#### The Faster Horse Fallacy: How the Law Misunderstands Technology

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How does the legal profession understand new technology? Lawyers are involuntary experts in technology: we are not professionally trained in technology like engineers are but must know technology better than the typical citizen does, because the law must regulate how the typical citizen—that is, society—uses technology. The increasing complexity and variety of technologies that affect everyday life, such as artificial intelligence, make our jobs as involuntary experts in technology all the more important. To prepare lawyers to regulate technology effectively, we must first examine how lawyers understand—or misunderstand—technology in the present.

This Article examines a cognitive shortcut that comes naturally to lawyers, one that some scholars promote as a useful tool for understanding technology, but in fact encourages the legal system to misunderstand technology and warps outcomes in procedural law, substantive law, and public policy. This cognitive error, which I call the faster horse fallacy, refers to misunderstanding a new technology as identical to an old one, only cheaper and performing better. While cars and horses can both haul people or cargo, a car is not a faster equivalent of a horse because cars have features that horses lack, meaning that cars create problems that horses do not. In the modern context, the faster horse fallacy causes courts to perceive email as a faster and cheaper version of mail, thus undermining the right to notice; lawyers to view AI-assisted discovery as a faster and cheaper version of human review, distorting litigation outcomes; and regulators to present electric vehicles as cleaner and cheaper equivalents of gasoline cars, increasing the risk of traffic fatalities.

The faster horse fallacy arises from a failure to distinguish a product from its underlying technology. Technology is rarely presented solely as a technology; technology is presented as a product that consumers want to use. Such products are designed so that typical users need no knowledge of the underlying technology to use them to their fullest enjoyment: consumers need not study internal combustion to drive because, if one needed an engineering degree to drive a car, Ford would go out of business. However, the ability to use a product creates an illusion that one understands the technology as well—an illusion that legal scholars appear to have encouraged. In addition to diagnosing the problem, this Article also discusses potential solutions to the faster horse fallacy.

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#### INTRODUCTION

How does the legal profession, including judges, attorneys, and academics, understand new technology? Lawyers are involuntary experts in technology: we are not professionally trained in technology like engineers are but must know technology better than a typical citizen does, because the law must regulate how the typical citizen—that is, society—uses technology. Whether through legislation or litigation, the law has been called upon to, for example, protect children from social media such as TikTok,<sup>1</sup> to limit the market power of firms such as Google and Apple,<sup>2</sup> and to guide the development of artificial intelligence in an "accountable, transparent, . . . and fair" way.<sup>3</sup> Thus, for the legal profession to serve effectively as involuntary experts in technology. If something in the way that the profession thinks systematically distorts its perception of technology, that cognitive flaw could be mended—or, at the very least, the profession could be warned that such a flaw exists.

But scholars have not seriously examined how the legal profession understands technology. What existing works have done is to accept as fact that the profession misunderstands technology. To be sure, scholarly attention devoted to the law and technology field is arguably at an all-time high. For every technology with potential legal uses, ranging from the familiar such as video chat<sup>4</sup> and smartphone applications<sup>5</sup> to the futuristic such as artificial intelligence<sup>6</sup> and blockchain,<sup>7</sup> there are law review articles arguing for that technology's extensive legal adoption. And, in arguing for such technologies to be adopted, scholars accept as fact that lawyers are inept with technology and chastise them for the offense. For instance, courts' adherence to notice by mail instead of email is criticized as "sacrificing . . . the enforcement of a constitutional right,"<sup>8</sup> and law firms are advised to swiftly adapt to new technology lest they go "technically bankrupt."<sup>9</sup> Some have even proposed civil sanctions against "luddite lawyers" who "extend[] litigation using outdated technology."<sup>10</sup>

Chastising lawyers for misunderstanding technology or proposing to sanction them for it is unlikely to be effective if we do not understand *why* lawyers misunderstand technology. As many philosophers have argued, threatening to punish someone who cannot tell right from wrong would

<sup>2</sup> See, e.g., Council Regulation 2022/1925 of Sept. 14, 2022, On Contestable and Fair Markets in the Digital Sector and Amending Directives (EU) 2019/1937 and (EU) 2020/1828 (EU Digital Markets Act), 2022 O.J. (L 265) 1.

<sup>3</sup> S. \_\_, 118th Cong. § 206(b)(1)(B), *available at* <u>https://www.thune.senate.gov/public/\_cache/files/7dea8daa-f6d1-4881-ad21-2381fcbe0785/6362CE1D0A17743166BC170A593B5CDA.ccaskfall23a15.pdf</u>.

<sup>&</sup>lt;sup>1</sup> See, e.g., 2023 Montana Laws Ch. 503 § 1(1)(a) (prohibiting the operation of TikTok in the state of Montana); David Shepardson, *Utah Sues TikTok, Claiming App Has Harmful Impact on Children*, REUTERS (Oct. 10, 2023), *available at* <u>https://www.reuters.com/legal/utah-sues-tiktok-over-impact-app-children-2023-10-10/</u>.

<sup>&</sup>lt;sup>4</sup> See, e.g., James E. Cabral et al., Using Technology to Enhance Access to Justice, 26 HARV. J.L. & TECH. 241, 263 (2012) (proposing the use of video chat to improve access to legal services).

 <sup>&</sup>lt;sup>5</sup> See, e.g., Sherley E. Cruz, Coding for Cultural Competency: Expanding Access to Justice with Technology, 86 TENN.
 L. REV. 347, 361 (2019) (proposing the use of apps to facilitate communication between attorneys and their clients).
 <sup>6</sup> See, e.g., Liane Colonna, Artificial Intelligence in the Internet of Health Things: Is the Solution to AI Privacy More AI?, 27 B.U. J. SCI. & TECH. L. 312, 312 (2021) (arguing for increased use of AI to improve privacy protections).

 <sup>&</sup>lt;sup>7</sup> See, e.g., Kimberly A. Houser & John T. Holden, *Navigating the Non-Fungible Token*, 2022 UTAH L. REV. 891, 928 (2022) ("Public ledgers containing real estate represented by an NFT instead of a paper deed could reduce fraud . . . .").
 <sup>8</sup> Christine P. Bartholomew, *E-Notice*, 68 DUKE L.J. 217, 223–24 (2018).

<sup>&</sup>lt;sup>9</sup> Brook E. Gotberg, *Technically Bankrupt*, 48 SETON HALL L. REV. 111, 114–15 (2017).

<sup>&</sup>lt;sup>10</sup> Michael Thomas Murphy, *Just and Speedy: On Civil Discovery Sanctions for Luddite Lawyers*, 25 GEO. MASON L. REV. 36, 60 (2017).

not deter that person from wrongdoing.<sup>11</sup> For the same reason, no amount of scolding is likely to get lawyers to stop misunderstanding technology if we do not examine the cause. The few existing explanations for lawyers' technological ineptitude appear unsatisfactory on their face. Some argue that courts shun email because of "judicial neophobia."<sup>12</sup> While a fear of change may explain why lawyers *resist* technology, it does not explain why lawyers are bad at *using* it<sup>13</sup> once they overcome their supposed neophobia—like the lawyer who cited fake caselaw dreamed up by ChatGPT in a brief, in the belief that ChatGPT is a "super search engine."<sup>14</sup> Others argue that lawyers are inept at technology because they are not trained in it.<sup>15</sup> This is unhelpful because, as explained, modern society requires the legal profession to be proficient in technology *despite* its lack of training in it.

This Article examines how the legal profession understands technology and explains why the profession misunderstands technology so often. I argue that lawyers often misperceive a new technology as being identical to an old technology that is used for similar purposes, except that the new technology is seen as cheaper or performing better. What lawyers do is akin to misperceiving a car as a faster equivalent of a horse. This perception may be harmless for a consumer who simply needs a vehicle to haul people or cargo, because a car is indeed faster than a horse and can do the job just as well as a horse. But a car is not a faster *equivalent* of a horse because cars have features that horses do not, meaning that cars create problems that horses do not. If the law perceives cars as the same thing as horses, only faster, the law could not address problems unique to cars. For example, letting cars share the road with horses, as was common in the 19th century,<sup>16</sup> may be perfectly fine if cars are just faster horses. But cars of that time, unlike horses, belched steam and made hissing noises,<sup>17</sup> scaring passing horses and causing accidents with horse-drawn carriages.<sup>18</sup>

As far-fetched as it may seem to say that anyone in the 21st century views a car as a faster horse, I argue that this is, in essence, how the legal profession often understands technology today. I define this cognitive error, of treating a new technology as if it were identical to an old technology in all but cost or performance despite features and problems unique to the new technology, as the faster horse fallacy. Because the fallacy distorts lawyers' perceptions of technology generally, it warps legal outcomes in just as broad a range of legal issues, including procedure, substance, and public policy. This Article demonstrates how courts' perception of email as a faster and cheaper

<sup>&</sup>lt;sup>11</sup> Cf. Daniel Varona Gómez, Duress and the Antcolony's Ethic: Reflections on the Foundations of the Defense and Its Limits, 11 NEW CRIM. L. REV. 615, 621 (2008) ("[T]he threat of punishment would be ineffective" in deterring "those who involuntarily break the law because of necessity or compulsion.") (citing H.L.A. HART, PUNISHMENT AND RESPONSIBILITY: ESSAYS IN THE PHILOSOPHY OF LAW (1968)).

<sup>&</sup>lt;sup>12</sup> Bartholomew, *supra* note 8 at 237, 243.

<sup>&</sup>lt;sup>13</sup> See, e.g., Murphy, supra note 10 at 38 ("Lawyers are 'bad' at technology. It is an axiom . . . .").

<sup>&</sup>lt;sup>14</sup> Benjamin Weiser & Nate Schweber, *The ChatGPT Lawyer Explains Himself*, N.Y. TIMES (June 8, 2023), *available at* <u>https://www.nytimes.com/2023/06/08/nyregion/lawyer-chatgpt-sanctions.html</u>.

<sup>&</sup>lt;sup>15</sup> *Cf. In re Perry Cnty. Foods, Inc.*, 313 B.R. 875, 879 n.2 (Bankr. N.D. Ala. 2004) ("Given the lack of training . . . in the ever expanding areas requiring technical, scientific, and quantitative capabilities, it is no longer unexpected that lawyers and judges are unable to bring to bear that which such . . . training and background would accord them.").

<sup>&</sup>lt;sup>16</sup> See ROBERT MERKIN & JEREMY STUART-SMITH, THE LAW OF MOTOR INSURANCE 4 (2004) (describing a British law from 1865 requiring steam-engine cars to "alert those in control of horses of the . . . presence of the vehicle.").
<sup>17</sup> STEPHEN B. GODDARD, GETTING THERE: THE EPIC STRUGGLE BETWEEN ROAD AND RAIL IN THE AMERICAN CENTURY 66 (1996) (describing "cars with . . . steam engines . . . whose noisy belching scared horses as they passed.").
<sup>18</sup> See H. MARK HILDEBRANDT & MARTHA A. CHURCHILL, ELECTRIC TROLLEYS OF WASHTENAW COUNTY 7 (2009) ("[H]orses . . . sometimes bolted when they saw an exposed steam engine . . . . A runaway horse was dangerous to the driver, the wagon, and the passengers.").

version of mail undermines the right to notice; lawyers' view of AI-assisted discovery tools as a faster and cheaper version of humans doing discovery can introduce systemic errors into discovery and thus into litigation outcomes; and how regulators' presentation of electric vehicles as cleaner and cheaper equivalents of gasoline cars can increase traffic fatalities. Indeed, the most significant harm of the faster horse fallacy is in its reach, not its effect on any one technology or field of law.

This Article proceeds as follows. Part I establishes the existence of the faster horse fallacy by showing how it operates in electronic notice for purposes such as class actions, arbitration, and access to Medicaid and other public services. Part I also argues that the fallacy perverts the right to notice into a duty to keep oneself notified. Part II establishes the significance of the faster horse fallacy by showing how it warps a wider range of outcomes in law and policy: a misperception of AI-assisted discovery tools as a faster and cheaper version of human review can distort litigation outcomes, and presenting electric cars as cheaper and cleaner versions of gasoline cars can increase traffic fatalities. Part III discusses why the fallacy arises and why it applies uniquely to technology. Technology is often presented as products that do not require technological expertise to use, and lawyers mistake their ability to use a product for understanding the underlying technology. This illusion of proficiency causes lawyers to use the faster horse fallacy. Part IV presents a short-term solution to the faster horse fallacy and applies it to the problem of improper uses of email for notice.

#### I. THE EXISTENCE OF THE FASTER HORSE FALLACY

Showing that the faster horse fallacy warps the legal profession's perception of technology today will undoubtedly take substantial convincing. Were this Article discussing the technological perceptions of a person from the Middle Ages who could not possibly have seen such a thing as a car, or any machine with more complex parts than levers and pulleys,<sup>19</sup> it would be unremarkable to suggest that such a person might consider a car to be a faster horse when introduced to a car for the first time. After all, "any sufficiently advanced technology is indistinguishable from magic."<sup>20</sup>

But this Article's claim that the legal profession views technology through that same lens today may attract more skepticism. The core features of technologies without which contemporary society, economy, and industry would not exist were mostly invented in the 20th century, or even before then: internal combustion engines, airplanes, telephones, computers, and nuclear power, to name a few.<sup>21</sup> Given the longevity of these technologies, their widespread use, and the abundance of information about how they work, how could the contemporary legal profession's perception of technology resemble anything like the view that a car must be a faster equivalent of a horse? To establish that the faster horse fallacy can distort the legal profession's perception of technology generally, not only the most cutting-edge of technologies, Part I shows how the faster horse fallacy warps lawyers' view of a technology invented in 1971 and used commercially since 1989: email.<sup>22</sup>

<sup>&</sup>lt;sup>19</sup> See Brian Stock, Science, Technology, and Economic Progress in the Early Middle Ages, *in* SCIENCE IN THE MIDDLE AGES 28 (David C. Lindberg ed. 1973).

<sup>&</sup>lt;sup>20</sup> WILLIAM H. STAHL, GOD AND THE CHIP: RELIGION AND THE CULTURE OF TECHNOLOGY 97 (1999) (quoting Arthur C. Clarke, Profiles of the Future: An Inquiry into the Limits of the Possible 21 (1973)).

<sup>&</sup>lt;sup>21</sup> See Kyla Latrice Tennin, Change Management During Unprecedented Times 45 (2023).

<sup>&</sup>lt;sup>22</sup> See Steve Jones, Encyclopedia of New Media: An Essential Reference to Communication and Technology 175 (2003).

#### A. Courts Misperceive Email as a Faster and Cheaper Equivalent of Mail

The legal system considers email to be materially identical to mail, only faster and cheaper. For decades, the profession has observed that "[e]-mail is almost equivalent to sending a letter"<sup>23</sup> but "cheaper and faster"<sup>24</sup> for a host of procedural and substantive legal purposes.<sup>25</sup> Into the 2020s, courts find that email "can facilitate notice . . . at low cost"<sup>26</sup> and "gets where it's supposed to go . . . instantaneously," whereas "mail—which some disparage as [s]nail mail—takes, at best, days and sometimes weeks."<sup>27</sup> To some, the "name alone, e-'mail,' demonstrates the analogy" to mail.<sup>28</sup>

Email is not only described as a faster and cheaper version of mail, but also treated as such. Perhaps the legal context in which this fact is most apparent is class action settlement. Class action defendants seeking to settle notify people who might have outstanding claims, to the effect of "[i]f you . . . owne[d] . . . an iPhone 6 . . . before December 21, 2017, you could be entitled to benefits under a class action settlement."<sup>29</sup> Regardless of whether notice is made by email or mail, federal courts use the same method to determine whether a claimant was notified: check whether a notice was returned to sender. Federal courts examine how many postal mail notices were "returned as undeliverable"<sup>30</sup> and consider mail notice to be adequate if the percentage of returned notices is in line with the "average" rate.<sup>31</sup> Similarly, unless emails "bounce back" because claimants "email addresses were invalid,"<sup>32</sup> courts find that claimants "appear to have received" notice by email.<sup>33</sup>

Using the same method to determine adequacy of notice for both email and mail may seem intuitive because emails sent to nonexistent addresses return failure messages,<sup>34</sup> just as the post office returns misdirected mail to the sender.<sup>35</sup> And if one thinks that email is a cheaper and faster equivalent of mail, there is no reason not to replace mail with email. Federal courts across the country "consistently approve" class action settlements which provide notice "primarily through email."<sup>36</sup> Courts even allow notice "solely by email" unless email is "returned as undeliverable."<sup>37</sup>

<sup>27</sup> Pryke v. First Solar, Inc., No. 3:21-CV-00681-JGC, 2021 WL 5027565, at \*3 (N.D. Ohio Oct. 29, 2021).

<sup>32</sup> In re Online DVD-Rental Antitrust Litig., 779 F.3d 934, 941 (9th Cir. 2015).

<sup>&</sup>lt;sup>23</sup> United States v. Charbonneau, 979 F. Supp. 1177, 1184 (S.D. Ohio 1997).

<sup>&</sup>lt;sup>24</sup> Gary W. Derrick & Irving L. Faught, *New Developments in Oklahoma Business Entity Law*, 56 OKLA. L. REV. 259, 264 (2003).

