning: Corpus Linguistics, Immersion, and the Constitutional Record*, 2017 BYU L. REV. 1621, 1624–25 (2018) (arguing for the use of corpus linguistics, alongside other techniques, to determine the original public meaning of constitutional provisions); see generally Lee J. Strang, *How Big Data Can Increase Originalism’s Methodological Rigor: Using Corpus Linguistics to Reveal Original Language Conventions*, 50 U.C. DAVIS L. REV. 1181 (2017) (arguing for the use of corpus linguistics to determine original constitutional meaning).

how dictionaries use words to define other words to gain a better understanding than simply reading dictionary entries individually.<sup>87</sup>

But corpus linguistics isn't without its critics. The contents of databases of historical writings may "skew . . . strongly towards elite communication patterns and word use," and therefore fail to provide accurate pictures of public meaning.<sup>88</sup> Deciding what types of language usage should be included in a relevant corpus and used to resolve ambiguity in a case is unclear—depending on one's theory of interpretation, there may be differences in opinion over whether the contents of a grocery list may be listed alongside a work of literature to get a sense of common usage.<sup>89</sup> Other critics press this point more strongly, arguing that statutes are made up of legal language, which "uses common terms, but gives them meanings different from, and sometimes at odds with, the same words as used in nonlegal speech."<sup>90</sup> Even those who have urged the use of corpus linguistics in determining statutory meaning urge caution—warning that proponents of judicial corpus linguistics "underestimate[] the difficulty of judicial adoption of corpus analysis methods."<sup>91</sup>

Objections that corpus linguistics may be difficult for lawyers or judges to adopt are often minimized by advocates of the technology. Thomas Lee and James Phillips acknowledge that "[j]udges are . . . not corpus linguists," and that this is reason for "hesitation" and "a little training in the use of corpus-based methods of inquiry."<sup>92</sup> But they view the concern as one that might be overcome, citing their own work to support claims that corpus linguistics tools "are ultimately not that complex or difficult," that "[c]orpus analysis is like math"—everyone can do it at some basic level," and that judges should "be using a calculator instead of doing it in [their] heads."<sup>93</sup> Additionally, Lee and Phillips suggest "that judges will be aided by expert analysis and full adversary briefing," despite Lee's track record of going it alone while on the bench.<sup>94</sup>

These defenses are lacking, and corpus linguistics' shortcomings exemplify a further reason to pause when considering the adoption of technological advances in legal contexts. Claims that failures of rigor and

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87. See generally Jennifer L. Mascott, *The Dictionary as a Specialized Corpus*, 2017 BYU L. REV. 1557 (2017).

88. Donald L. Drakeman, *Is Corpus Linguistics Better Than Flipping a Coin?*, 109 GEO. L.J. ONLINE 81, 86 (2020).

89. See Stanley Fish, *If You Count It, They Will Come*, 12 N.Y.U. J.L. & LIBERTY 333, 346–47 (2019).

90. Evan C. Zoldan, *Corpus Linguistics and the Dream of Objectivity*, 50 SETON HALL L. REV. 401, 436 (2019).

91. Bria G. Slocum & Stefan Th. Gries, *Judging Corpus Linguistics*, 94 S. CAL. L. REV. POSTSCRIPT 13, 14 (2020); Gries & Slocum, *supra* note 84, at 1470–71 (warning that while corpus linguistics may be useful, it requires "a fair amount of sophistication" and that judges lack the training necessary to engage in sufficiently rigorous linguistic analysis).

92. Lee & Phillips, *supra* note 83, at 331–32.

93. *Id.* at 332.

94. Compare *id.*, with *State v. Rasabout*, 356 P.3d 1258, 1265–66 (Utah 2015).

expertise will lead to the abuse or misuse of these new technologies don't require one to conjure up bad faith or notably incompetent actors. Instead, institutional pressures may lead lawyers and judges to misuse otherwise promising technologies—and these pressures must be part of the accounting when deciding whether to adopt these innovations.

### **B. Reason to Pause: Institutional Pressure to Err**

When considering adopting a new technology, one must be mindful of the context in which that technology is to be employed. Relevant considerations include the level of expertise and training that people in given industries have. Also relevant are the purposes for which the technology may be used.