<sup>&</sup>lt;sup>25</sup> *Id.* at 264 (notice); *Charbonneau*, 979 F. Supp at 1184 (privacy law); Steven R. Salbu, *Who Should Govern the Internet? Monitoring and Supporting a New Frontier*, 11 HARV. J.L. & TECH. 429, 471–72 (1998) (defamation law). <sup>26</sup> *Grove v. Beer Barn Corp.*, No. 120CV00027SMRCFB, 2021 WL 6618708, at \*7 (S.D. Iowa Apr. 21, 2021).

<sup>&</sup>lt;sup>28</sup> Jennifer Mingus, Note, *Email: A Constitutional (and Economical) Method of Transmitting Class Action Notice*, 47 CLEV. ST. L. REV. 87, 89 (1999).

<sup>&</sup>lt;sup>29</sup> Smartphone Performance Settlement, available at <u>https://www.smartphoneperformancesettlement.com/</u>.

 <sup>&</sup>lt;sup>30</sup> Garland v. Cohen & Krassner, No. 08-CV-4626 KAM RLM, 2011 WL 6010211, at \*14 (E.D.N.Y. Nov. 29, 2011).
 <sup>31</sup> In re Ikon Off. Sols., Inc. Sec. Litig., 209 F.R.D. 94, 101 (E.D. Pa. 2002); see also In re Charles Schwab Corp. Sec. Litig., No. C 08-01510 WHA, 2010 WL 4509718, at \*1 (N.D. Cal. Nov. 1, 2010) (finding that the mailed notice was adequate citing the lack of return to sender, despite a class member claiming not to have received notice).
 <sup>32</sup> In re Online DVD. Partal Antitrust Litic. 770 F 2d 024, 041 (0th Cir. 2015)

<sup>&</sup>lt;sup>33</sup> Noll v. eBay, Inc., 309 F.R.D. 593, 605 (N.D. Cal. 2015); see also In re Sony SXRD Rear Projection Television Class Action Litig., No. 06 CIV. 5173 (RPP), 2008 WL 1956267, at \*4 (S.D.N.Y. May 1, 2008) (mail notice sent to class members whose email notices bounced back); In re Netflix Priv. Litig., No. 5:11-CV-00379 EJD, 2012 WL 2598819, at \*4 (N.D. Cal. July 5, 2012) (email notice re-sent to a different email address if the first bounced back).

 <sup>&</sup>lt;sup>34</sup> SIMONE NATALE, DECEITFUL MEDIA: ARTIFICIAL INTELLIGENCE AND SOCIAL LIFE AFTER THE TURING TEST 71 (2018).
 <sup>35</sup> See Husted v. A. Philip Randolph Inst., 138 S. Ct. 1833, 1855 (2018) (Breyer, J., dissenting).

<sup>&</sup>lt;sup>36</sup> Morgan v. Pub. Storage, 301 F. Supp. 3d 1237, 1262 (S.D. Fla. 2016); supra note 33 and accompanying text.

<sup>&</sup>lt;sup>37</sup> Ortega v. Uber Techs. Inc., No. 15CV7387NGGJO, 2018 WL 4190799, at \*10 (E.D.N.Y. May 4, 2018); see also Kissel v. Code 42 Software, Inc., No. SACV151936JLSKES, 2017 WL 10560526, \*10 (C.D. Cal. Oct. 4, 2017) (same).

As for the few courts "clinging to mail . . . as the primary means of notice," scholars lament that such "ungrounded fears about technology" "sacrific[e] the effectiveness of class actions and the enforcement of a constitutional right."<sup>38</sup> Scholars have called for electronic notice in not only class actions but also a variety of other contexts, such as service of process by "any medium that allows plaintiffs to offer proof of their attempt and the defendant's use of the medium," including email.<sup>39</sup>

But email is not just a faster and cheaper equivalent of mail because email has features, and thus creates problems, that mail does not. A feature unique to email is the spambox: popular email clients such as Gmail "automatically filter for" spam mail,<sup>40</sup> often putting legitimate emails that the email client erroneously labeled as junk in the spambox<sup>41</sup> unbeknownst to the recipient.<sup>42</sup> Spamboxes also automatically delete emails flagged as spam after some length of time<sup>43</sup> unless a user manually saves them.<sup>44</sup> Delivering email to a spambox is like delivering mail into a trash can which automatically empties itself located in the recipient's home. The mail would not be returned to sender because it was placed in the recipient's home, but she would have to go through the trash before the can empties itself to know that it was delivered. Like mail sent to a self-emptying trash can, email sent to the spambox does not generate a "returned-as-undeliverable" message<sup>45</sup> because the email would have been delivered to the correct email address, just not to the recipient's inbox.

While courts would never consider mail delivered to trash cans to be adequate notice, they effectively treat email sent to the *electronic analogue* of a trash can—the spambox—to be adequate notice. This because courts determine that mail or email notice was made if it was not returned to sender, even though an email can fail to reach a recipient through no fault of the recipient, without generating a returned-to-sender message, if the email is delivered to the spambox. Perhaps the most direct indication that courts treat email as a faster and cheaper version of mail, despite a

<sup>&</sup>lt;sup>38</sup> Bartholomew, *supra* note 8, at 223-24, 251; *see also* Brian Walters, "*Best Notice Practicable*" *in the Twenty-First Century*, 2003 UCLA J.L. & TECH. 4 (2003) ("While technology and the ability to send notice in better ways moves forward, many courts continue to look backward and adhere to . . . notice that [is] technologically outdated.").

<sup>&</sup>lt;sup>39</sup> Andrew C. Budzinski, *Reforming Service of Process: An Access-to-Justice Framework*, 90 U. COLO. L. REV. 167, 217-18 (2019); see also Svetlana Gitman, Comment, (*Dis*)service of Process: The Need to Amend Rule 4 to Comply with Modern Usage of Technology, 45 J. MARSHALL L. REV. 459, 460 (2012).

<sup>&</sup>lt;sup>40</sup> JULIE RYAN & CADE KAMACHI, DETECTING AND COMBATING MALICIOUS EMAIL 66 (2017); *see also* Harry Surden, *Machine Learning and Law: An Overview, in* RESEARCH HANDBOOK ON BIG DATA LAW 171, 172 (Roland Vogl ed. 2021) ("Many email applications . . . automatically identify and filter 'spam.").

<sup>&</sup>lt;sup>41</sup> See SUNITA VIKRANT DHAVALE, ADVANCED IMAGE-BASED SPAM DETECTION AND FILTERING TECHNIQUES 42 (2017) ("The problem with many email spam filters is that sometimes a valid message may be blocked.").

<sup>&</sup>lt;sup>42</sup> See DEBORAH MORLEY & CHARLES S. PARKER, UNDERSTANDING COMPUTERS: TODAY AND TOMORROW, COMPREHENSIVE 377 (2016) ("Many email . . . services have built-in spam filters that identify possible spam and either flag it or move it to a *Spam folder* or *Junk Email folder*. . . . [B]e sure to check your Spam folders periodically to locate any email messages mistakenly filed there—especially before you permanently delete those messages.").

<sup>&</sup>lt;sup>43</sup> See, e.g., APPLE, Manage Junk Mail in Mail on iCloud.com ("Most junk mail (spam) sent to your @icloud.com address . . . is automatically identified and moved to your Junk folder. . . . Because messages in the Junk folder are automatically deleted after 30 days, periodically check the Junk folder for messages that were mistakenly marked as junk."), https://support.apple.com/guide/icloud/manage-junk-mail-mm6b1a2ced/icloud (last visited May 5, 2023).

<sup>&</sup>lt;sup>44</sup> REID F. TRAUTZ & DANIEL E. PINNINGTON, THE BUSY LAWYER'S GUIDE TO SUCCESS: ESSENTIAL TIPS TO POWER YOUR PRACTICE 88 (2009) ("[I]f you don't check your spam box daily, you could miss an important message (like one that affects a brief you're in the throes of completing).

<sup>&</sup>lt;sup>45</sup> NOMAN RANA, E-MARKETING INTELLIGENCE: TRANSFORMING BRAND & INCREASING SALES USING DIGITAL CHANNELS 136-37 (2009) (stating that a recipient might "not open[] [or] click[] on" an email, despite the lack of a bounce, because the email was "filtered by a spam filter" or the email was "delivered, but to a bulk or potential spam folder" and "[m]any recipients may . . . ignore these folders assuming that all emails in the folder are spam messages.").

problem unique to email, is courts finding that notice was made even when the intended recipient shows the court that an email notice went to her spambox.<sup>46</sup> In a class action in which a claimant objected to the settlement for this reason, the court stated that if class members "were sent copies of the claim form by email [but] never responded, . . . that's . . . their bad luck or their decision."<sup>47</sup>

The court's statement indicates a misunderstanding of what it means for an email to have been delivered to a spambox, because a claimant could not have had a chance to decide whether to respond to an email if it was delivered to her spambox and was automatically deleted without her knowledge.<sup>48</sup> The court's statement could be plausibly explained only if the court understands email as not having a spambox, or understands the spambox as no different from the inbox—as in, if the court understands email to be effectively identical to postal mail, different only in cost and speed. If mail carriers actually delivered mail into trash cans in the recipients' homes, it would be difficult to imagine courts saying that the recipients in those circumstances received notice, or that the recipients have only themselves to blame if they fail to act on the notice in a timely manner.

### B. The Misperception of Email as Faster and Cheaper Mail Undermines Notice

Section I.A has established that courts' perception of email as a faster and cheaper version of postal mail is a manifestation of the faster horse fallacy. For organizational reasons, Section I.D shows that the scholarly view of email suffers from the same. But the fact that courts and scholars perceive email through the faster horse fallacy, on its own, is not necessarily a problem. The courts' failure to distinguish delivery to spamboxes from delivery to inboxes could be inconsequential if the likelihood of email being delivered to spamboxes is sufficiently low. Section I.B demonstrates that courts' misperception of email does meaningfully undermine notice, because parties with an incentive to frustrate notice can deliberately design email notice to go to spamboxes at a low cost.

Class action defendants and named plaintiffs have an incentive to frustrate notice to class members to the extent possible without the judge noticing. Decades of experience has shown that class action defendants and named plaintiffs can collude for mutual gain at the expense of the rest of the class. For example, defendants promise a disproportionate cut of the settlement fund to the named plaintiffs, in exchange for the defendants being released from future claims from the rest of the class.<sup>49</sup> Some defendants have even been suspected of auditioning plaintiffs to sue them.<sup>50</sup> The main obstacle to such sweetheart deals is to get them approved over objections from the class

<sup>&</sup>lt;sup>46</sup> Cohorst v. BRE Properties, Inc., No. 3:10-CV-2666-JM-BGS, Dkt. No. 58-2, at i (S.D. Cal. Sep. 29, 2011).

<sup>&</sup>lt;sup>47</sup> *Id*. at 19.

<sup>&</sup>lt;sup>48</sup> See APPLE, supra note 43 and accompanying text.

<sup>&</sup>lt;sup>49</sup> See, e.g., In re Bluetooth Headset Prod. Liab. Litig., 654 F.3d 935, 947 (9th Cir. 2011) ("[C]ourts . . . must be vigilant . . . for more subtle signs that class counsel have allowed . . . their own self-interests and that of certain class members to infect the negotiations. [S]uch signs [include] . . . when the class receives no monetary distribution but class counsel are amply rewarded.") (internal quotations and citations omitted); Susan P. Koniak, *Feasting While the Widow Weeps:* Georgine v. Amchem Products, Inc., 80 CORNELL L. REV. 1045, 1048 (1995) (settlement in *Georgine v. Amchem Products, Inc.*, 157 F.R.D. 246 (E.D. Pa. 1994) "invites defendants who harm large groups of people to pay a premium to the first victims who file claims in exchange for . . . limited liability to all future claimants"). <sup>50</sup> See John C. Coffee, Jr., *Class Wars: The Dilemma of the Mass Tort Class Action*, 95 COLUM. L. REV. 1343, 1354 (1995) ("[S]uspect settlements result . . . because of the defendants' ability to shop for favorable settlement terms, either by contacting multiple plaintiffs' attorneys or by inducing them to compete against each other.").

members who are being shortchanged. Defendants and named plaintiffs can reduce the number of objectors by reducing the number of members who are notified, but the court must be kept in the dark because it would withhold or revoke approval if it learns that too few people were notified.<sup>51</sup>

Class action defendants and lead plaintiffs can suppress notice by exploiting the faster horse fallacy. As Section I.A showed, courts determine that a notice was received if it is not returned to sender, for both email and mail. If email notice can be designed to be sent to the spambox, courts would incorrectly consider the addressee to have been notified because there would be no returned-to-sender message.<sup>52</sup> Courts would not need too much coaxing to permit notice by email, given how prevalent it already is.<sup>53</sup> Moreover, designing email to increase the likelihood of delivery to the spambox would not be expensive: the sender can include pictures in emails. Email clients tend to block images in emails from unfamiliar addresses, and are more likely to flag an email as spam if it carries images.<sup>54</sup> This is because early countermeasures to spam tried to determine whether an email is spam by looking for certain words commonly used by spammers, such as "*Viagra* or *investments*."<sup>55</sup> As spammers became more sophisticated, they started bypassing text-based spam filters using images, which would convey the same message but would not be detected as text.<sup>56</sup>

The final challenge—designing emails to go to spamboxes without tipping off the judge can be overcome just as easily, by coming up with ostensibly benign reasons for including images in email notices. In a class action which notified members by mail, the court "expressed concern that the Notice was indistinguishable from junk mail because it buried the [defendant company's name] in the text," which the court held "was sufficiently addresse[d]" by "prominently displaying [the defendant's] logo" in the notice.<sup>57</sup> Litigants with an incentive to suppress notice can present the same rationale to justify putting company logos (or any other image that can be defended as being helpful to class members) into email settlement notices. While the reason given to the judge would be that these images would enhance notice to class members by, for example, making the notice look more authentic to class members, the actual effect of the images would be to increase the likelihood of the settlement notice email being sent to the spambox, unbeknownst to the judge.

Litigants putting images into settlement notice emails under benign pretenses is not merely a possibility; litigants appear to be using this tactic already. For example, the defendant and named plaintiffs in the 2022 class action settlement against Plaid, Inc. told the court that they created a video explaining the claims process to make it "user-friendly and make it easy for Class Members to find information about the case."<sup>58</sup> The email settlement notice to potential claimants was delivered to the spambox of my personal Gmail account, as shown in the following screenshot.

<sup>&</sup>lt;sup>51</sup> See, e.g., Roes, 1-2 v. SFBSC Mgmt., LLC, 944 F.3d 1035, 1046 (9th Cir. 2019); Yates v. Checkers Drive-In Restaurants, Inc., No. 17 C 9219, 2020 WL 6447196, at \*5 (N.D. III. Nov. 3, 2020).

<sup>&</sup>lt;sup>52</sup> See supra notes 46-48 and accompanying text.

<sup>&</sup>lt;sup>53</sup> See supra notes 36-37 and accompanying text.

<sup>&</sup>lt;sup>54</sup> See Shirin Kalantari, Open About the Open-Rate? State of Email Tracking in Marketing Emails and Its Effects on User's Privacy, in PRIVACY AND IDENTITY MANAGEMENT 187, 187 (Michael Friedewald, Stefan Schiffner & Stephan Krenn eds. 2021).

<sup>&</sup>lt;sup>55</sup> MARK CIAMPA, COMPTIA SECURITY+ GUIDE TO NETWORK SECURITY FUNDAMENTALS 19 (7th ed. 2021).

 <sup>&</sup>lt;sup>56</sup> Vít Listík, Jan Šedivý & Václav Hlaváč, *Email Image Spam Classification based on ResNet Convolutional Neural Network*, 6TH INTERNATIONAL CONFERENCE ON INFORMATION SYSTEMS SECURITY AND PRIVACY 457, 458 (2020).
 <sup>57</sup> Silveira v. M&T Bank, 2021 WL 2403157, at \*8 (C.D. Cal. May 6, 2021).

<sup>&</sup>lt;sup>58</sup> In re Plaid, Inc. Privacy Litigation, No. 4:20-CV-03056-DMR, Dkt. No. 135-2, at 25 (N.D. Cal. Aug. 5, 2021).

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I cannot definitively say why this email was sent to spam, because Google uses proprietary algorithms and other procedures to determine which emails are flagged as spam and which emails are not.<sup>59</sup> However, as discussed previously, existing research on this topic uniformly indicates that pictures in unfamiliar emails significantly increase the likelihood of an email being delivered to spam, and thus the likelihood of the email not being opened.<sup>60</sup> Indeed, Section I.C presents an experiment I conducted showing that inserting one mock logo reduces the likelihood of an email being opened by 23.2 percent. The email I received from Plaid, Inc., once moved to my inbox, shows the video image that Plaid, Inc. told the court it would include. The settlement notice email states that "[y]ou can also click the video link to file your claim or to hear instructions on how to submit a claim," as shown in the following screenshot in the red box above the video thumbnail.<sup>61</sup>



<sup>&</sup>lt;sup>59</sup> See GOOGLE, Understanding Gmail's Spam Filters ("Gmail employs a number of AI-driven filters that determine what gets marked as spam."), <u>https://workspace.google.com/blog/identity-and-security/an-overview-of-gmails-spam-filters</u> (last visited December 3, 2023).