Consider, for example, the contexts of academia and civil litigation.<sup>95</sup> Academics are generally highly educated and are incentivized to engage in specialized research to explore deep and complex questions that arise in their fields. Balanced and rigorous inquiry is expected and demanded of those engaging in research. Contrast this with civil litigation, in which attorneys (typically without advanced degrees beyond JDs) are obligated to represent their clients and frame their presentations of the law and facts accordingly.<sup>96</sup> Deadlines create time pressures for all involved—including judges who must work through their dockets.<sup>97</sup> Compared with academics, judges and attorneys tend to lack the time, objective motivation, and expertise to engage in deep, balanced research on issues of law and doctrine, let alone other subjects or discipline.<sup>98</sup>

Accordingly, technologies (or techniques more broadly) that may be useful in one context may not be as helpful in a legal context. As I've argued elsewhere with respect to methods of constitutional interpretation, methodology like originalism that requires extensive, rigorous historical investigation is likely to fail in the context of practice and adjudication because of the limited expertise, limited time, and (in the case of most

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95. Examples chosen entirely at random, I assure you.

96. See Frances C. DeLaurentis, *When Ethical Worlds Collide: Teaching Novice Legal Writers to Balance the Duties of Zealous Advocacy and Candor to the Tribunal*, 7 DREXEL L. REV. 1, 9–14 (2014) (describing the tensions in practice and rulemaking between obligations requiring zealous advocacy of clients and candor to courts); see also Bruce A. Green, *Zealous Representation Bound: The Intersection of the Ethical Codes and the Criminal Law*, 69 N.C. L. REV. 687, 711 (1991) (“The duty of zealous advocacy exerts pressure on lawyers to take risks on behalf of clients that they ordinarily might not take on behalf of themselves.”).

97. See Dolores K. Sloviter, *In Praise of Law Reviews*, 75 TEMP. L. REV. 7, 9–10 (2002) (describing time pressures judges face and how this impacts their ability to engage in researching legal scholarship).

98. See David Hricik & Victoria S. Salzmann, *Why There Should Be Fewer Articles Like This One: Law Professors Should Write More for Legal Decision-Makers and Less for Themselves*, 38 SUFFOLK U. L. REV. 761, 780–86 (2005).

attorneys) client-oriented motivations the actors face.<sup>99</sup> So too is the case with technologies. Technology requiring time and expertise to use properly may be prone to misuse and abuse in the hands of legal actors.

Returning to corpus linguistics, Stefan Gries argues that while corpus linguistics may be a useful tool for analysis, those who use it correctly must do so with rigor, disclosures, and “potentially disclaimers.”

<sup>100</sup> To replicate corpus linguistics analysis, information that must be disclosed includes disclosure of search terms employed, techniques used to avoid false positives, “how the data were annotated,” statistical analyses conducted, and whether (and how) there was outlier trimming—among numerous other details.<sup>101</sup> Gries argues that those using corpus linguistics in the legal context fail to provide even basic disclosures detailing their methods.<sup>102</sup> He further argues that their portrayals of corpus linguistics suggest that they lack the “computational or statistical knowledge” to perform necessary computations and to avoid “statistical pitfalls arising from easy oversights.”<sup>103</sup> As for whether judges and lawyers can “bone up” on the basic methods, Gries states that he “ha[s] yet to see a single legal scholar who has ‘boned up enough’ to” engage in any of the basic disclosures and statistical methods and testing necessary to engage in effective corpus linguistics analysis.<sup>104</sup>

An illustration may be informative. In *Health Freedom Defense Fund, Inc. v. Biden*, Judge Kathryn Kimball Mizelle of the Middle District of Florida addressed a challenge to a CDC requirement that people wear masks while traveling on planes, buses, and trains during the COVID-19 pandemic in 2021—particularly the issue of whether the Public Health Services Act authorized the CDC to issue such a mask requirement.<sup>105</sup> At the heart of this inquiry was whether the Act’s authorization of the CDC to provide for “sanitation” measures to prevent the spread of disease permitted a mask mandate.<sup>106</sup> Judge Mizelle purported to engage in corpus linguistics analysis to determine the meaning of “sanitation.” Here is the entirety of the analysis:

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99. See generally Michael L. Smith & Alexander S. Hiland, *Originalism’s Implementation Problem*, 30 WM. & MARY BILL RTS. J. 1063, 1065 (2022); see also Smith, *supra* note 74, at 352 (comparing the likelihood of abuse and misuse of originalism in comparison with other interpretive methods).