<sup>&</sup>lt;sup>60</sup> WENDY WILLARD, HTML: A BEGINNER'S GUIDE 376 (5th ed. 2013) ("Due to the proliferation of HTML email spam, the simple truth is that plain-text email is more likely to actually get to the reader. . . . [M]any email readers block images and attachments from unknown senders or suspected spammers."); *see also* Kalantari, *supra* note 54. <sup>61</sup> The red box was not part of the original email; I added it for emphasis.

Although the video could sincerely have been intended to "make it easy for Class Members to find information about the case,"<sup>62</sup> the parties' knowledge of email technology raises suspicions about their intent. Angeion, the firm retained by the defendant and named plaintiffs to implement notice, told the court that it took special care to ensure that notices would not be flagged as spam:

Angeion designs the email notice to avoid many common "red flags" that might otherwise cause a potential Class Member's spam filter to block or identify the email notice as spam. For instance, *Angeion does not include the Claim Form or Long Form Notice as an attachment to the email notice, because attachments are often interpreted by various Internet Service Providers ("ISP") as spam.* Rather, in accordance with industry best practices, Angeion includes a link to all operative documents so that Class Members can easily access this information.<sup>63</sup>

Angeion also promised to "target Class Members whose email notice could not be delivered" with banner advertising placed on "websites where members of the [class] are most likely to visit."<sup>64</sup>

Ironically, Angeion's assurance deepens suspicions that it included the video thumbnail to make it more likely that the notice goes to spam. As Angeion states, certain file attachments<sup>65</sup> are a "common 'red flag' that might . . . cause . . . spam filter[s] to . . . identify the email notice as spam."<sup>66</sup> But images are another red flag that is just as common.<sup>67</sup> It is difficult to believe that a class action claims administrator who has allegedly designed and implemented "hundreds of court-approved notice . . . programs, including some of the . . . most complex notice plans in recent history,"<sup>68</sup> and is sophisticated enough to develop targeted advertising for claimants who cannot be reached by email, is unaware of the fact that embedded images tend to increase the likelihood of emails being flagged as spam. Angeion's claim that it sincerely attempted to reach as many claimants as possible may be more plausible if its supplemental notice by online banner advertising would make up for the shortcomings of its email notification. But banners have a notoriously low likelihood of being clicked by the target audience—by some estimates, less than 0.3 percent.<sup>69</sup>

Of course, courts are not obligated to accept all proposed settlement notices. Courts reject proposed settlement notices if they fail to include relevant information<sup>70</sup> or if a notice would not reach a sufficiently high percentage of class members, even when the defendants and lead plaintiffs agree on the specific version of notice to be provided.<sup>71</sup> But courts' review of proposed settlement notices is limited to the text, regardless of whether a proposed notice would be disseminated by mail or email. Courts reviewing only the textual content of proposed settlement notices would be

- <sup>67</sup> Listík, Šedivý & Hlaváč, *supra* note 56 (images increase the likelihood of emails being flagged as spam).
- <sup>68</sup> In re Plaid, Inc., No. 4:20-CV-03056-DMR, Dkt. No. 139, at 1 (Aug. 6, 2021).
- <sup>69</sup> J. CRAIG ANDREWS & TERENCE A. SHIMP, ADVERTISING, PROMOTION, AND OTHER ASPECTS OF INTEGRATED MARKETING COMMUNICATIONS 277 (10th ed. 2017).

<sup>&</sup>lt;sup>62</sup> In re Plaid, Inc. Privacy Litigation, No. 4:20-CV-03056-DMR, Dkt. No. 135-2, at 25 (N.D. Cal. Aug. 5, 2021).

<sup>&</sup>lt;sup>63</sup> In re Plaid, Inc., No. 4:20-CV-03056-DMR, Dkt. No. 139, at 4 (Aug. 6, 2021) (italics added for emphasis).

<sup>&</sup>lt;sup>64</sup> *Id*. at 5, 6.

<sup>&</sup>lt;sup>65</sup> See Mamoun Alazab & Roderic Broadhurst, *The Role of Spam in Cybercrime: Data from the Australian Cybercrime Pilot Observatory*, in CYBERCRIME RISKS AND RESPONSES: EASTERN AND WESTERN PERSPECTIVES 111 (Russel G. Smith, Ray Chack-Chung Cheung & Laurie Yiu-Chung Lau eds. 2015) ("The majority of spam solutions block email attachments with the (.exe) file extension ....").

<sup>&</sup>lt;sup>66</sup> In re Plaid, Inc., No. 4:20-CV-03056-DMR, Dkt. No. 139, at 4 (Aug. 6, 2021).

<sup>&</sup>lt;sup>70</sup> See, e.g., SFBSC Mgmt., LLC, 944 F.3d at 1046.

<sup>&</sup>lt;sup>71</sup> See, e.g., Yates, 2020 WL 6447196, at \*5.

harmless if notice is disseminated only by mail, because there is not much the litigants can do to tamper with delivery as long as it is sent through U.S. mail.<sup>72</sup> But when notice is made by email, the extratextual features of email that courts do not review, appear not to understand, and leave to the discretion of the parties allow settlement notice emails to be designed so as to undermine notice.

In some cases, courts effectively rubber-stamp the extratextual design decisions of the claims administrator retained by the litigants. In a 2018 settlement against Wells Fargo, the court "approve[d], as to content and format," the proposed settlement notice with only two changes: that the mail notice include the class counsel's email address and state that the results of any mediation are not binding.<sup>73</sup> As for "the method of disseminating" the email notice, the court held that the method proposed by the litigants "is the best method of notice practicable under the circumstances and satisfies all requirements provided in Rule  $23(c)(2)(B) \dots$ "<sup>74</sup> The court cited three filings in approving the proposed notice: "the Motion [for approval], the Declaration of Shannon Wheatman, filed on April 20, 2017, and the Parties' Stipulation including ... mail[]... [and] email notice."<sup>75</sup>

While the court states that it approved the "content and format" of the proposed notice, it could not have reviewed any extratextual features because the three filings from the litigants cited by the court do not discuss any extratextual design features or their effects on the delivery of notice. The motion for approval says nothing about email notice.<sup>76</sup> The declaration by Shannon Wheatman, the president of the firm retained by the defendant and class counsel to implement notice,<sup>77</sup> states that "an email about the Settlement will be sent to potential Class Members who have provided a valid email address . . . . The email will provide a short overview of the Settlement and point Class Members to the Settlement website for more information, to review the Long Form Notice, or to file a claim."<sup>78</sup> The parties' stipulation states only that a notice will be emailed to consumers with known addresses,<sup>79</sup> and shows a text-only draft of the email<sup>80</sup> and a postcard notice.<sup>81</sup> Following preliminary approval, Wheatman filed another declaration updating the court on the notification process, which merely stated that email notices were sent without providing further information.<sup>82</sup>

Unsurprisingly, the court appeared to neglect the possibility of email notices being sent to spam. The court's approval of the settlement stated that email notice was "robust" because "Wells Fargo provided more than 100 million email notices to current and former Wells Fargo customers in two rounds of email notice, and will send more than 40 million additional notices in a third

<sup>77</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 109, at 2 (April 20, 2017).

<sup>&</sup>lt;sup>72</sup> See 18 U.S.C. § 1701 (prohibiting willful obstruction of mail delivery).

<sup>&</sup>lt;sup>73</sup> Jabbari et al. v. Wells Fargo & Co., No. 15-CV-02159-VC, 2017 WL 3478868, at 10 (N.D. Cal. July 8, 2017); see also Jabbari, No. 15-CV-02159-VC, 2018 WL 11024841, at \*1, \*2 (N.D. Cal. June 14, 2018) ("[The] long-form notice . . . was altered before distribution to make clear that mediation does not impose a binding result on the parties. . . . Also, . . . the revised long-form notice . . . was altered before distribution to include an appropriate email address for Class Counsel. . . . The Court finds that the Notice Plan, previously approved (as modified) by the Court in its Preliminary Approval Order, has been implemented accurately and fully.")

<sup>&</sup>lt;sup>74</sup> Jabbari, No. 15-CV-02159-VC, 2017 WL 3478868, at 11.

<sup>&</sup>lt;sup>75</sup> Id.

<sup>&</sup>lt;sup>76</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 101 (April 20, 2017).

<sup>&</sup>lt;sup>78</sup> *Id*. at 8.

<sup>&</sup>lt;sup>79</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 100, at 11, 22 (April 20, 2017).

<sup>&</sup>lt;sup>80</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 100-3, at 1-19 (April 20, 2017).

<sup>&</sup>lt;sup>81</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 100-4, at 1 (April 20, 2017).

<sup>&</sup>lt;sup>82</sup> Jabbari, No. 15-CV-02159-VC, Docket No. 183, at 3-4 (Jan. 19, 2018).

round."<sup>83</sup> The email notice the parties presented to the court for approval contained text only.<sup>84</sup> But the email notice that was actually disseminated to the claimants includes the company logo, which may explain why the notice was delivered to the spambox in my Gmail account. While the logo is blocked when the email is still in spam, it is revealed once the email is moved to the inbox:



This is not to say that the entire judiciary is oblivious of the risk of email notices being sent to spam. A guide published in 2010 by the Federal Judicial Center, a research arm of the federal courts,<sup>85</sup> advises courts to "require sophisticated design of the subject line, the sender, and the body of the message, to overcome SPAM filters and ensure readership."<sup>86</sup> But the guide does not say anything further about what that sophisticated design would require. Consequently, even when courts cite the Federal Judicial Center's warning against emails getting caught in spam filters, they use the warning as a justification to farm out the task of designing email notices to an expert: a party appointed by the litigants<sup>87</sup> which, as explained, is akin to having the fox guard the henhouse.

<sup>&</sup>lt;sup>83</sup> Jabbari, No. 15-CV-02159-VC, 2018 WL 11024841, at \*3 (N.D. Cal. June 14, 2018).

<sup>&</sup>lt;sup>84</sup> *Jabbari*, No. 15-CV-02159-VC, Dkt. No. 164, at 2, Dkt. No. 164-1, at 2-3 (June 27, 2017). <sup>85</sup> 28 U.S.C. § 620(b).

<sup>&</sup>lt;sup>86</sup> Fed. Jud. Ctr., *Judges' Class Action Notice and Claims Process Checklist and Plain Language Guide* 3 (2010), *available at* <u>https://www.fjc.gov/sites/default/files/2012/NotCheck.pdf</u> (last visited May 8, 2023).

<sup>&</sup>lt;sup>87</sup> Kaufman v. Am. Exp. Travel Related Servs., Inc., 283 F.R.D. 404, 408 (N.D. Ill. 2012) (the court citing the guide's statement that an "expert report may be advisable" and "propos[ing] the appointment of Dr. Shannon R. Wheatman" and inviting the parties "to respond to this suggestion or to propose an alternate expert with similar qualification.").

#### C. Experimental Evidence: How to Send Emails to Spamboxes

The preceding sections have shown that courts misperceive email as a faster and cheaper version of mail, that certain litigants have an incentive to exploit this misperception to undermine notice, and that those litigants appear to be acting on the incentive. But that discussion has not yet provided evidence of how effective this tactic actually is, beyond the examples of the cases I have cited and the settlement notices that were sent to my spambox. Section I.C provides that evidence, in the form of an experiment which sent 2,000 consumers a mock email notice. The experiment shows that including a mock logo reduced the likelihood of an email being opened by 23.2 percent.

To demonstrate that embedded images actually drive settlement notices to spamboxes at a low cost, I conducted an experiment emailing mock settlement notices to 2,000 actual consumers. 1,000 consumers received an email *with* a mock company logo, and 1,000 consumers received an otherwise identical email *without* the logo. Both the treatment and control emails were tracked to show whether the recipients opened them. Because the treatment email's sole difference from the control is an embedded image (the mock logo), the emails would have the same likelihood of being opened if not for the image. Thus, if recipients are less likely to open the treatment email than they are likely to open the control email, that result would support the inference that the treatment email was not opened because the mock company logo caused the treatment email to be flagged as spam.

The mock email notices were designed to look like an actual settlement notice as much as possible, so that a mock notice is as likely to be opened as a real notice if it lands in a recipient's inbox. The following three screenshots show an actual settlement notice email I received. The first screenshot shows the notice on the Gmail client on a PC, and the second screenshot shows the notice on an iPhone email client. The third screenshot shows the settlement notice after it is opened.

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In re: Zoom Video Communicati...

Reminder re Zoom Class Action Settlement Click here to view this message in a browser window.

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Electronic copy available at: https://ssrn.com/abstract=4523560



As these screenshots show, an unopened settlement notice in an email client communicates only three things: the sender (noreply@zoommeetingsclassaction.com), the subject, and the first few sentences of the email (the preview).<sup>88</sup> I designed my notices to mimic real notices in all three aspects. My mock notices were sent from noreply@tedgitclassaction.com, have a similar subject line, and mimic a real notice in the first few sentences. Because my study is about how parties can reduce the likelihood of notices being *opened*, the notice is designed to dispel the illusion of a real notice if and when it is opened—so that study participants would not think that they are involved in a real case. To that end, my mock settlement notices mimic only the first few dozen words of actual settlement emails (however many words that would appear in the preview). Once recipients open the mock notices, the recipients are informed that the notices are not real, to minimize the likelihood of any misunderstanding. The beginning of the mock settlement notice email reads:



<sup>88</sup> CHESTER BULLOCK & MARK POLLARD, SALESFORCE MARKETING CLOUD FOR DUMMIES Ch. 11 (2017) ("Browser size, email app, and subject line length can all be factors in how much preview text appears in the inbox.... [W]hereas the iOS Mail app can display approximately 90 characters of preview text, Windows Phone displays only about 40.").

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The part above the red line<sup>89</sup> indicates the part of the email that appears in the preview meaning that the part above the red line functions to maintain the illusion of a real settlement notice. The number of characters shown in an email preview varies, but 150 is a typical estimate. The part above the red line is 258 characters without spaces and 301 characters with spaces.<sup>90</sup> The treatment email is identical to the control email except that the control email has the following image, a mock company logo.<sup>91</sup> The image is embedded at the end of the email, not the beginning, to ensure that the preview is identical for the treatment and control emails. Because the image does not affect the email preview, embedding the image affects only the likelihood of the email getting sent to the spambox, not the likelihood of the recipient opening the email if it avoids the spam filter and lands in the inbox. The full text of the mock notice is included at the end of this Article, at the Appendix.



By naming the product at issue "tedgit," I also designed the mock notices to minimize the likelihood of misleading people who see the notices in their inbox but choose not to open them. If the mock notices referred to real products like smartphones or cars, the recipients may be misled into thinking that the products they use are defective. Such a perception may inflict mental distress on recipients or force them to waste time and money replacing or fixing those products. But, to my knowledge, no actual product is named "tedgit" and no product name resembles "tedgit."<sup>92</sup> As such, even if recipients think that the mock notices are real because they did not open the notices, the recipients are unlikely to think that they are in any actual danger from using a defective product.

All mock emails were tracked to indicate whether they were opened. Tracking works by attaching to emails a pixel (here, a tiny dot) which is so small that it is "invisible to the naked eye" and informs the sender when the recipient opens the email.<sup>93</sup> A pixel is technically an "image"— a ninety-sixth of an inch,<sup>94</sup> invisible image—meaning that enough tracking pixels *may* affect the chances of emails being flagged as spam.<sup>95</sup> But the pixel was attached to both the treatment and

<sup>&</sup>lt;sup>89</sup> The red line is not an image, because I entered it by repeatedly typing the "underscore" key on the keyboard.

<sup>&</sup>lt;sup>90</sup> My tests of the PC Gmail client, the PC Outlook client, the iPhone 13 Pro Max's email client, the iPhone 13 Pro Max's Outlook client, and the Samsung Galaxy Note20 Android phone's email client did not show more than the first 150 characters in the preview. I made the preview for my email notices to be 258 characters without spaces and 301 characters with spaces, because some sources state that Outlook 2013 showed "the first 255 characters (including spaces)" in email previews. JOAN LAMBERT & JOYCE COX, MICROSOFT OUTLOOK 2013 STEP BY STEP 108 (2013). <sup>91</sup> The image was embedded (as in, loaded using a preexisting link), instead of being attached as a file.

<sup>&</sup>lt;sup>92</sup> I originally chose the name "widget" because it is a commonly used term in economics to refer to a hypothetical product. *See* JOHN BLACK, NIGAR HASHIMZADE & GARETH MYLES, A DICTIONARY OF ECONOMICS 440 (2012) ("In economic texts the term widget is used as a generic word for a manufactured good."). But "widget" also refers to a graphical user interface in computing (like a window in Windows), so I use the term "tedgit" to avoid any confusion. *See* CHRIS MINNICK, CODING ALL-IN-ONE FOR DUMMIES 398 (2022) (defining widgets in smartphone apps).

<sup>&</sup>lt;sup>93</sup> RICHARD C. HANNA, SCOTT D. SWAIN & JASON SMITH, EMAIL MARKETING IN A DIGITAL WORLD: THE BASICS AND BEYOND 41 (2015) ("The main method for tracking email . . . is to insert an image . . . usually a single pixel . . . ."). Only the sender, and not the recipient, is aware that an email is being tracked.

<sup>&</sup>lt;sup>94</sup> See Shay Howe, Learn to Code HTML and CSS: Develop and Style Websites 50 (2014).

<sup>&</sup>lt;sup>95</sup> MANNY MEDINA, MAX ALTSCHULER & MARK KOSOGLOW, SALES ENGAGEMENT: HOW THE WORLD'S FASTEST GROWING COMPANIES ARE MODERNIZING SALES THROUGH HUMANIZATION AT SCALE 159 (2019) ("The more tracking pixels in your e-mail, the more likely your e-mail will be blocked.").

the control emails, meaning that whatever effect that a tracking pixel may have on the likelihood of an email getting flagged as spam would apply equally to the treatment and control emails. Thus, the only difference between the treatment and control emails in this experiment that affects the likelihood of an email being flagged as spam would be the mock company logo shown above.<sup>96</sup>

All participants in this experiment are U.S. residents who are 22 years of age or older. I recruited the participants using consumers' email addresses purchased from the California-based data broker and marketing firm Giant Partners.<sup>97</sup> As required by the Institutional Review Board, I sent consumers an email identifying myself and explaining that I am conducting an experiment testing the effect of an image on the likelihood of an email getting delivered to the spambox. The email explained that consenting consumers would receive an email with the subject line "Tedgit Class Action Settlement Notice" from the address "<u>noreply@tedgitclassaction.com</u>." Finally, the email asking for consent stated that I would track whether the mock settlement notice is opened, that participating consumers are not obligated to do anything further, and that I would destroy all information about a consumer if the consumer does not affirmatively consent. I continued to send out this recruitment email at random until I obtained a sample of 2,000 consenting consumers.

My original plan for this experiment was to conduct the experiment on consumers without warning them beforehand—that is, send the consumers a treatment or control email without asking for consent—so as to simulate a real class action settlement notice as closely as possible. The idea was to maintain the illusion of an actual settlement notice by not warning consumers beforehand, but simultaneously reduce the risk of misleading consumers into thinking of an actual product by having the mock settlement notices refer to a product called "tedgit." But the Institutional Review Board determined that affirmative consent must be obtained, and that participants must be told beforehand what the subject line of the mock settlement notice is and which email address it would come from, to prevent consumers from opening some different email which is actually malicious.

Informing the subjects of the study beforehand which email they would receive and from which address means that they could "whitelist" the mock settlement notice in advance, so that the notice is not flagged as spam.<sup>98</sup> This is obviously unlikely in real class actions, because most claimants are unlikely to be aware that a settlement is even occurring before they are notified. If the participants in this study whitelist the mock email notices, that would make the treatment email less likely to be flagged as spam compared to a real settlement notice. But the risk of whitelisting does not undermine this study. If anything, the fact that the participants may have whitelisted the mock notices improves the significance of the experiment results. The fact that the mock notices may have been whitelisted means that this experiment is understating the effect of an image on the chances of a real class action settlement notice being delivered to the spambox instead of the inbox.

<sup>&</sup>lt;sup>96</sup> Class action defendants could abuse tracking pixels to get their email notices sent to spam under benign pretenses for example, defendants might attach an excessively large number of tracking pixels to an email notice and tell the court that they are necessary to track how potential claimants interacted with the notice. The point here is that including a single tracking pixel in both the treatment and control emails did not affect the result of this particular experiment.
<sup>97</sup> Data Broker Registration for Giant Partners, Inc. (also DBA [doing business as] List Giant), available at https://oag.ca.gov/data-broker/registration/189904.

<sup>&</sup>lt;sup>98</sup> See JOHN SAMMONS & MICHAEL CROSS, THE BASICS OF CYBER SAFETY: COMPUTER AND MOBILE DEVICE SAFETY MADE EASY 82 (2016) ("Whitelist, which allows you to add email accounts and domains that should always be trusted, and never marked as SPAM.").

Finally, Giant Partners provided basic demographic information about the consumers whose email addresses I purchased. My experiment uses the demographic information as control variables. Giant Partners represents that it gathers such information from "more than 250 sources" including "public record compilations, . . . business credit and financial compilations, . . . utility and phone connections."<sup>99</sup> A Giant Partners employee informed me that the other sources include "telephone directories, credit bureaus, government and county courthouses, title companies, . . . Direct Mail, Telemarketing, . . . Sweepstakes participants, magazine subscribers & internet responders."<sup>100</sup> Giant Partners maintains a "95% accuracy guarantee" for its marketing data.<sup>101</sup> Table 1 shows demographic information organized into variables, and unique observations within each variable.

Variable Unique Observations		Percentage of Sample		
	\$0 to \$29,999	17.40		
	\$30,000 to \$49,999	9.90		
Annual	\$50,000 to \$74,999	15.00		
Income	\$75,000 to \$99,999	19.25		
	\$100,000 to \$149,999	22.55		
	\$150,000 or greater	15.90		
	Attended Vocational / Technical School	2.15		
Education	Completed High School	41.45		
Education	Completed College	45.00		
	Completed Graduate School	11.40		
	White	68.45		
Page	Black	13.00		
Race	Latino	12.30		
	Asian	6.25		
Sov	Female	55.85		
JEX	Male	44.15		
	Pacific	15.75		
	Mountain	18.10		
Division of	West North Central	11.00		
Division of Basidanaa	East North Central	10.60		
in the	Middle Atlantic	2.95		
$\frac{11}{102}$	New England	6.45		
0.5.	West South Central	7.45		
	East South Central	8.85		
	South Atlantic	18.85		

Table 1: Population Demographic Data

<sup>&</sup>lt;sup>99</sup> GIANT PARTNERS, *Database Marketing*, https://giantpartners.com/faq/ (last visited May 25, 2023).

<sup>&</sup>lt;sup>100</sup> LISTGIANT, Sales Leads that Your Reps Will Love, https://listgiant.com/sales-leads/ (last visited May 25, 2023).

<sup>&</sup>lt;sup>101</sup> E-mail from Zach Miller, Representative, Giant Partners, to author (June 6, 2023, 17:18 PST) (on file with author). <sup>102</sup> Giant Partners' database, as I purchased it, shows the *state* a consumer lives in, not the division. I reorganized state data into divisions, to avoid having to use fifty dummy variables (for the fifty states and D.C.) in my regression. When I say "division," I mean a "division" of the United States as defined by the Census Bureau. *See* Census Regions and Divisions of the United States, <u>https://www2.census.gov/geo/pdfs/maps-data/maps/reference/us\_regdiv.pdf</u>.

Variable	Unique Observations	Percentage of Sample		
	Democratic	42.25		
Political	Republican	43.25		
Affiliation	Independent	12.85		
	Other	1.65		
	Gmail	32.65		
	Yahoo!	22.95		
Email	Microsoft (MSN, Live, Hotmail, Outlook)	18.20		
Domain	Apple iCloud	4.85		
	AOL	10.15		
	Other	11.20		
N = 2,000. Minimum age = 22; Maximum age = 85. Median age = 45; Average age = 44.901.				

Table 1: Population Demographic Data (Continued)

Having obtained the information needed to conduct the experiment, I randomly assigned half of the sample each to the treatment and control groups and sent all consumers their assigned mock settlement emails. The 2,000 emails could not be sent at once, due to daily and hourly usage limitations on commercial email accounts.<sup>103</sup> To limit the effect that timing could have on the likelihood of the emails being opened, I sent the emails over ten weekdays in a two-week period. I assigned the 2,000 recipients randomly into ten subgroups and sent 200 emails per day. I avoided weekends and holidays (when email open rates tend to be low)<sup>104</sup> to avoid artificially boosting the results of my experiment. Each email was sent between 9am and 9:05am in the recipient's state of residence. For example, if a recipient lived in Pennsylvania, I sent the email between 9am and 9:05am Eastern Time. I recorded whether each email was opened seven days after it was sent.

Once the experiment was completed, I ran the following probit regression to test whether including a mock company logo in an email settlement notice reduces the likelihood of a recipient opening it. Because the only difference between the treatment and control emails is the company logo, the treatment being less likely to be opened would support the inference that the logo caused the treatment email to be flagged as spam. The main input variable is whether a mock email notice includes a logo (whether it is a treatment). The outcome variable is whether a recipient opened the mock settlement email. The coefficient estimate  $\beta_1$  is expected to be negative and significant.

*Pr*(*Opened* | *Treatment*)

 $= \Phi(\beta_0 + \beta_1 * Treatment + \beta_2 * EmailDomain + \beta_3 * Education + \beta_4 * Race + \beta_5 * Income + \beta_6 * Sex + \beta_7 * Party + \beta_8 * Age + \beta_9 * Residence)$ 

<sup>&</sup>lt;sup>103</sup> See, e.g., GOOGLE, Gmail Sending Limits in Google Workspace (listing various limits on the number of emails sent per day), <u>https://support.google.com/a/answer/166852?hl=en</u> (last visited May 25, 2023); GODADDY, Workspace Email Account Limitations ("200 per minute sending limitation as well as a 300 per hour sending limitation"), <u>https://www.godaddy.com/help/workspace-email-account-limitations-2949</u> (last visited May 25, 2023).

<sup>&</sup>lt;sup>104</sup> Eric Goldman, *The* Perkins v. LinkedIn *Class Action Settlement Notice Was Badly Bungled*, Forbes (Oct. 3, 2015) ("Weekends tend to have low open rates, so most marketers avoid them like the plague."), *available at* <u>https://www.forbes.com/sites/ericgoldman/2015/10/03/the-perkins-v-linkedin-class-action-settlement-notification-was-badly-bungled/.</u>

Variable Type / Name	Coefficient	Robust Standard Error	Marginal Effect (RSE)		
Main Input Variable ( $\beta_1$ ):	7058***	(1190)	<u>2323</u> ***		
Mock Company Logo	<u>/058</u> ****	(.1189)	(.0346)		
Email Domain ( $\beta_2$ )					
Gmail	.0252	(.0270)			
Yahoo	.0053	(.0279)			
Microsoft	.0308	(.0233)			
Apple iCloud	.0438	(.0388)			
AOL	.0057	(.0331)			
Education ( $\beta_3$ )					
High School	0870	(.1445)			
College	0899	(.1106)			
Graduate School	2573	(.1808)			
Race $(\beta_4)$					
Asian	.0095	(.1624)			
Black	0343	(.1803)			
Latino	.0982	(.1287)			
Income ( $\beta_5$ )					
\$30,000 to \$49,999	.0807	(.1553)			
\$50,000 to \$74,999	.0449	(.0442)			
\$75,000 to \$99,999	.0648	(.0849)			
\$100,000 to \$149,999	.0687	(.0777)			
\$150,000 or greater	.0313	(.0525)			
Partisanship ( $\beta_6$ )					
Democratic	.1026	(.2401)			
Republican	.0808	(.1902)			
Independent	.0028	(.1777)			
Sex $(\beta_7)$	0572	(.0511)			
Age $(\beta_8)$	.0002	(.0024)			
Region of Residence $(\beta_9)$		• · · · · · · · · · · ·			
Pacific	0583	(.1367)			
Mountain	0939	(.1402)			
West North Central	.0796	(.1559)			
East North Central	.0136	(.1840)			
New England	0397	(.2871)			
West South Central	.1102	(.1297)			
East South Central	.1040	(.1987)			
South Atlantic	0168	(.1374)			
Constant	2029	(.2442)			
N = 2,000. Standard errors clustered by email domain. Pseudo R <sup>2</sup> = .0598.					
Total open rate = 30.7 percent (614 / 2,000). $*(p < 0.05)$ ; $**(p < 0.01)$ ; $***(p < 0.001)$ .					

# <u>Table 2. Effect of a Company Logo on a Mock Settlement Email Being Opened</u><sup>105</sup> (Outcome Variable: Whether a Mock Settlement Email Notice Was Opened)

<sup>&</sup>lt;sup>105</sup> The dataset for this regression is available at my personal webpage at <u>https://www.yunsieg-kim.com/</u>.

As expected, including a mock logo has a significant negative effect on an email notice being opened.<sup>106</sup> As the marginal effects show, a logo makes an email 23.2 percent less likely to be opened, holding all else constant.<sup>107</sup> This indicates that class action defendants can make email notices much more likely to be sent to spam by doing just one thing that effectively costs nothing: throw in a single logo. As explained above, defendants have a superficially benign justification for including their company logo that they already appear to be using before courts, which is that including the company logo would make their notices appear more authentic to class members.<sup>108</sup>

Although the fact that including one logo makes an email 23.2 percent less likely to be opened is significant on its own, it also suggests how defendants could effectively *guarantee* that a settlement notice gets flagged as spam: include more images. "Using too many images can . . . trigger spam filters,"<sup>109</sup> and "[t]he more tracking pixels in your e-mail, the more likely your e-mail will be blocked."<sup>110</sup> As shown in Section I.A using an actual email notice I received, defendants could include a video image ostensibly intended to help the class members file claims. Defendants could include an excessive number of pixels and tell the judge that they are needed to track whether class members are actually opening the email notice and visiting the settlement website to file claims. The email would likely pass some sort of critical point after a certain number of images and pixels, where it would become highly unlikely for an email *not* to be delivered to the spambox.

# D. The Faster Horse Fallacy Perverts the Right to Notice into a Duty to Be Notified

The fact that courts misperceive email as a faster and cheaper equivalent of mail, and that this misperception is exploited to undermine notice, does not mean that email must be replaced by carrier pigeons. Computers present a significant a risk, as they can be hacked and the data within can be stolen. But society, quite rightly, has not shunned computers for typewriters and abacuses. We can benefit from the efficiency and versatility that computers offer, as long as we are aware of

<sup>&</sup>lt;sup>106</sup> Standard errors were clustered according to email domain because I suspected that the email-opening behavior of people who use the same email service may be more similar to each other compared to people who use another service. Clustering is employed when the researcher suspects "any sort of correlation between errors *within* each grouping," such as students in the same classroom behaving similarly to each other compared to students in another classroom. NICK HUNTINGTON-KLEIN, THE EFFECT: AN INTRODUCTION TO RESEARCH DESIGN AND CAUSALITY 239 (2021). Here, the email-opening behavior of Gmail users may be more similar to each other than to Yahoo users because Gmail's spam filter may work differently from Yahoo's. As clustered standard errors *reduce* the statistical significance of the coefficient estimate, clustering presents no risk of exaggerating the results of the experiment. *See* JOSHUA D. ANGRIST & JÖRN-STEFFEN PISCHKE, MOSTLY HARMLESS ECONOMETRICS: AN EMPIRICIST'S COMPANION 310 (2009) (showing "how much we overestimate precision [in a coefficient estimate] by ignoring intraclass correlation.").

<sup>&</sup>lt;sup>107</sup> See CHRISTOPHER H. ACHEN, THE STATISTICAL ANALYSIS OF QUASI-EXPERIMENTS 42 (2021) (explaining how marginal effects are calculated in a probit model and that "[i]n practice, a good rule of thumb is that . . . dividing a probit coefficient by 3 will give an approximation to its effect on the probability.").

<sup>&</sup>lt;sup>108</sup> See Silveira, 2021 WL 2403157, at \*8 ("In regard to the Notice's format, the Court previously expressed concern that the Notice was indistinguishable from junk mail because it buried the name 'M&T' in the text. The parties have since revised the formatting, and now the Notice prominently displays M&T's logo .... This change sufficiently addresses the Court's previous concerns."); see also In re Plaid, Inc. Privacy Litigation, No. 4:20-CV-03056-DMR, Dkt. No. 135-2, at 25 (N.D. Cal. Aug. 5, 2021) (party-appointed administrator claiming that it embedded a video thumbnail in its email notice to "make it easy for Class Members to find information about the case.").

<sup>&</sup>lt;sup>109</sup> See, e.g., IAN DODSON, THE ART OF DIGITAL MARKETING: THE DEFINITIVE GUIDE TO CREATING STRATEGIC, TARGETED, AND MEASURABLE ONLINE CAMPAIGNS 125 (2016) ("Using too many images ... can trigger spam filters."). <sup>110</sup> MEDINA, ALTSCHULER & KOSOGLOW, *supra* note 95.

the risks of computers and do what we can to minimize their occurrence. Put differently, the use of computers itself need not be avoided. Rather, using computers without sufficient awareness of the risks they present should be avoided. By the same token, email can also be useful for purposes of legal notice—as long as the people who use email are aware of the risks it presents. The problem with email, as Part I has so far demonstrated, is that email is used widely for a nontrivial purpose (legal notice) without due recognition of the pitfalls involved in using that tool for that purpose.

Courts might not be misperceiving email in the way they do, and email could have avoided being abused in the way it is, had scholars warned the profession about the potential misperceptions and misuses of email. As Professor Umberto Eco aptly put it, an essential service of intellectuals to society is to sound the alarm when something significant is happening but no one else seems to notice.<sup>111</sup> But instead of calling attention to the potential misperceptions of email, many scholars have argued for nothing short of its unfettered use in law for decades.<sup>112</sup> Some works even chastise reluctance to use email to such an extent as "clinging to" old habits due to "neophobia" and thus "sacrificing . . . the enforcement of a constitutional right,"<sup>113</sup> when in fact the exact opposite may be true—that using email without a proper understanding of it can undermine the right to notice.<sup>114</sup> The few existing works that recognize the risk of email notices going to spamboxes dismiss this concern by concluding that "parties providing notice [can] ensure that the email is not flagged as spam,"<sup>115</sup> even though, as shown, parties providing notice lack incentives to make any such effort.