100. Gries, *supra* note 8, at 353–54.

101. *Id.*

102. *Id.* at 354.

103. *Id.*

104. *Id.*; see also John S. Ehrett, *Against Corpus Linguistics*, 108 GEO. L.J. ONLINE 50, 69–70 (2019) (describing the complexity of corpus linguistics analysis and arguing that judges and the general public are unlikely to be able to engage in this analysis to understand the meaning of the law).

105. *Health Freedom Def. Fund, Inc. v. Biden*, 599 F. Supp. 3d 1144, 1156–59 (M.D. Fla. 2022) (vacated as moot in *Health Freedom Def. Fund v. President of United States*, 71 F. 4th 888 (2023)).

106. *Id.*

One method to assess the ordinary meaning of a term is to search a database of naturally occurring language. A search returns the desired word as well as its context and, with a sufficient sample size, search results permit inferences on how a word was used. This method is known as corpus linguistics. The Court here searched the Corpus of Historical American English (COHA) to find uses of “sanitation” between 1930 and 1944. Of the 507 results, the most frequent usage of sanitation fit the primary sense described above: a positive act to make a thing or place clean. Common examples referred to sanitation in the context of garbage disposal, sewage and plumbing, or direct cleaning of a dirty or contaminated object. In contrast, by far the least common usage—hovering around 5% of the data set—was of sanitation as a measure to maintain a status of cleanliness, or as a barrier to keep something clean. And so, the COHA search results are consistent with the contextual clues of the active words surrounding sanitation in § 264(a).<sup>107</sup>

Consistent with Gries’s critiques of legal corpus linguistics usage, there are many problems with Judge Mizelle’s analysis. No information on how the court coded its results is given beyond references to potential senses of “sanitation”—missing is any information on whether these senses were how the court coded its hits and whether alternate codes were employed. This makes it impossible to gauge the frequency of the “a positive act to make a thing or place clean,” as the only frequency information the court provides is five percent for a different code.<sup>108</sup> Absent a disclosure of the frequency rate for the “primary sense” or frequencies of other senses of the term, one cannot tell whether the “most frequent usage” of sanitation is a vast majority, a simple majority, or even a plurality of usages.<sup>109</sup> The court declines to provide even a single example of one of the usages surveyed in its analysis—leaving the reader without information regarding the context of usages, and whether “sanitation” was referenced in a general sense, or, instead, as a label for a department or business.<sup>110</sup> No explanation is provided for how (or whether) the court differentiated or

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107. *Id.* at 1160. The paragraph included a footnote quoting an article by Thomas Lee and Stephen Mouritsen for their definition of corpus linguistics, and a second footnote describing the COHA corpus and stating that “Because Congress enacted the PHSA in 1944, the Court searched for uses of the word ‘sanitation’ and variants like ‘sanitary’ and ‘sanitize’ between 1930 and 1944. The search returned 507 hits, or ‘concordance lines.’” *Id.* at 1160 nn. 2–3.

108. *Id.* at 1160.