When inaccurate scholarly advice dominates, no one should be surprised by the fact that email is misused in the legal context, despite the technology having existed for more than half a century.<sup>116</sup> It is difficult to expect judges to become technologically proficient on their own given that they were trained in law, not technology, and they are currently "older than [they have] been at any other time in the country's history."<sup>117</sup> It is similarly difficult to expect sophisticated parties to refrain from abusing email for their private gain, because they operate in a system whose prime directive is "[1]et justice be done—that is, for my client let justice be done—though the heavens fall."<sup>118</sup> But abuses of email in particular contexts such as class actions are not the most significant consequence of misperceptions of email caused by bad scholarly advice. More consequential is the fact that the misperception appears to have perverted the right to notice into a duty to be notified.

<sup>&</sup>lt;sup>111</sup> Umberto Eco, *Il primo dovere degli Intellettuali. Stare ziti quando non servono a nulla, in* LA BUSTINA DI MINERVA 1990-2000, at 361 (2020) ("C'è solo un caso in cui l'intellettuale ha una funzione rispetto a eventi in corso. Quando sta accadendo qualcosa di grave e nessuno se ne accorge. Solo in quei casi un suo appello può servire come allarme."). <sup>112</sup> *See, e.g.*, Mingus, *supra* note 28, at 90 ("[E]-mail notice may actually be better than notice by traditional mail. Because e-mail notice would be much cheaper than notice by first-class mail, cost will no longer be an obstacle . . . . "); Walters, *supra* note 38 ("[E]mail . . . [can] allow members of the class to communicate with the class attorneys directly and instantly. In such a situation, a class member is potentially more likely to . . . provide contact information for any future notices regarding the lawsuit. . . . While technology and the ability to send notice in better ways moves forward, many courts continue to look backward and adhere to . . . notice that [is] technologically outdated . . . . When the time comes that a future technology is sufficiently ripe to allow the courts 'under the circumstances' to harness its superior advancements for the improvement of the best notice practicable, the judiciary must stand ready to respond."). <sup>113</sup> Bartholomew, *supra* note 8, at 223-24, 237.

<sup>&</sup>lt;sup>114</sup> See supra Sections I.A to I.C.

<sup>&</sup>lt;sup>115</sup> Alexander W. Aiken, Note, *Class Action Notice in the Digital Age*, 165 U. PA. L. REV. 967, 985 (2017).

<sup>&</sup>lt;sup>116</sup> See JONES, supra note 22 at 175.

<sup>&</sup>lt;sup>117</sup> Francis X. Shen, *Aging Judges*, 81 OHIO ST. L.J. 235, 237 (2020); *see id*. (average age of federal judges is 69).

<sup>&</sup>lt;sup>118</sup> MONROE H. FREEDMAN, LAWYERS' ETHICS IN AN ADVERSARY SYSTEM 9 (1975).

To show that a misperception of email as faster and cheaper mail perverts the right to notice into a duty to be notified, it must first be established that this misperception of email affects more contexts than just class action settlements. Class actions can undoubtedly be emotionally and financially significant to the parties involved; for example, one of the most contentious class action settlements in history involved a company that allegedly afflicted people with "diseases caused by asbestos: mesothelioma, lung cancer, . . . [and] severe breathing impairment."<sup>119</sup> But other class action cases may not necessarily attract the sustained attention of the public because "[m]ost class action settlements yield per-plaintiff payments that are small, a few hundred dollars or less."<sup>120</sup> Whether most Americans are affected by class actions has not affected the purpose of this Article so far, which was to show how the faster horse fallacy operates and that it distorts perceptions of a technology as familiar as email. But the claim that a misperception of email resulting from the faster horse fallacy perverts the right to notice *generally* requires more examples than class actions.

Indeed, misperceptions of email caused by the faster horse fallacy can affect legal notice well beyond class actions. The faster horse fallacy warping the legal profession's view of email can undermine notice in arbitration, thus affecting a large share of consumer contracts. "[O]ver 97% [of consumers] report having opened an account with a company that requires . . . binding arbitration," such as Netflix.<sup>121</sup> The American Arbitration Association's consumer arbitration rules, "which are the rules most commonly selected by businesses,"<sup>122</sup> permit the "AAA, the arbitrator, and the parties" to use email "to give the notices required by these rules,"<sup>123</sup> including the initiation of proceedings.<sup>124</sup> Because the rules are silent on how the email notices must be designed, parties could profit from abusing email notice. For example, a party could win by default by sending the notice initiating proceedings to the spambox, claiming to have made adequate notice, and invoking caselaw which holds that ignoring arbitration proceedings does not preclude an adverse award.<sup>125</sup>

Misperceptions of email caused by the faster horse fallacy can also affect access to public services, which every citizen may need at some point in life. In 2023, the Federal Communications Commission ruled that permitting the Department of Health and Human Services to "make . . . artificial voice calls," "send autodialed text messages," or "email" would "ensure that millions of Americans can receive the information they need to maintain enrollment in Medicaid and other governmental health care programs."<sup>126</sup> But the fact that notice is made electronically does not "ensure" receipt. Part I has explained that email can be delivered to spamboxes without generating a returned-as-undeliverable message, thus leaving courts to assume incorrectly that it was received.

<sup>&</sup>lt;sup>119</sup> Koniak, *supra* note 49, at 1052.

 <sup>&</sup>lt;sup>120</sup> Charles Silver & Lynn Baker, *I Cut, You Choose: The Role of Plaintiffs' Counsel in Allocating Settlement Proceeds*,
 84 VA. L. REV. 1465, 1513 (1998).

<sup>&</sup>lt;sup>121</sup> Roseanna Sommers, *What Do Consumers Understand About Predispute Arbitration Agreements? An Empirical Investigation* 1 (2023), *available at* <u>https://papers.ssrn.com/sol3/papers.cfm?abstract\_id=4521064</u>.

 <sup>&</sup>lt;sup>122</sup> Ryan Miller, Next-Gen Arbitration: An Empirical Study of How Arbitration Agreements in Consumer Form Contracts Have Changed After Concepcion and American Express, 32 GEO. J. LEGAL ETHICS 793, 826 (2019).
 <sup>123</sup> Consumer Arbitration Rules of the American Arbitration Association Rules 52(a) & 52(b), available at https://adr.org/sites/default/files/Consumer% 20Rules.pdf.

<sup>&</sup>lt;sup>124</sup> *Id.* at Rule 52(a).

 <sup>&</sup>lt;sup>125</sup> See, e.g., Merch. Cash & Cap., LLC v. Jang Hwan Ko, No. 14 CIV. 659 KPF, 2015 WL 3822836, at \*1 (S.D.N.Y. June 19, 2015) (upholding award against defendant who did not respond to arbitrator's notifications).
 <sup>126</sup> Federal Communications Commission, *Declaratory Ruling* ¶¶ 1, 24 (Jan. 23, 2023), *available at* https://docs.fcc.gov/public/attachments/DA-23-62A1.pdf.

Automated calls and texts both have their analogues of spam filters, which could frustrate notice for calls and texts even more effectively than spamboxes do for email. Cell phone carriers prevent what they deem to be junk calls and texts from ever reaching the recipients,<sup>127</sup> whereas legitimate emails that were flagged as spam can theoretically be read by recipients who check the spambox.<sup>128</sup>

Of course, unlike unscrupulous litigants attempting to frustrate notice for private gain, the government would not deliberately rig any electronic notice to go to its respective version of the spambox.<sup>129</sup> But, regardless of the intentionality of electronic notice being delivered to spamboxes, the continued occurrence of that phenomenon would pervert the right to notice into a duty to keep oneself notified. In a regime where mail is the primary means of notice or email is used correctly for purposes of notice, the sender has a duty to notify and the intended recipient has the right to be notified. That is, the initial act of sending out the notice would not be enough to satisfy the sender's duty to notify. The sender would be required to make reasonable, continued efforts to increase the chances of actual receipt of notice, such as resending returned mail notices to other addresses, and the recipient's right to notice would not be deemed vindicated without such efforts.<sup>130</sup> In a regime where courts correctly understand the risk of using email for notice, the sender would have to make similar efforts—for example, tracking email notices to confirm whether it was actually opened.

But, in the status quo, courts do not appreciate the risk of using email for notice because they assume that notice has been made if it is not returned to sender, even though emails sent to spam are not returned to the sender. Thus, a sender's "duty to notify" in the status quo appears to consist only of the initial act of sending the email notice. Thereafter, would-be recipients of notice have a duty to keep themselves notified by, for example, salvaging email from the spambox before it is automatically deleted.<sup>131</sup> Indications that would-be recipients are expected to keep themselves notified abound in various contexts. This Article cited a court which found that a claimant's failure to read email sent to spam was due to "bad luck or [the claimant's] decision."<sup>132</sup> Lawyers are advised to "check [their] spam box daily," lest they "miss an important message . . . that affects a brief" they are completing.<sup>133</sup> While missing the opportunity to object to a settlement or the odd email from the boss might not lead to grave harm, missing a notice that would enable the recipient to stay enrolled in Medicaid<sup>134</sup> or to lawfully enter the United States<sup>135</sup> would be a different matter.

<sup>&</sup>lt;sup>127</sup> See VERIZON, Verizon Puts More Tools in Place to Help Protect Customers from Unwanted Spam Texts ("How Verizon helps prevent spam texts from ever reaching customers"), https://www.verizon.com/about/news/verizon-more-tools-protect-customers-unwanted-spam-texts (last visited May 17, 2023); AT&T CONNECTS, We're Fighting Back Against Text Spam. Here's What You Can Do, Too., ("Our strong network defenses . . . are working to prevent text spam around the clock, even when you don't see it"), https://www.attconnects.com/were-fighting-back-against-text-spam-heres-what-you-can-do-too/ (last visited May 17, 2023).

<sup>&</sup>lt;sup>128</sup> TRAUTZ & PINNINGTON, *supra* note 44 at 88 (advising lawyers to check spamboxes frequently for important emails). <sup>129</sup> *Cf. United States v. Chem. Found.*, 272 U.S. 1, 14–15 (1926) ("[Under t]he presumption of regularity, . . . in the absence of clear evidence to the contrary, courts presume that they have properly discharged their official duties."). <sup>130</sup> *See, e.g., Karic v. Major Auto. Companies, Inc.*, 2016 WL 1745037, at \*3 (E.D.N.Y. Apr. 27, 2016); *Velazquez v. Int'l Marine & Indus. Applicators, LLC*, 2018 WL 828199, at \*3 (S.D. Cal. Feb. 9, 2018).

<sup>&</sup>lt;sup>131</sup> See APPLE, supra note 43 and accompanying text (mail in spamboxes deleted automatically after thirty days).

<sup>&</sup>lt;sup>132</sup> Cohorst, No. 3:10-CV-2666-JM-BGS, Dkt. No. 58-2, at 19.

<sup>&</sup>lt;sup>133</sup> TRAUTZ & PINNINGTON, *supra* note 44 at 88.

<sup>&</sup>lt;sup>134</sup> See Federal Communications Commission, supra note 126.

<sup>&</sup>lt;sup>135</sup> See, e.g., Patel v. Cuccinelli, 2020 WL 13660282, at \*1 n.1 (N.D. Ga. June 24, 2020) (Citizenship and Immigration Services advised immigration petitioner to "check the status of his case on their website" and later denied the petitioner's petition as abandoned, after failing to update him in a timely manner).

One could think that there is nothing wrong with changing the right to notice into a duty to keep oneself notified. According to this reasoning, those who failed to receive notice because they were not sufficiently cognizant of the possibility of a notice coming their way (for example, people who do not check their spamboxes regularly) slept on their rights, and those who do should not be protected.<sup>136</sup> A reader could think that the duty to keep oneself notified becomes even stronger for citizens who have a reason to expect notice in the near future. That is, people who failed to keep themselves notified about class action settlements (which people typically do not have a reason to expect to be involved in) may be excused, whereas applicants for immigrant visas have a strong duty to keep themselves notified because they created their own reason to expect to be notified.

This reasoning is undoubtedly persuasive to a degree, if for no other reason than that this is often how things actually work. If I were applying for a visa in the hopes of making a life in the United States, I would do everything in my power to keep myself notified because my failure to do so would be to my own detriment, something that international students likely know too well.<sup>137</sup> I would be similarly vigilant in looking out for notices regarding anything else I want or need, be it a job or Medicaid enrollment. As the Koreans say, it is the thirsty person who must dig the well.

Nevertheless, it should not be the *official* position of the legal system that the right to notice is in reality a duty to keep oneself notified. A court should not be able to tell people that, if a notice came to their spambox but they "never responded, . . . that's . . . their bad luck or their decision."<sup>138</sup> If that is how things work, the law should work to change it as much as practicable. This is because not everyone has the resources to fulfill this "duty" to be notified. Applicants for a visa reserved for generous investors are likely to have the resources needed to spend hours obsessively checking the spambox, days waiting on an agency hotline, and even years suing the United States when an application is denied.<sup>139</sup> In contrast, Medicaid enrollees waiting for a notice that would keep them enrolled are unlikely to have the same kinds of resources. When the duty to keep oneself notified incurs significant costs, it is difficult to reconcile the position that the right to notice should be a duty to keep oneself notified, and the position that public services should be available to anyone and everyone who qualifies—unless the qualifications include the ability to keep oneself notified.

The irony here is that people might not be intentionally trying to change the right to notice into a duty to keep oneself notified, but that it may be happening because of the faster horse fallacy. The government clearly intended to help people keep Medicaid by using electronic notice, in the belief that electronic notice would make delivery of notice more likely.<sup>140</sup> That belief relies on the assumption that electronic notice, including email, is a faster, cheaper, and more reliable equivalent of mail. But electronic notice may reduce efficacy of notice, increase the cost of receiving notice, and ultimately pervert the right to notice into a duty to be notified, due to the existence of the spambox. In such an environment, the less faith one has in the government and other senders of notice to ensure proper delivery of notice, the more likely one would be to actually receive notice.

<sup>&</sup>lt;sup>136</sup> Cf. MARTIN DIXON, MODERN LAND LAW 486 n.77 (13th ed. 2023) ("[S]leeping on one's rights deprives a person of those rights.").

<sup>&</sup>lt;sup>137</sup> See Erica L. Green, Visa Delays at Backlogged Immigration Service Strand International Students, N.Y. TIMES (June 16, 2019), available at <u>https://www.nytimes.com/2019/06/16/us/politics/visas-international-students.html</u>.

<sup>&</sup>lt;sup>138</sup> Cohorst, No. 3:10-CV-2666-JM-BGS, Dkt. No. 58-2, at 19.

<sup>&</sup>lt;sup>139</sup> Patel, 2020 WL 13660282, at \*1.

<sup>&</sup>lt;sup>140</sup> Federal Communications Commission, *supra* note 126.

### II. THE LONG ARM OF THE FASTER HORSE FALLACY

Part I showed how the legal system misunderstands email as faster and cheaper mail, and described the consequences of that misperception on notice in class actions, arbitration, and access to public services. Part I focused on email, which has existed for more than half a century,<sup>141</sup> to show that a technology need not be on the cutting edge to be distorted by the faster horse fallacy. But the faster horse fallacy also distorts perceptions of cutting-edge technology. As of the time of writing, a popular perception in legal scholarship is that AI will be a faster, cheaper, and better version of lawyers, if it is not already.<sup>142</sup> The distorting effect of the faster horse fallacy on views of cutting-edge technology is consequential because, as discussed in the introduction, lawyers are increasingly being required to use complex technology<sup>143</sup> and regulate how the rest of society uses such technology.<sup>144</sup> Part II demonstrates that a misperception of AI-assisted discovery tools as a faster and cheaper version of humans can distort discovery, and thus litigation results, and that a misperception of electric vehicles as cleaner versions of gasoline cars can increase traffic fatalities.

#### A. Discovery by Artificial Intelligence Can Distort Litigation Results

Just as courts misperceive email as faster and cheaper mail despite problems unique to email, scholars misunderstand AI-assisted tools as faster and cheaper equivalents of manual human review, despite problems unique to AI that generate new costs. Professors David Engstrom and Jonah Gelbach argue that "well-implemented TAR [technology-assisted review] tools" could conduct discovery "at a fraction of the cost" including "attorney time."<sup>145</sup> Engstrom and Gelbach also describe TAR tools as "almost certainly better than humans in precision," in terms of picking out documents "that are in fact relevant" to the case.<sup>146</sup> The authors argue that the faster, cheaper, and better discovery enabled by TAR would thus alter "foundational aspects" of civil litigation.<sup>147</sup> "[A]symmetric litigation costs" between litigants of different sophistication would "fade as new and powerful e-discovery tools propagate,"<sup>148</sup> thereby "drain[ing] the proportionality constraints built into federal and state civil procedure rules of much of their importance."<sup>149</sup> This cheaper and more precise discovery could even alter plausibility pleading<sup>150</sup> and the work product doctrine.<sup>151</sup>

But the TAR tools that Engstrom and Gelbach expect will, or already do, leave humans in the dust have a problem that humans do not: lack of intelligence. TAR tools do not actually conduct

<sup>&</sup>lt;sup>141</sup> See JONES, supra note 22 at 175.