109. *See id.*

110. *See id.*

weighed different contexts in which “sanitation” was employed or why the court did (or did not) engage in such differentiation.<sup>111</sup> I could go on.<sup>112</sup>

How could this happen? To start, Judge Mizelle is not a trained linguist, having majored in economics with a minor in philosophy in college beyond receiving her law degree.<sup>113</sup> Judge Mizelle does not cite to any briefing or analysis by any parties or amici in her brief discussion of corpus linguistics, suggesting that she engaged in the research of her own initiative.<sup>114</sup> One wonders if the attorneys for the parties could have handled things differently, given the hundreds of terms that needed to be analyzed, resulting in “literally hundreds of levels of discretion” and “an almost unending, and deceptively empirical, linguistic universe.”<sup>115</sup> Judge Mizelle was handling a high-profile case as a district court judge—likely only one case of a full caseload and was therefore subject to the time pressures facing all judges with such a docket.<sup>116</sup>

All of this illustrates a further reason to pause when contemplating the adoption or use of technology in a legal context. The institutional features present in legal contexts may create pressures to use (or misuse) technology in certain ways. One such institutional pressure is the limited time that legal actors often have to complete their work. Time pressure arising from statutory deadlines, the end of the fiscal year, client expense concerns, and pressure to reduce caseloads all place pressure on attorneys and judges to carry out their tasks quickly. This time pressure must be

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111. *See id.*; *see also* Anya Bernstein, *Legal Corpus Linguistics and the Half-Empirical Attitude*, 106 CORNELL L. REV. 1397, 1440 (2021) (critiquing legal corpus linguistics that compares statutory language with how the term “appears in a corpus of some sort of non-legal English,” without acknowledging or justifying why such a comparison between linguistic contexts is warranted).

112. And I do elsewhere. *See* Michael Smith, *The Opaque, Incomplete Corpus Linguistics Analysis in the Mask Mandate Ruling*, MICHAEL SMITH’S L. BLOG (Apr. 19, 2022), <https://smithblawg.blogspot.com/2022/04/the-opaque-incomplete-corpus.html> [<https://perma.cc/WR4T-F5TP>]. Others have done so as well. *See* Stefan Th. Gries, Michael Kranzlein, Nathan Schneider, Brian Slocum, & Kevin Tobia, *Unmasking Textualism: Linguistic Misunderstanding in the Transit Mask Order Case and Beyond*, 122 COLUM. L. REV. F. 192, 212 (2022) (arguing that the opposite result should have been reached).

113. *See Kathryn Kimball Mizelle*, LAKELAND CHRISTIAN SCH., (Nov. 10, 2024), <https://www.lcsonline.org/about/lcs-stories/kathryn-kimball-mizelle/> [<https://perma.cc/L58U-P2QT>]; Dan Sullivan, *5 Things to Know About Kathryn Kimball Mizelle, Tampa Judge Who Struck Down Travel Mask Mandate*, TAMPA BAY TIMES (Apr. 20, 2022), <https://www.tampabay.com/news/florida/2022/04/19/5-things-to-know-about-kathryn-kimball-mizelle-tampa-judge-who-struck-down-travel-mask-mandate/> [<https://perma.cc/M43C-36B7>].

114. *See Health Freedom Def. Fund, Inc.*, 599 F. Supp. 3d at 1160; Daniel C. Tankersley, Comment, *Beyond the Dictionary: Why Sua Sponte Judicial Use of Corpus Linguistics Is Not Appropriate for Statutory Interpretation*, 87 MISS. L.J. 641, 672–73 (2018) (arguing that sua sponte judicial corpus linguistics usage compromises the adversarial process because the parties have no chance to engage in their own analysis or challenge the methods employed by the court).

115. *See* Tankersley, *supra* note 114, at 668.

116. Sloviter, *supra* note 97, at 9–10.

considered when weighing the potential benefits of a new technology. Does the technology, like corpus linguistics, require intensive time to engage in the necessary crafting of search parameters, coding, statistical analysis, and drafting of a full methodological statement?<sup>117</sup> If so, legal actors may not be able to recognize the full potential of the technology. Additionally, does the technology under consideration require substantial expertise? Does it, like corpus linguistics, require education in the methodology of nonlegal fields, such as statistics and linguistics, as well as experience in the search, coding, and disclosure work that rigorous use of the method necessitates? If so, attorneys and judges who lack the training and experience to employ new technologies may not be able to enjoy the benefits the technology applies in contexts where users have the necessary education.

Failure to consider the institutional realities and pressures of legal contexts in which technology is to be employed may create overly optimistic forecasts of the benefits such technology will provide. Those considering adoption must therefore be realistic about how technology may be used and abused by those who will be using it in practice. One must be ready to accept that institutional pressures may render certain technologies virtually useless.