<sup>&</sup>lt;sup>142</sup> See, e.g., Iantha M. Haight, Digital Natives, Techno-Transplants: Framing Minimum Technology Standards for Law School Graduates, 44 J. LEGAL PROF. 175, 185 (2020) ("If lawyers do not become more sophisticated users of technology, they will lose work to artificial intelligence ....").

<sup>&</sup>lt;sup>143</sup> See, e.g., Kevin D. Ashley, *Teaching Law and Digital Age Legal Practice with an AI and Law Seminar*, 88 CHI.-KENT L. REV. 783, 828 (2013) ("Corporate and governmental clients will soon demand e-discovery tools, and these tools will not only be permitted, but required by the professional standard of care.").

<sup>&</sup>lt;sup>144</sup> See supra notes 1-3 and accompanying text.

<sup>&</sup>lt;sup>145</sup> David Freeman Engstrom & Jonah B. Gelbach, *Legal Tech, Civil Procedure, and the Future of Adversarialism*, 169 U. PA. L. REV. 1001, 1053 (2021).

<sup>&</sup>lt;sup>146</sup> *Id.* at 1052.

<sup>&</sup>lt;sup>147</sup> *Id.* at 1005.

 $<sup>^{148}</sup>$  *Id*.

<sup>&</sup>lt;sup>149</sup> *Id.* at 1051.

<sup>&</sup>lt;sup>150</sup> *Id.* at 1056-59. <sup>151</sup> *Id.* at 1080-86.

discovery as a lawyer doing discovery manually would: learn the issues in play, understand what a discoverable document says, and determine whether a discoverable document is relevant to the issues in play. The TAR tool's role in discovery begins only after a human has already done these things. The user feeds the TAR tool a sample set of documents that she has confirmed are relevant (called the "seed set"), and orders the tool to pick out all documents in the universe of discoverable documents that look like—as in, identical or say similar things as—the seed set.<sup>152</sup> Although a user can train TAR tools to become more precise at retrieving documents that resemble the seed set,<sup>153</sup> the fact remains that TAR tools do not determine whether a document is relevant. They determine whether a discoverable document looks like the document that the user already defined as relevant.

This means that a TAR tool would perceive relevant documents as irrelevant, if those documents fall outside the definition of relevance set by the user. Put differently, even if there is a needle in the haystack, a TAR tool would say that there is none if the user does not expect to find any. Thus, overreliance on TAR tools would systematically distort discovery and litigation results by confirming preexisting expectations. For illustration, assume a products liability case in federal court which both parties expect to be resolved on the merits. The parties would look for evidence on whether the product at issue is defective. Assuming for the sake of exposition that both parties use TAR tools, the parties' goal is to minimize the tools' bias and variance, in the parlance of machine learning.<sup>154</sup> The following diagrams explain what that means here better than words do:



<sup>&</sup>lt;sup>152</sup> See id. at 1017 ("[L]awyers first perform manual review of a subset of documents . . . called a 'seed set' . . . to provide the 'labeled' data upon which supervised machine learning tools rely.").

<sup>&</sup>lt;sup>153</sup> See id. (human users review TAR tools' output and modify seed sets "as the system iterates toward a best model"). <sup>154</sup> TANYA KOLOSOVA & SAMUEL BERESTIZHEVSKY, SUPERVISED MACHINE LEARNING: OPTIMIZATION FRAMEWORK AND APPLICATIONS WITH SAS AND R 20 (2020) ("The bias is an error caused by wrong assumptions in the learning algorithm. . . . The variance is an error produced from variations in the sensitivity metric in response to small fluctuations in the training sets.... The bias-variance trade-off is a central problem in supervised [machine] learning.").

Assuming arguendo that the TAR tools in this hypothetical retrieve every document that is relevant to whether the product at issue is defective, overreliance on TAR can still distort discovery and litigation results. This is because the parties' expectation that the case will be resolved on the merits can be wrong, as expectations in law practice often are.<sup>155</sup> Often, the parties and even the court fail to notice outcome-determinative issues that are unrelated to the merits, sometimes until after an entire trial is over—such as lack of jurisdiction.<sup>156</sup> What if our hypothetical case in federal court lacks subject-matter jurisdiction? If the parties rely solely on TAR tools for discovery in the belief that TAR tools are "almost certainly better than humans" in picking out documents "that are in fact relevant" to the case,<sup>157</sup> discovery would not produce any documents that point to the lack of jurisdiction because the TAR tools would operate assuming that those documents are irrelevant. As shown in the following diagram, these erroneous discovery results would reinforce the parties' original, incorrect expectations that the case will turn on whether the product at issue is defective:



TAR tools warping discovery outcomes in this manner creates two types of costs. The first, which would be externalized to society, is incorrect litigation results. In the hypothetical discussed above, overconfidence in TAR led to the parties neglecting a jurisdictional defect, which made a court hear a case it should not have. The second, which litigants would internalize, would occur when parties learn that TAR tools can incorrectly mark relevant documents as irrelevant. Knowing this, litigants would likely conduct manual human review of documents that TAR tools reviewed already, creating costs from repeat review. This cost is akin to a well-known cost of giving work to interns or other new employees: veteran employees may have to set their own obligations aside "to redo interns' work."<sup>158</sup> The existence of the double-checking cost in not only human review<sup>159</sup> but also TAR is a reason to be skeptical of Engstrom and Gelbach's claim that TAR would cut discovery cost including attorney time so drastically as to upend multiple foundational rules.<sup>160</sup>

<sup>&</sup>lt;sup>155</sup> See, e.g., U.S. v. Torres, 926 F.2d 321, 326-27 (3d Cir. 1991) (permitting defendant to withdraw guilty plea when an unexpected legal issue affected the length of the sentence).

<sup>&</sup>lt;sup>156</sup> See, e.g., Thermoset Corp. v. Bldg. Materials Corp. of Am., 2015 WL 11197750, at \*1 (S.D. Fla. Apr. 9, 2015) (holding that plaintiffs failed to establish defect in the products at issue and granting summary judgment in favor of defendants), vacated and remanded, 849 F.3d 1313 (11th Cir. 2017) (reversing for lack of diversity jurisdiction). <sup>157</sup> Engstrom & Gelbach, *supra* note 145, at 1052.

<sup>&</sup>lt;sup>158</sup> Chris J. Perniciaro, Comment, *An Emerging Liability: Managing FLSA Exposure from Internship Programs in the Private Sector*, 65 MERCER L. REV. 1131, 1164 (2014).

<sup>&</sup>lt;sup>159</sup> See, e.g., In re Grand Jury Investigation, 142 F.R.D. 276, 277 (M.D.N.C. 1992) ("a senior attorney 'double checked' the work of those assisting . . . to make certain that privileged documents would not be produced to the government."). <sup>160</sup> See supra notes 147-51 and accompanying discussion.

Moreover, the risk of error that TAR creates by reinforcing existing expectations is far less likely to occur in human-centric review because, unlike TAR tools, humans can adjust expectations as conditions change. Assume again that the litigants in our hypothetical begin discovery without suspecting jurisdictional defects, but they lack TAR tools. Human review would take longer to wade through the entire universe of discoverable documents compared to TAR tools. But unlike TAR tools, which merely confirm whether a discoverable document looks like another document that they have been told are relevant, humans use intelligence to determine for themselves whether a document is relevant. Thus, once a lawyer encounters documents showing the lack of jurisdiction, she would likely realize that they are relevant<sup>161</sup>—even though she began discovery looking only for documents showing product defect, not jurisdictional defect. In contrast, TAR would reinforce the initial, erroneous expectation that no jurisdictional defect exists, because TAR tools could not autonomously change the initial assumption that any document not about the merits is irrelevant.

Engstrom and Gelbach's presentation of TAR tools do not account for such risks unique to TAR tools. On the contrary, Engstrom and Gelbach argue that TAR could reduce discovery costs for all litigants to such a significant extent that TAR tools would disrupt "foundational" aspects of litigation.<sup>162</sup> Engstrom and Gelbach predict, among other things, that the cost savings from TAR tools would "destabilize[]... plausibility pleading" by alleviating information asymmetries among litigants, "drain the proportionality constraints built into ... civil procedure rules of much of their importance" by enabling less well-funded parties to conduct extensive and sophisticated discovery, and "place increasing pressure on ... the work product doctrine" to reflect the increasing centrality of TAR and other legal tech tools in modern discovery practice.<sup>163</sup> Many other scholars, despite not making such predictions, assume that TAR tools would reduce costs compared to traditional modes of discovery, without accounting for the problems unique to TAR tools described above.<sup>164</sup>

Perhaps Engstrom and Gelbach's boldest prediction is that TAR tools would "destabilize . . . plausibility pleading"<sup>165</sup> by alleviating one of its most critical downsides, the so-called paradox of pleading. As scholars have documented extensively, the information that plaintiffs need to survive pleading is often held by the defendants.<sup>166</sup> Therefore, plaintiffs must "make costly investments in pre-filing investigation to avoid dismissal,"<sup>167</sup> thus creating a large asymmetry in discovery costs. According to Engstrom and Gelbach, TAR tools "will substantially narrow asymmetric discovery costs because a prime source of those [information and cost] asymmetries—review of documents for relevance and privilege—is the discovery cost that is most directly abated by TAR [tools]."<sup>168</sup>

<sup>&</sup>lt;sup>161</sup> *Cf. Ohio Valley Env't Coal., Inc. v. Patriot Coal Corp.*, 2011 WL 6101921, at \*7 (S.D.W. Va. Dec. 7, 2011) ("Plaintiffs' original claims . . . were dismissed by stipulation of the parties after discovery revealed that the outfalls on that permit were administratively deleted, thereby depriving the Court of subject matter jurisdiction").

<sup>&</sup>lt;sup>162</sup> Engstrom & Gelbach, *supra* note 145 at 1005.

<sup>&</sup>lt;sup>163</sup> *Id.* at 1006, 1051, 1076.

<sup>&</sup>lt;sup>164</sup> See, e.g., KURT WATKINS & RACHEL E. SIMON, AI and the Young Attorney What to Prepare for and How to Prepare, 11 LANDSLIDE 22, 24 (2019) ("Despite cutting down the attorney hours necessary to review the discovery, the first ediscovery . . . software still required significant time and expense at the beginning and end of the process. E-discovery tools now . . . utilize machine learning . . . [to] produce far more reliable . . . results . . . with much less human input."). <sup>165</sup> Engstrom & Gelbach, *supra* note 145 at 1006.

<sup>&</sup>lt;sup>166</sup> See, e.g., Rakesh N. Kilaru, Comment, *The New Rule 12(b)(6):* Twombly, Iqbal, *and the Paradox of Pleading*, 62 STAN. L. REV. 905 (2010).

<sup>&</sup>lt;sup>167</sup> Engstrom & Gelbach, *supra* note 145 at 1056.

<sup>&</sup>lt;sup>168</sup> *Id.* at 1057-58.

The systemic error from TAR tools undermines the prediction that they will alleviate the pleading paradox, because this prediction assumes that TAR will deliver the *correct* information that plaintiffs need to survive pleading and eventually win on the merits. As shown, TAR tools as presented by Engstrom and Gelbach can retrieve documents that may seem helpful at first sight, but cause litigants to make arguments that turn out to be legally futile—such as arguments on the merits despite a lack of subject-matter jurisdiction. If TAR tools used for pre-filing investigation retrieve evidence which helps plaintiffs survive pleading but causes their complaint to be thrown out after pleading, TAR tools would not have alleviated any information asymmetry because they gave the plaintiffs unhelpful information. TAR tools would also not have alleviated asymmetries in cost because they would have forced plaintiffs to incur a significant cost by trying a futile case. Therefore, in this scenario, TAR tools would have actually exacerbated the paradox of pleading.

To further understand how TAR tools can exacerbate the paradox, consider a phenomenon which causes plaintiffs to sue in a way which guarantees that they will lose for incorrect choice of law.<sup>169</sup> A plaintiff, whose knowledge of a tort committed against her is otherwise complete, does not know which state law governs her case.<sup>170</sup> She suspects that New Jersey law governs and conducts a pre-filing investigation using TAR tools, which retrieves evidence that she expects to find: contacts with New Jersey. Because the plaintiff's knowledge of the tort is otherwise accurate, she makes plausible allegations of fact which enables her complaint to survive pleading. The court applies New Jersey law in resolving motions to dismiss because, consistent with prevailing federal practice, the court based its choice of law decision on the allegations of fact in the complaint.<sup>171</sup>

But after the pleading stage, discovery reveals that New Jersey law does not apply because the case has more contacts with Japan, forcing the court to throw out the complaint for incorrect choice of law after years of pre-trial litigation.<sup>172</sup> Existing scholarship has shown how defendants can abuse plaintiffs' incorrect expectations about the applicable choice of law to mislead them into suing under circumstances where they are guaranteed to lose.<sup>173</sup> 100 percent "precise" TAR tools, as shown above, could reinforce plaintiffs' incorrect expectations by only retrieving evidence that conforms with those expectations.<sup>174</sup> By exacerbating information and cost asymmetries between litigants, TAR tools would have worsened the paradox of pleading, hence undermining Engstrom and Gelbach's prediction that TAR would "destabilize" the foundations of plausibility pleading.<sup>175</sup>

The systemic error from TAR tools also undermines the prediction that they would render proportionality concerns in discovery effectively obsolete. As Engstrom and Gelbach note, Rule 26(b)(1) of the Federal Rules of Civil Procedure, as well as many state rules modeled on the federal rule, "impos[e] proportionality constraints on discovery," including the requirement that discovery

<sup>&</sup>lt;sup>169</sup> Yunsieg P. Kim, Conflict of Laws for the Age of Cybertorts: A Game-Theoretic Study of Corporate Profiteering from Choice of Law Loopholes and Interstate Torts, 46 B.Y.U. L. REV. 329 (2020).

<sup>&</sup>lt;sup>170</sup> *Id.* at 332-33 ("Apparently unaware that the alleged tort occurred in Japan, the plaintiffs sued under the law of New Jersey.") (citing *Maniscalco v. Brother Int'l (USA) Corp.*, 709 F.3d 202, 204 (3d Cir. 2013)).

<sup>&</sup>lt;sup>171</sup> *Id.* at 373 ("Federal courts predominantly address motions to dismiss and then conduct discovery before resolving choice of law issues, or resolve choice of law issues using factual allegations in the complaint."). <sup>172</sup> *Id.* at 332-33.

<sup>&</sup>lt;sup>173</sup> Id.

<sup>&</sup>lt;sup>174</sup> See supra notes 155-57 and accompanying discussion.

<sup>&</sup>lt;sup>175</sup> Engstrom & Gelbach, *supra* note 145 at 1006.

account for disparities in the litigants' resources<sup>176</sup>: "Parties may obtain discovery regarding any nonprivileged matter that is relevant . . . and proportional to the needs of the case, considering . . . the parties' resources, . . . and whether the burden . . . outweighs its likely benefit."<sup>177</sup> Without TAR, these concerns are significant because the ability to conduct discovery is proportional to the number of people each party can hire. But Engstrom and Gelbach argue that, as "new and powerful e-discovery tools propagate," differently funded litigants could conduct extensive discovery for similar costs, thus erasing "concern[s] about high and asymmetric litigation costs" and "drain[ing] the proportionality constraints built into . . . civil procedure rules of much of their importance."<sup>178</sup>

TAR tools may not necessarily reduce asymmetries in discovery costs as predicted, because the prediction assumes that discovery conducted by TAR tools is accurate. If TAR tools proliferate and create the systemic errors in discovery as previously described, such errors would accumulate with each case. As this error accumulates, more litigants would notice that TAR distorts litigation outcomes. Return to the example in which plaintiffs survive pleading only to lose for wrong choice of law, because their pre-trial investigation using TAR tools only produced evidence confirming their incorrect expectation that New Jersey law applies. After the case is dismissed, both litigants would know, or at least suspect, that the plaintiffs' TAR tools produced evidence leading to the dismissal. This would be a compelling reason for litigants to reduce reliance on TAR and increase reliance on human eyes, absent some revolutionary advancement that allows TAR tools to emulate genuine human intelligence. At this point, concerns over disparities in the number of people each litigant can hire, or proportionality concerns over the litigants' resources, would begin to reemerge.

Finally, Engstrom and Gelbach's argument that the rising centrality of TAR and other legal tech tools to modern discovery practice would "place increasing pressure"<sup>179</sup> on the work product doctrine to change may be an overstatement. Engstrom and Gelbach contemplate a scenario where TAR tools in the present and "tools . . . that predict case outcomes"<sup>180</sup> in the future significantly outperform humans, but not all litigants have access to them. "[R]esource-strapped" litigants "who lack access to the full legal tech toolkit" might "demand the other side's machine outputs," a scenario which the existing work product doctrine is not prepared for.<sup>181</sup> But this scenario assumes that these legal tech tools meaningfully outperform humans, which may not necessarily be the case because they are prone to introducing systemic errors into litigation outcomes, as explained above.

Of course, TAR tools may evolve to overcome the shortcomings identified here. AI could gain intelligence genuinely rivaling that of a human,<sup>182</sup> thus enabling TAR tools to autonomously adapt to changing definitions of relevance in discovery. I also emphasize that I am not criticizing the use of TAR itself. TAR tools are helpful when they are used true to their name—as "assistance" to lawyers who exercise due care in shepherding the discovery process. I am criticizing a misperception of TAR tools resulting from the faster horse fallacy: TAR tools as a faster, cheaper, and better version of humans, despite a problem unique to TAR tools—lack of human intelligence.