For example, legal actors hoping to employ corpus linguistics aren't likely to obtain new degrees in statistics in linguistics. Attorneys will frame their findings to help their clients. Judges will be faced with dueling data—at least in the instances when they decline to proceed *sua sponte*. Perhaps retained or court-appointed experts will take the time necessary to engage in the detailed analysis required, and be subject to cross-examination and review by others with expertise.<sup>118</sup> This would be a step up from the inexpert flailing of attorneys and judges, as well as attempts to inject expertise through amicus briefs that are not subject to direct review or scrutiny permitted by trial-level expert discovery.<sup>119</sup> Even so, engaging in this analysis within the adversarial process and demanding implementable answers to potentially unanswerable questions may still corrupt even a rigorous inquiry.<sup>120</sup> Taking these institutional incentives into account is necessary if one is to accurately predict how technology will be employed in a legal context.

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117. Gries, *supra* note 8, at 353.

118. Joseph Blocher & Brandon L. Garrett, *Originalism and Historical Fact-Finding*, 112 GEO. L.J. 699, 734 (2024).

119. See generally Allison Orr Larsen, *The Trouble with Amicus Facts*, 100 VA. L. REV. 1757 (2014) (critiquing courts' reliance on facts presented through amicus briefs, which are submitted late in the process, aren't subject to meaningful scrutiny, and which are often the product of advocates).

120. See generally Michael L. Smith, *History as Precedent: Common Law Reasoning in Historical Investigation*, 27 U. PA. J. CONST. L. (forthcoming 2025) (available at [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=4751819](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4751819)) (demonstrating how historical facts are inevitably manipulated to reach clear-cut conclusions by attorneys and judges who seek definitive answers to disputes before them).

#### IV. MOVING FORWARD

This Article sets forth reasons to pause before adopting technology. Taking the preceding considerations into account may counsel against adopting technologies in some cases. But reasons to pause are not necessarily reasons to reject. In many cases technology may be beneficial and worth adopting. This Section addresses strategies to employ to ensure that the dangers addressed above can be minimized or avoided, and how those employing new technology can get the most out of these innovations.

##### A. Demand Transparency

If one uses broad definitions of AI, such as “computer systems and applications that are capable of performing functions normally associated with human intelligence, such as abstracting, reasoning, problem solving, learning, etc.” one will soon find that what “AI” covers is so varied that most technology may fall under its umbrella.<sup>121</sup> “Artificial intelligence” is as much a marketing ploy as it is a technical term.<sup>122</sup> AI may be used as a catch-all term to promise improvements in technology, even when the nature or existence of the improvement, and how it is distinct from existing systems, is not disclosed.<sup>123</sup> Indeed, companies may use the malleable nature of AI language to make promises that would be transparently impossible otherwise.<sup>124</sup>

With this in mind, it is necessary that firms and governments scrutinize proposals that are under consideration before entering into

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121. See CYNTHIA CWIK, PAUL W. GRIMM, MAURA R. GROSSMAN & TOBY WALSH, ARTIFICIAL INTELLIGENCE AND THE COURTS: MATERIALS FOR JUDGES, ARTIFICIAL INTELLIGENCE, TRUSTWORTHINESS AND LITIGATION 6 n.2 (2022), <https://www.nvd.uscourts.gov/wp-content/uploads/2023/04/AI-and-Trustworthiness-NIST.pdf> [<https://perma.cc/44PK-Q2TM>]. Judge Xavier Rodriguez discusses how AI’s use in a wide range of legal contexts, including litigation, criminal justice, employment law, eDiscovery, immigration law, ADR, and law firm marketing—illustrating how a broad definition of AI may encompass so many different technologies to make the label itself of little descriptive worth. See Xavier Rodriguez, *Artificial Intelligence (AI) and the Practice of Law in Texas*, 63 S. TEX. L. REV. 1, 13–27 (2023).

122. See Patrick W. Nutter, Comment, *Machine Learning Evidence: Admissibility and Weight*, 21 U. PA. J. CONST. L. 919, 926 (2019).