<sup>&</sup>lt;sup>176</sup> *Id.* at 1051.

<sup>&</sup>lt;sup>177</sup> Fed. R. Civ. P. 26(b)(1).

<sup>&</sup>lt;sup>178</sup> Engstrom & Gelbach, *supra* note 145 at 1005, 1051.

<sup>&</sup>lt;sup>179</sup> *Id.* at 1076.

<sup>&</sup>lt;sup>180</sup> Id. at 1082.

<sup>&</sup>lt;sup>181</sup> Id. at 1080.

<sup>&</sup>lt;sup>182</sup> See, e.g., Scott J. Shackelford & Rachel Dockery, Governing AI, 30 CORNELL J.L. & PUB. POL'Y 279, 286 (2020).

#### B. Misperception of Electric Vehicles Can Increase Traffic Fatalities

The faster horse fallacy distorts not only legal outcomes in the courtroom, but also policy outcomes in government. An example of such a policy is the promotion of electric vehicles (EVs) as a solution to carbon emissions from conventional combustion-engine cars. The prevailing view of the government,<sup>183</sup> climate scientists,<sup>184</sup> legal scholars,<sup>185</sup> politicians,<sup>186</sup> and the press<sup>187</sup> is that EVs are cleaner than combustion cars—that is, EVs create less emissions. Some call EVs "cleaner versions" of gas-fueled counterparts.<sup>188</sup> The EPA states that EVs would benefit "both [consumers'] wallet and the environment" by cutting fuel costs and emissions.<sup>189</sup> Governments around the world are committing to electrify most or all vehicles.<sup>190</sup> This should not be surprising: there is no reason not to push for vehicle electrification if one views EVs to be cleaner equivalents of gasoline cars.

But as of 2023, EVs are not cleaner equivalents of gasoline cars, because EVs have features and problems that gasoline cars do not. For example, the batteries needed to power EVs can catch fire for various reasons, including "low/high temperatures or high humidity," "insecure charging stations and/or cables," or "traffic accident[s]."<sup>191</sup> When EVs catch fire, <sup>192</sup> they can take "40 times

<sup>&</sup>lt;sup>183</sup> U.S. Department of Energy, *Electric Vehicle Benefits and Considerations* ("All forms of electric vehicles can help improve fuel economy, lower fuel costs, and reduce emissions.") (last visited June 1, 2023), <u>https://afdc.energy.gov/fuels/electricity\_benefits.html</u>.

 <sup>&</sup>lt;sup>184</sup> Union of Concerned Scientists, *Driving Cleaner: Electric Cars and Pickups Beat Gasoline on Lifetime Global Warming Emissions* (July 2022), <u>https://www.ucsusa.org/sites/default/files/2022-09/driving-cleaner-report.pdf</u>.
 <sup>185</sup> See, e.g., Zachary Liscow & Quentin Karpilow, *Innovation Snowballing and Climate Law*, 95 WASH. U.L. REV. 387, 446 (2017) ("Electrifying the entire fleet [of cars in the United States], however, would more than double the number of zero-emission vehicles currently on the roads.").

<sup>&</sup>lt;sup>186</sup> See, e.g., Congressman Mike Levin, *Rep. Mike Levin and Senator Jeff Merkley Reintroduce Legislation to Transition America to Zero-Emission Vehicles* (Dec. 14, 2022) ("'Electric vehicles mean cleaner air . . . and a whole lot less climate pollution,' said Senator Merkely."), *available at <u>https://levin.house.gov/media/press-releases/rep-</u>mike-levin-and-senator-jeff-merkley-reintroduce-legislation-to-transition-america-to-zero-emission-vehicles.* 

<sup>&</sup>lt;sup>187</sup> See, e.g., Clarisa Diaz & Mary Hui, EVs Are Far Cleaner than Gas-powered Cars—Even if Batteries Require More Mining, QUARTZ (Mar. 3, 2023), available at <u>https://qz.com/electric-vehicles-cleaner-battery-mining-1850129845</u>; Jim Motavalli, The Long View: Electric Cars Are Cleaner Than Gas Cars. Period., FORBES (Oct. 4, 2021), available at <u>https://www.forbes.com/wheels/news/electric-cars-cleaner-than-gas-cars/</u>.

<sup>&</sup>lt;sup>188</sup> See, e.g., Luc Olinga, GM Cuts the Price of Its Anti-Tesla Weapon, THESTREET (June 1, 2022) (calling the "GMC Hummer electric pickup/truck, a cleaner version of the iconic Hummer,"), available at https://www.thestreet.com/technology/gm-cuts-the-price-of-its-anti-tesla-weapon.

<sup>&</sup>lt;sup>189</sup> U.S. Environmental Protection Agency, What If One of Your Cars Was Electric? (Aug. 17, 2023),

https://www.epa.gov/greenvehicles/what-if-one-your-cars-was-electric.

<sup>&</sup>lt;sup>190</sup> See The White House, FACT SHEET: Biden-Harris Administration Announces New Private and Public Sector Investments for Affordable Electric Vehicles (Apr. 17, 2023) ("As part of President Biden's goal of having 50 percent of all new vehicle sales be electric by 2030... President Biden's Inflation Reduction Act adds and expands tax credits for purchases of new and used EVs."), available at <u>https://www.whitehouse.gov/briefing-room/statements-</u> releases/2023/04/17/fact-sheet-biden-harris-administration-announces-new-private-and-public-sector-investments-

for-affordable-electric-vehicles/; Heather Payne, Pulling in Both Directions: How States Are Moving Toward Decarbonization While Continuing to Support Fossil Fuels, 45 COLUM. J. ENVTL. L. 285, 303-06 (2020) (discussing subsidies for electric vehicle purchases and commitments to electrify all or most of the vehicle fleet by various state and local governments in the United States); Adam Taylor, E.U. Plans for Only Electric New Vehicles by 2035 'Without Precedent', WASH. POST (Oct. 28, 2022), available at <a href="https://www.washingtonpost.com/climate-solutions/2022/10/28/eu-electric-cars-2035/">https://www.washingtonpost.com/climate-solutions/2022/10/28/eu-electric-cars-2035/</a>.

<sup>&</sup>lt;sup>191</sup> Peiyi Sun, Roeland Bisschop, Huichang Niu & Xinyan Huang, *A Review of Battery Fires in Electric Vehicles*, 56 FIRE TECHNOLOGY 1361, 1380 (2020).

<sup>&</sup>lt;sup>192</sup> The likelihood of electric vehicles catching fire compared to gasoline cars continues to be studied. *See* National Highway Traffic Safety Administration, *Lithium-ion Battery Safety Issues for Electric and Plug-in Hybrid Vehicles*,

more water" to extinguish than gasoline car fires.<sup>193</sup> EVs have even been known to burn while underwater,<sup>194</sup> or reignite after being extinguished.<sup>195</sup> Unsurprisingly, fire departments across the country are being forced to let EV fires burn out,<sup>196</sup> meaning that passengers are far more likely to die in the event of a fire if it involves an EV. Citizens could be in danger from EV fires without needing to purchase EVs, because of other EVs on the road.<sup>197</sup> As more EVs are used, this problem is likely to exacerbate, given that less than one percent of the passenger vehicle fleet in the U.S. was electric as of 2022.<sup>198</sup> Yet, even though EVs present a serious problem that gasoline cars do not, public policy appears to present EVs as cleaner and cheaper equivalents of gasoline cars.<sup>199</sup>

Features unique to EVs can increase not only the risk of fatalities but also the financial cost of vehicle ownership, which undermines the representation of EVs as cheaper versions of gasoline cars. "[E]lectric vehicles are typically much heavier than even the largest trucks and SUVs that are powered by gasoline or diesel."<sup>200</sup> For example, the Ford F-150 Lightning electric pickup truck is "35 percent heavier,"<sup>201</sup> or "about 1,600 pounds" heavier than the gasoline-powered Ford F-150

<sup>199</sup> See supra notes 189-90 and accompanying discussion.

at xvii (Oct. 2017) ("[T]he propensity and severity of fires and explosions from . . . Li-ion batter[ies] are anticipated to be . . . comparable to or perhaps slightly less than those for gasoline or diesel . . . . Another safety concern is the isolation of high-voltage components to protect passengers and first responders in the event of a crash."), *available at* <u>https://www.nhtsa.gov/sites/nhtsa.gov/files/documents/12848-lithiumionsafetyhybrids 101217-v3-tag.pdf;</u> National Highway Traffic Safety Administration, *Battery Safety Initiative* ("Continue to conduct investigations into potential safety-related defects related to electric vehicle batteries. NHTSA's Office of Defect Investigations has conducted several investigations and overseen multiple recalls associated with vehicle and house fires caused by issues relating to electric vehicle batteries."), *available at* <u>https://www.nhtsa.gov/battery-safety-initiative</u> (last visited Dec. 12, 2023). <sup>193</sup> Adam Barnes, *Firefighters Have to Blast 40 Times More Water at Burning Tesla than Other Cars*, THEHILL (Aug. 17, 2021), *available at* <u>https://thehill.com/changing-america/enrichment/arts-culture/568255-firefighters-have-toblast-40-times-more-water-at/; see also International Association of Fire and Rescue Services, *Up to 150,000 Liters of Water Needed to Put Out a Fire in an Electric Car* (Sept. 18, 2022), *available at* <u>https://www.ctif.org/news/150-</u>000-liters-water-needed-put-out-fire-electric-car.</u>

<sup>&</sup>lt;sup>194</sup> Jon Rogers, *Horrifying Moment Tesla Malfunctions and Plunges into Lake* . . . *Before Bursting into Flames Underwater*, THE SUN (Nov. 11, 2023), *available at* <u>https://www.thesun.co.uk/motors/24705428/tesla-model-x-malfunctions-sinks-water-fire/</u>.

<sup>&</sup>lt;sup>195</sup> Asha C. Gilbert, *California Firefighters Use 4,500 Gallons of Water to Extinguish Tesla Fire That Kept Reigniting*, USA TODAY (June 23, 2022), *available at <u>https://www.usatoday.com/story/money/cars/2022/06/23/tesla-fire-california-reignites/7709296001/.*</u>

<sup>&</sup>lt;sup>196</sup> Tim White, '*Let Them Burn': How RI Firefighters are Training to Deal With Electric Vehicle Fires*, WPRI (Mar. 15, 2023), *available at* <u>https://www.wpri.com/target-12/let-them-burn-how-ri-firefighters-are-training-to-deal-with-electric-vehicle-fires/</u>; Melissa Blasius, *Why AZ Fire Department Plans to Bury Burning Electric Vehicles*, ABC 15 ARIZONA (May 22, 2023), *available at* <u>https://www.abc15.com/news/local-news/why-az-fire-department-plans-to-bury-burning-electric-vehicles</u>.

<sup>&</sup>lt;sup>197</sup> See, e.g., Edgar Meza, Several German Cities Halt Use of e-Buses Following Series of Unresolved Cases of Fire, CLEAN ENERGY WIRE (Oct. 11, 2021), available at <u>https://www.cleanenergywire.org/news/several-german-cities-halt-use-e-buses-following-series-unresolved-cases-fire;</u> Paris Withdraws Bollore's Electric Buses After Two Catch Fire, REUTERS (Apr. 29, 2022), available at <u>https://www.reuters.com/business/autos-transportation/paris-public-</u> transport-network-suspends-bollore-e-buses-after-fire-incidents-2022-04-29/.

<sup>&</sup>lt;sup>198</sup> Feilding Cage & Samuel Granados, *The Long Road to Electric Cars*, REUTERS (Feb. 7, 2022), *available at* <u>https://www.reuters.com/graphics/AUTOS-ELECTRIC/USA/mopanyqxwva/</u>.

<sup>&</sup>lt;sup>200</sup> Tom Krisher, US Official Warns of Risks Posed by Heavy Electric Vehicles, ASSOCIATED PRESS (Jan. 12, 2023), available at <u>https://apnews.com/article/technology-road-safety-national-transportation-board-automotive-accidents-dd5c4260f68e9f5dcb430a02cc939f6b</u>.

<sup>&</sup>lt;sup>201</sup> Andrew J. Hawkins, *Ford F-150 Lightning First Drive: Quiet Storm*, THE VERGE (May 11, 2022), *available at* https://www.theverge.com/23065908/ford-f150-lightning-electric-truck-first-drive-specs-road-bluecruise.

pickup truck.<sup>202</sup> The weight difference between electric and gasoline-powered vehicles is due to the weight of the batteries needed to enable the electric vehicle to drive as far as a conventional vehicle would, without having to recharge.<sup>203</sup> Decades of research has shown that "heavy vehicles damage[] the road more than light vehicles."<sup>204</sup> Therefore, EVs would cause more road wear that requires more frequent maintenance, which taxpayers would end up paying for. As more vehicles in the United States become electric, these maintenance costs would correspondingly increase.<sup>205</sup>

Granted, EV-related technology is "still in its infancy,"<sup>206</sup> meaning that the aforementioned problems unique to EVs could be addressed in the near future, which would strengthen the case for wider EV adoption. Increased battery capacity would enable EVs to travel farther on a reduced weight,<sup>207</sup> reducing road wear. Solid-state batteries in development could be "less flammable"<sup>208</sup> than "[t]raditional lithium-ion batteries" using "highly flammable organic liquid electrolytes."<sup>209</sup> My point is that, as of now, when such issues have not yet been resolved, EVs are not yet cleaner versions of gasoline cars, and promoting them as such<sup>210</sup> is an example of the faster horse fallacy.

The downsides of perceiving EVs as cleaner and cheaper equivalents of gasoline cars are not limited to the safety and financial costs to the people who drive them or drive alongside them. The faster horse fallacy also undermines public policy more broadly. If EVs are seen as a cheaper and safer solution to climate change than they really are, the misperception would divert attention and resources from other solutions to climate change that do not present the costs and problems unique to EVs—such as public transit.<sup>211</sup> Further, communicating with voters on the basis of such misperceptions, such as dismissing concerns that "electric vehicles are not as safe as comparable gasoline vehicles" as a "myth,"<sup>212</sup> will likely undermine faith in the government in the long run.

<sup>&</sup>lt;sup>202</sup> Peter Valdes-Dapena, *Why Electric Cars Are So Much Heavier Than Regular Cars*, CNN BUSINESS (June 21, 2021), *available at* <u>https://edition.cnn.com/2021/06/07/business/electric-vehicles-weight/index.html</u>.

 <sup>&</sup>lt;sup>203</sup> See, e.g., Carlo Cunanan et al., A Review of Heavy-Duty Vehicle Powertrain Technologies: Disel Engine Vehicles, Battery Electric Vehicles, and Hydrogen Fuel Cell Electric Vehicles, 2021 CLEAN TECHNOLOGIES 474, 479 (2021)
 ("The major concerns [for electric freight vehicles such as Tesla Semis] are the weight of the battery in relation to the capacity required with freight vehicles. A heavier battery is required for [vehicles to drive] longer ranges . . . . ").
 <sup>204</sup> GRAHAM WEST, THE TECHNICAL DEVELOPMENT OF ROADS IN BRITAIN 81 (2019); TODD LITMAN, CHARLES KOMANOFF & DOUGLAS HOWELL, ROAD RELIEF: TAX AND PRICING SHIFTS FOR A FAIRER, CLEANER, AND LESS CONGESTED TRANSPORTATION SYSTEM IN WASHINGTON STATE 19 ("[H]eavier vehicles . . . cause more road wear").
 <sup>205</sup> See Cage & Granados, supra note 198 (only one percent of passenger vehicles in the United States are electric).
 <sup>206</sup> Mukes Kapilashrami, Climate Action: From Multilateral Negotiations to Implementation, in HANDBOOK OF MULTI-LEVEL CLIMATE ACTIONS: SPARKING AND SUSTAINING TRANSFORMATIVE APPROACHES 101, 121 (Mark Starik, Gordon P. Rands, Jonathan P. Deason & Patricia Kanashiro eds. 2023).

<sup>&</sup>lt;sup>207</sup> See A.K. BABU, ELECTRIC AND HYBRID VEHICLES 44 (2018).

<sup>&</sup>lt;sup>208</sup> ROBERT M. GRANT, CONTEMPORARY STRATEGY ANALYSIS 379 (2021).

<sup>&</sup>lt;sup>209</sup> Muhamad Husaini Abu Bakar & Kartina Farah Hana, *Synthesis of Polyprolylene Solid State Electrolytes for Batteries Using a Polymerization Heat Chamber, in* ADVANCED ENGINEERING FOR PROCESSES AND TECHNOLOGIES 289, 290 (Azman Ismail, Muhamad Husaini Abu Bakar & Andreas Öchsner eds. 2023).