123. See, e.g., Dessislav Dobrev, *The Human Lawyer in the Age of Artificial Intelligence: Doomed for Extinction or in Need of a Survival Manual?*, 18. J. INT’L BUS. & L. 39, 53 n.107 (2018) (suggesting that eDiscovery machine learning technology will improve because of artificial intelligence and citing an eDiscovery firm’s claim that “predictive intelligence” (whatever that is) will be improved upon by “artificial intelligence” (whatever that is)).

124. See, e.g., *Commodity Futures Trading Comm’n v. Mayer*, No. 1:20-cv-02476-JPB, 2021 WL 9385440, at \*5 (N.D. Ga. July 27, 2021) (finding that a defendant made false representations about how “his ‘one-of-a-kind’ software used ‘artificial intelligence’ that created ‘smart trades’ of foreign currency pairs” that would result in “wins” on trades at an approximately 90 percent rate).

contracts with technology companies. It is not enough for a company to provide a list of broad AI buzzwords. Governments must request details on the precise technology they employ, how it adds to existing capabilities, and whether there is evidence of the technology's successful use in other, similar circumstances. Doing so may help firms and governments avoid exaggerated value-added claims and to avoid adopting costly technology that brings little to no added benefits.

Beyond the obfuscation present in terminology and marketing of technology, the technology itself must be open to scrutiny—both by those adopting the technology and by those challenging its use. Alyssa Carlson acknowledges the rise of risk assessment tools in the criminal context and warns against claims of trade secret protection for these technologies.<sup>125</sup> Carlson urges that such technologies be employed in a transparent manner and made available for critical examination by defendants in criminal cases.<sup>126</sup> Agencies adopting these technologies should proactively ensure this transparency in criminal contexts and beyond. The diverse array of parties affected—including those scanned by facial recognition technology, those ticketed by automated traffic cameras, and those subjected to risk assessments—should have the chance to scrutinize the technology. Should these technologies come up short, these parties should have an opportunity to challenge its adoption and use.

### **B. Develop Policies for the Review and Auditing of Technology Use**

John Villasenor and Virginia Foggo urge that those adopting new sentencing tools employ transparency and consistency in doing so.<sup>127</sup> A third principle they encourage is auditability—in which data used for risk assessments is preserved to facilitate later due process challenges.<sup>128</sup> This lesson can be applied beyond the context of risk assessment technology. Firms and governments may work to overcome problems of unwarranted confidence in technologies and inertia in their use by setting forth detailed policies for the review and auditing of technologies employed. Having policies in place—preferably before a technology is adopted—to regularly review how the technology is employed and whether it is delivering promised results can help ensure that benefits of technology are realized, and that harms technology causes are taken into account.

Consider the rocky relationship between the company, ShotSpotter, and several cities. ShotSpotter (a technology marketed by SoundThinking)

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125. See generally Alyssa M. Carlson, *The Need for Transparency in the Age of Predictive Sentencing Algorithms*, 103 IOWA L. REV. 303 (2017).

126. *Id.*

127. See John Villasenor & Virginia Foggo, *Artificial Intelligence, Due Process, and Criminal Sentencing*, 2020 MICH. ST. L. REV. 295, 343–50 (2020).

128. *Id.* at 339–43.

is purported to employ sophisticated algorithms to detect gunfire in community and issue alerts to law enforcement agencies based on these alerts.<sup>129</sup> An investigation by the Associated Press noted that ShotSpotter's technology exhibits "a number of serious flaws," including missing actual gunfire and falsely identifying other sounds as gunshots, as well as facilitating the creation of reports by ShotSpotter employees that are "used in court to improperly claim that a defendant shot at police, or provide questionable counts of the number of shots allegedly fired by defendants."<sup>130</sup> In the wake of this investigation, cities like Chicago have announced an intention to cut ties with ShotSpotter after spending millions of dollars on the technology over the course of years-long contracts.<sup>131</sup> New York has conducted its own audit of ShotSpotter's effectiveness, finding that during sampled months, "ShotSpotter alerts only resulted in confirmed shootings between 8% and 20% of the time."<sup>132</sup>

The ShotSpotter case study demonstrates a broader lesson for firms and governments that seek to adopt new technology: there must be policies and procedures in place to review and audit the technology's effectiveness once it is in use. Ensuring top-down review procedures from the very beginning ensures ongoing scrutiny and enhances the opportunity for those affected by new technologies to voice their concerns. Cities should not count on an AP investigation of the companies with which they contract.

The review and auditing procedures adopted should also be developed with the input from the widest possible range of stakeholders. All of the reasons to pause described above are more likely to arise if those adopting new technology have an incomplete understanding of the functioning of the status quo and how technological innovations may affect or be implemented under existing conditions. Ngozi Okidegbe recognizes that as "algorithmic systems and structures have mushroomed in recent years, a growing consensus about the importance of public participation in

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129. See Brendan Max, *Soundthinking's Black-Box Gunshot Detection Method: Untested and Unvetted Tech Flourishes in the Criminal Justice System*, 26 STAN. TECH. L. REV. 193, 204–06 (2023).

130. Grace Burke Martha Mendoza, Juliet Linderman, & Michael Tarm, *How AI-Powered Tech Landed Man in Jail With Scant Evidence*, ASSOCIATED PRESS (Mar. 5, 2022, 12:23 PM), <https://apnews.com/article/artificial-intelligence-algorithm-technology-police-crime-7e3345485aa668c97606d4b54f9b6220> [<https://perma.cc/DJW7-97RK>].

131. Alisha Ebrahimji, *Critics of ShotSpotter Gunfire Detection System Say It's Ineffective, Biased and Costly*, CNN (Feb. 24, 2024, 10:17 AM), <https://www.cnn.com/2024/02/24/us/shotspotter-cities-choose-not-to-use/index.html> [<https://perma.cc/R4U5-PMM3>].

132. See N.Y.C. COMPTROLLER, FP23-074A, AUDIT REPORT ON THE NEW YORK CITY POLICE DEPARTMENT'S OVERSIGHT OF ITS AGREEMENT WITH SHOTSPOTTER INC. FOR THE GUNSHOT DETECTION AND LOCATION SYSTEM (June 20, 2024), <https://comptroller.nyc.gov/reports/audit-report-on-the-new-york-city-police-departments-oversight-of-its-agreement-with-shotspotter-inc-for-the-gunshot-detection-and-location-system/> [<https://perma.cc/2UT7-S7DX>].

algorithmic governance has emerged.”<sup>133</sup> But simply giving everyone a say in the processes of technology adoption is not enough. Okidegbe argues that “deep power differentials between different groups” in society will cause such a process to entrench existing inequalities, with this entrenchment likely to be realized in the output of the systems once they’re in place.<sup>134</sup> To address these realities, deliberative bodies that adopt and govern the use of algorithmic technologies must consist of members with a range of backgrounds—including those without high levels of education, licenses or credentials, or spotless conviction records.<sup>135</sup>

Accounting for how technology will realistically operate and impact people’s lives requires input from those people. Where these groups are typically underrepresented—say because of a lack of wealth or education, or because of their criminal records—measures must be taken to ensure their input. Failure to do so will likely perpetuate inequalities, even if review and auditing measures are in place.

### C. Adopt Flexible or Frequently Renewable Contracts

Even if firms or governments are able to obtain detailed information and specifics about the technology adopted before signing a contract, and even if these actors are able to putplace review and auditing measures in place to evaluate effectiveness, there may be unanticipated costs or consequences of the technology. Referring to cities’ use of ShotSpotter, Elizabeth Joh notes that Chicago Police protocols “sent a police response to every ShotSpotter alert,” and that individual officers ended up “mak[ing] their own quick judgments that certain areas were subject to multiple alerts and therefore would help justify a *Terry* stop, frisk for weapons, or both” using that alert information.<sup>136</sup> This change in “police officers’ perceptions and behavior in the neighborhoods they patrolled and the people they encountered”—specifically, the increased intrusions of more frequent stops and frisks—was “an unexpected consequence of introducing this particular form of automation into police work.”<sup>137</sup>

Companies like ShotSpotter, however, may continue to operate at cities’ expense through the use of multi-year contracts. Chicago recently ceased working with ShotSpotter—but only after its three-year contract

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133. Ngozi Okidegbe, *The Democratizing Power of Algorithms?*, 53 CONN. L. REV. 739, 767 (2022).

134. Ngozi Okidegbe, *To Democratize Algorithms*, 69 UCLA L. REV. 1688, 1697, 1710 (2023).

135. *Id.* at 1737–40.

136. Elizabeth E. Joh, *The Unexpected Consequences of Automation in Policing*, 75 SMU L. REV. 507, 527 (2022).

137. *Id.*

with the company expired.<sup>138</sup> Despite criticism of the technologies, other municipalities continue to renew their contracts with the company.<sup>139</sup> Indeed, even in cities where ShotSpotter's contracts have expired, the company's technology may continue to collect data—raising privacy concerns for residents.<sup>140</sup>

Firms and employers may be unable to account for all contingencies. And if they follow the best practices of implementing audit and review procedures of new technologies, there must be an avenue for those reviews to have a meaningful impact. To this end, to the extent that new technology is adopted on a contractual basis, these contracts ought to be subject to frequent renewal. These contracts may also contain performance standards which, if not met, may justify early withdrawal or revision of the contract. But these standards still may not account for contingencies that neither actor anticipates—making renewal a more effective mechanism for adapting to truly unexpected outcomes. Even if a firm or city determines that a technology is ineffective or harmful, there may be little the firm or city can do if it's stuck in a long-term contract.

### CONCLUSION

New technology is often genuinely beneficial for legal actors. Modern word processing allows for speed and efficiency miles beyond the typewriter and quill of yesteryear. Electronic legal databases permit the instantaneous search of vast resources—the perusal of which would have required untold hours spelunking through library stacks in earlier decades. The tendency to overreact to technological developments with unfounded fears of apocalypses should be resisted.

At the same time, though, those contemplating new technology must avoid the countervailing temptation toward overoptimism. Careful scrutiny of existing practices and institutions is necessary for an accurate account of how much value new technology adds, and whether that

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138. See Trinity Jackson, *Chicago Plans to End Its ShotSpotter Contract*, CHI. READER (Mar. 4, 2024) <https://chicagoreader.com/news/shotspotter-contract-extension/> [https://perma.cc/FDJ3-LM3H].

139. See, e.g., *Police Oversight Commission Approves Recommendation for ShotSpotter Contract Renewal After Lengthy Debate*, PASADENA NOW (Dec. 13, 2024, 5:58 AM) <https://pasadenanow.com/main/police-oversight-commission-approves-recommendation-for-shotspotter-contract-renewal-after-lengthy-debate> [https://perma.cc/5DBC-3J9A] (reporting on a recommendation by Pasadena's Police Oversight Commission to renew its contract with ShotSpotter after an initial three-year term, despite local criticism of the technology).

140. See Max Blaisdell & Jim Daley, *ShotSpotter Keeps Listening After Contracts Expire*, S. SIDE WKLY. (Apr. 24, 2024) <https://southsideweekly.com/shotspotter-sound-thinking-keeps-listening-after-contracts-expire-chicago-san-diego-san-antonio-indianapolis/> [https://perma.cc/9CWK-5DUE] (reporting that ShotSpotter, in some instances, has not removed its technology after cities ended their contracts with the company, and that the company continues to operate that technology to some extent).

technology will be prone to abuse or misuse when put into practice. Engaging those with experience at all levels of the proceedings and institutions in which this technology is to be employed is crucial for a complete understanding of new technology's likely use and impacts. Reviews and audits that proceed according to preexisting policy may allow for ongoing scrutiny and push back against tendencies to overestimate the capacity of complex, novel technologies.

Technology can lead to greater efficiency and capacity for overburdened systems. But, absent appropriate scrutiny, this increased efficiency may only broaden preexisting patterns of harm and oppression. Pausing before adoption is therefore crucial, and those making these determinations would do well to consider the pitfalls and strategies discussed above when making these important decisions.