<sup>&</sup>lt;sup>210</sup> See, e.g., U.S. Environmental Protection Agency, *supra* note 189 (projecting "\$72 billion in fuel costs per year" saved and "320 million metric tons of CO2 per year" in emissions reduced from the adoption of EVs); Courtney Lindwall, *Electric vs. Gas Cars: Is It Cheaper to Drive an EV?*, NAT'L RESOURCES DEFENSE COUNCIL (Nov. 17, 2023) (claiming that "[y]ou can bank on saving across the life of your electric vehicle" inclusive of the cost of the car, maintenance, and fuel costs), *available at <u>https://www.nrdc.org/stories/electric-vs-gas-cars-it-cheaper-drive-ev</u>.
<sup>211</sup> See, e.g., JOAN FITZGERALD, URBAN SUSTAINABILITY AND ECONOMIC DEVELOPMENT 146 (2010) ("[E]lectric cars [are] one part of the solution" but "[p]ublic transit produces . . . about half as much carbon . . . per passenger mile.").
<sup>212</sup> U.S. Environmental Protection Agency, <i>Electric Vehicle Myths?* (Aug. 23, 2023), *available at <u>https://www.epa.gov/greenvehicles/electric-vehicle-myths</u>.* 

#### III. THE CAUSE OF THE FASTER HORSE FALLACY

Parts I and II have established the existence and significance of the faster horse fallacy by documenting how it operates in various areas of law and policy, such as notice by email, discovery by AI-assisted tools, and proposing to mitigate carbon emissions by driving electric cars. But this Article has not yet examined *why* the legal system uses this particular cognitive error to perceive the particular kinds of technology that lawyers are expected to understand. Part III examines the faster horse fallacy in an epistemological sense, by discussing how it arises as a distinct category of error. Technology is often presented to laypeople as a product, not as a technology: for example, computer technology is presented as, among many products, email.<sup>213</sup> Such products are designed to be used without having to know the underlying technology, lest the sellers go out of business. The legal profession conflates understanding the *product* well enough to use it, with understanding the *technology*. This illusion gives rise to the faster horse fallacy: for example, understanding how to use email from a consumer's perspective leads lawyers to analogize it as faster and cheaper mail.

#### A. The Reasoning Process that Leads to the Faster Horse Fallacy

It may be tempting to categorize the faster horse fallacy as a garden-variety false analogy which oversimplifies something complex. Legal reasoning makes liberal use of analogies,<sup>214</sup> and the profession is already notorious for "not allow[ing] the lack of informed expertise" to prevent the expression of opinions "with unwarranted confidence"<sup>215</sup> on subjects unfamiliar to lawyers, including but not limited to economics,<sup>216</sup> education,<sup>217</sup> and medicine.<sup>218</sup> Were we to categorize the faster horse fallacy as just another example of lawyers using bad logic to understand yet another item on the long list of things outside of our expertise, the solution to the fallacy would be simple, if not easy: get lawyers to apply logic correctly and to stop pontificating on things we don't know.

In fact, an eminent name in the history of technology law scholarship has tried to address the legal system's technological ineptitude in just this way. Judge Frank Easterbrook argued that "lawyers should not interpret technology because they do not understand it."<sup>219</sup> Instead, lawyers should let people who do know technology "make their own arrangements," and do what lawyers do best: "study general rules" so that they know how to apply them to "specialized endeavors."<sup>220</sup>

<sup>219</sup> Ryan Calo, *Robotics and the Lessons of Cyberlaw*, 103 CAL. L. REV. 513, 560 (2015).

<sup>&</sup>lt;sup>213</sup> See, e.g., JOSEPH MUNIZ & AAMIR LAKHANI, INVESTIGATING THE CYBER BREACH: THE DIGITAL FORENSICS GUIDE FOR THE NETWORK ENGINEER 282-83 (2018) (discussing the roles of the Domain Name System, Simple Mail Transfer Protocol, and Message Transfer Agent, among others, in the functioning of email).

 <sup>&</sup>lt;sup>214</sup> See Scott Brewer, Exemplary Reasoning: Semantics, Pragmatics, and the Rational Force of Legal Argument by Analogy, 109 HARV. L. REV. 925, 926 (1996) ("reasoning by analogy" has "special prominence in legal reasoning").
 <sup>215</sup> Brian H. Bix, Essay, Contract Texts, Contract Teaching, Contract Law: Comment on LAWRENCE CUNNINGHAM, CONTRACTS IN THE REAL WORLD, 88 WASH. L. REV. 1251, 1251 (2013) (referring to law professors).

<sup>&</sup>lt;sup>216</sup> Sabira Khan, *Unwilling and Unable: Judicial and Administrative Responses to the Asian Carp Threat in the Great Lakes*, 42 ECOLOGY L.Q. 263, 284 (2015) ("Judges are legal experts and may lack ... economic expertise ....").

 <sup>&</sup>lt;sup>217</sup> Ron M. Aizen, *Four Ways to Better 1L Assessments*, 54 DUKE L.J. 765, 769–70 (2004) ("law professors . . . might lack the expertise needed to design alternatives to the traditional essay exam" because they are not formally trained).
 <sup>218</sup> Sean M. Kammer, *The "Intellectual Diversity" Crisis That Isn't: Liberal Faculties, Conservative Victims, and the Cynical Effort to Undermine Higher Education for Political Gain*, 39 QUINNIPIAC L. REV. 149, 224 (2021) (describing a law professor who allegedly influenced pandemic containment policy despite lacking expertise in epidemiology).

<sup>&</sup>lt;sup>220</sup> Frank H. Easterbrook, *Cyberspace and the Law of the Horse*, 1996 U. CHI. LEGAL F. 207, 207.

Beliefs lawyers hold about computers, and predictions they make about new technology, are highly likely to be false. This should make us hesitate to prescribe legal adaptations for cyberspace. The blind are not good trailblazers. . . . [T]he best way to learn the law applicable to specialized endeavors is to study general rules. . . . Well, then, what can we do? By and large, nothing. If you don't know what is best, let people make their own arrangements. Next after nothing is: keep doing what you have been doing. Most behavior in cyberspace is easy to classify under current property principles. . . .<sup>221</sup>

If one accepts Judge Easterbrook's argument that general-purpose rules can regulate "specialized endeavors" like behavior on the internet, the legal profession's technological ineptitude would no longer be a problem. That is, the conundrum of lawyers not being trained in technology but having to be sufficiently proficient to regulate it would no longer be a conundrum because regulating technology properly would require only legal, not technological, expertise. Moreover, under Judge Easterbrook's reasoning, the faster horse fallacy would be materially identical to any other faulty analogy, and the solution would be no different: learn and apply the rules of law and logic properly.

Although Judge Easterbrook's argument continues to shape discussions in technology law scholarship today,<sup>222</sup> hindsight indicates that it was wrong. Judge Easterbrook's position, in short, is that lawyers do not understand technology but knowing general rules is sufficient to regulate it because *activity* involving technology, such as "[m]ost behavior in cyberspace," is "easy to classify under" existing law.<sup>223</sup> This argument impliedly assumes that the technology at issue is not so complex that it would prevent lawyers from understanding behavior involving that technology: for example, the technology underlying the internet would not prevent lawyers from understanding online activity. The scholarly consensus, with which I agree, is that technology has indeed become complex enough that it can hinder the legal profession from understanding behavior involving that technology well enough to regulate it. As Professor Ryan Calo put it, contemporary legal problems involving technology "inevitably [require] not just legal but also technological prescriptions."<sup>224</sup>

Strangely, despite concluding that many problems in law and technology require at least some technical proficiency to solve, most relevant works do not examine how lawyers understand technology. These works accept the profession's technological ineptitude as a constant.<sup>225</sup> At the same time, many works in this category argue that a problem remains unsolved because we have

<sup>&</sup>lt;sup>221</sup> *Id.* at 207, 210.

<sup>&</sup>lt;sup>222</sup> See, e.g., Courtney M. Cox, *The Uncertain Judge*, 90 U. CHI. L. REV. 739, 758 (2023) (discussing the problem of whether cases involving technology "should be treated differently"), *citing* Easterbrook, *supra* note 220. <sup>223</sup> Easterbrook, *supra* note 220, at 210.

<sup>&</sup>lt;sup>224</sup> Calo, *supra* note 219, at 561.

<sup>&</sup>lt;sup>225</sup> See, e.g., Murphy, *supra* note 10 at 38 ("Lawyers are 'bad' at technology. It is an axiom ...."); LeRoy L. Kondo, *Untangling the Tangled Web: Federal Court Reform Through Specialization for Internet Law and Other High Technology Cases*, 2002 UCLA J.L. & TECH. 1, 1 ("[S]elf-study by generalist judges remains an imperfect solution ... particularly in complex high technology cases involving intellectual property issues, in part because of the intrinsic limitations in the knowledge base of generalist judges."); Fred Galves, *Will Video Kill the Radio Star? Visual Learning and the Use of Display Technology in the Law School Classroom*, 2004 U. ILL. J.L. TECH. & POL'Y 194, 195 ("[L]aw professors in general lag behind society and other education professionals in using display technology to teach"); Lynn M. LoPucki, *Disciplinary Legal Empiricism*, 76 MD. L. REV. 449, 478 (2017) ("All but a few law students lack the expertise to evaluate highly mathematical, state-of-the-art work in economics, political science, or experimental psychology. For law students to develop that expertise in law school is impractical.").

not adopted a particular technology<sup>226</sup>—a phenomenon called "technological solutionism."<sup>227</sup> The only way to reconcile the belief that most lawyers will remain technologically inept, and the claim that adopting a certain technology would solve a problem, is to think that most lawyers need not understand that technology for it to solve the problem. For example, some argue that courts' refusal to use email notice undermines "a constitutional right" and this refusal stems from a "fundamental misunderstanding" of the technology.<sup>228</sup> Yet, if courts would "fall in line" and "actively analyze and supervise" electronic notice despite their lack of expertise, "E-notice would likely continue to expand" without the need for any "extreme measures" such as "new theories to reorient the law."<sup>229</sup>

But this apparent belief, that some technology would solve a legal problem despite most of the legal profession not understanding that technology, is incorrect. Even assuming that the legal scholars who push for the adoption of a technology understand it—which, as this Article has shown, is not always the case—courts still must understand how spamboxes work to facilitate email notice without email being abused. Litigants who use AI-assisted discovery tools must be aware of the possibility of those tools reinforcing incorrect expectations for the tools to return helpful outputs. Also in public policy, consumers must understand the risks unique to electric cars for them to be used without incurring unexpected costs. Because the legal profession's *general* understanding of technology is central to the success of technology as a solution to legal problems, it is critical for scholars to examine how and why lawyers misunderstand technology. This is the value of studying the faster horse fallacy: it documents a recurrent way in which lawyers misunderstand technology.

To be clear, scholars have been aware of the *fact* that the legal system may misunderstand technology, and that the misunderstanding may manifest itself in the form of false analogies. This should not be surprising: scholars have lamented the profession's technological ineptitude for decades,<sup>230</sup> and it is common knowledge that analogies are central to legal reasoning.<sup>231</sup> Professor Vincent Brannigan, a pioneer in law and technology literature, wrote in 1988 that "[f]alse analogies may be particularly common in first order technico-legal revolutions" because of "a tendency to emphasize the technological similarities while ignoring the underlying factual differences."<sup>232</sup> The *fact* that the legal system misperceives technology by using false analogies is not the blind spot in the literature to which I am pointing. I am arguing that existing works do not examine *how* false analogies involving technology operate and *why* lawyers use them so frequently, across so many distinct technologies and disparate fields of law. To use an analogy, while discovering a previously unknown illness is important work, diagnosing the cause of that illness is no less important work.

<sup>&</sup>lt;sup>226</sup> See, e.g., Colonna, *supra* note 6, at 314 ("[T]aking a techno-progressive stance that views continued technological progress as beneficial to society and the human condition . . . this paper seeks to explore how AI can actively be used to protect individual privacy); Cruz, *supra* note 5, at 357-59 (arguing that legal technology increases access to justice, citing examples of "chat platforms" used to "instantly relay . . . messages" and "provide advice," "criminal court systems . . . turning to artificial intelligence to assist with bail determinations," and "legal technology software" that is "reinventing law practice tasks that historically required hours of research . . . and multiple interviews with clients."). <sup>227</sup> See, e.g., EVGENY MOROZOV, TO SAVE EVERYTHING, CLICK HERE: THE FOLLY OF TECHNOLOGICAL SOLUTIONISM (2013).

<sup>&</sup>lt;sup>228</sup> Bartholomew, *supra* note 8 at 224, 248.

<sup>&</sup>lt;sup>229</sup> *Id.* at 260, 267.

<sup>&</sup>lt;sup>230</sup> See supra note 225 and accompanying text.

<sup>&</sup>lt;sup>231</sup> See Brewer, supra note 214.

<sup>&</sup>lt;sup>232</sup> Vincent M. Brannigan, *Biotechnology: A First Order Technico-Legal Revolution*, 16 HOFSTRA L. REV. 545, 557 (1988).

But the few existing works that discuss analogies in the context of law and technology do not examine how lawyers use analogies to *misunderstand* technology. Instead, these works focus on how to use analogies to understand technology properly—which, as explained below, is akin to prescribing medicine without having diagnosed the illness. Some argue that "it is not enough to identify particular characteristics of a technology when employing a techlaw analogy."<sup>233</sup> "Instead, legal actors must determine which of those characteristics are relevant or 'salient."<sup>234</sup> According to Professor Jack Balkin, when faced with new technology, "to ask 'What is genuinely new here?' is to ask the wrong question. . . . Instead of focusing on novelty, we should focus on salience."<sup>235</sup> Salience is "not so much features of things as [it is] features of social relations that employ those things."<sup>236</sup> Thus, salience "may depend on how people come to use" a technology.<sup>237</sup> For example, "[a] court evaluating whether a statute written for wagons applies to automobiles might consider," among other things, the fact "that both [wagons and cars] are used as a means of conveyance."<sup>238</sup>

This recommendation indicates that scholars may be attempting to solve a problem without diagnosing it. This is because telling lawyers to create analogies about technology by identifying the most legally salient thing about it could actually cause lawyers to use the faster horse fallacy, thus misperceiving technology. The definition of legal salience is presented as flexible, changing depending on the situation: technically, the most legally salient thing can be anything including the "architecture and design" of a technology,<sup>239</sup> "[w]hat aspects of human activity" a technology emphasizes,<sup>240</sup> and "how people come to use" it.<sup>241</sup> But the problem with this ostensibly flexible definition is that the most legally salient characteristic of a technology.<sup>242</sup> Even if a design feature of a technology is its most legally salient aspect, how would lawyers recognize that fact? Thus, existing works' definition of legally salient is *de facto* limited to how laypeople like lawyers use a technology, such as the fact "that both [wagons and cars] are used as a means of conveyance."<sup>243</sup>

This focus on legal salience, defined as how lawyers use a technology, encourages lawyers to rely on the faster horse fallacy. Telling lawyers to understand technology according to its use creates an illusion that knowing how to use a technology for one's own limited purposes is enough to construct proper analogies involving technology. This illusion incentivizes lawyers to analogize a new technology to an older one according to how lawyers use those technologies. Email is seen as functionally equivalent to mail for legal purposes because lawyers use both email and mail to send notices. Although a genuinely new technological feature in email (spamboxes) can be abused to undermine notice, that feature is not visible to people who merely use email to send notices and

<sup>&</sup>lt;sup>233</sup> Rebecca Crootof & BJ Ard, Structuring Techlaw, 34 HARV. J.L. & TECH. 347, 388 (2021).

<sup>&</sup>lt;sup>234</sup> Id.

<sup>&</sup>lt;sup>235</sup> Jack M. Balkin, *Digital Speech and Democratic Culture: A Theory of Freedom of Expression for the Information Society*, 79 N.Y.U. L. REV. 1, 2 (2004).

<sup>&</sup>lt;sup>236</sup> Jack M. Balkin, *The Path of Robotics Law*, 6 CALIF. L. REV. CIRCUIT 45, 49 (2015).

<sup>&</sup>lt;sup>237</sup> *Id*. at 47.

<sup>&</sup>lt;sup>238</sup> Crootof & Ard, *supra* note 233, at 391.

<sup>&</sup>lt;sup>239</sup> *Id.* at 388.

<sup>&</sup>lt;sup>240</sup> Balkin, *supra* note 235, at 2-3.

<sup>&</sup>lt;sup>241</sup> Balkin, *supra* note 236, at 47.

<sup>&</sup>lt;sup>242</sup> See supra note 225 and accompanying text.

<sup>&</sup>lt;sup>243</sup> Crootof & Ard, *supra* note 233, at 391.

determine delivery by looking for returned-to-sender messages.<sup>244</sup> What *is* visible to such users is differences in cost or speed, thus making email faster and cheaper mail.<sup>245</sup> In short, "understanding" a new technology by overemphasizing its legal salience has led directly to the faster horse fallacy.

Existing works recommend determining the legal salience of a technology on the basis of how lawyers use that technology, and lawyers follow this recommendation, because both scholars and lawyers fail to distinguish a technology from the products that use the technology. Technology is rarely presented as a technology to laypeople, including lawyers. Technology is presented as a product that laypeople want to use. For example, a car is a combination of various technologies developed in, among other fields, materials sciences.<sup>246</sup> Such products are designed to be used to the typical person's fullest enjoyment without knowing anything about the underlying technology. Driver's ed manuals need not say anything about internal combustion to teach people to drive; if one needed an engineering degree to drive a car, Ford would go out of business. In short, when one is purely a consumer, one need not distinguish the product from the underlying technology.

However, conflating the product with the underlying technology becomes a problem when the legal system does it in its professional capacity. This is because we are not simply consumers; as stated at the top of this Article, we are involuntary experts tasked with regulating how society uses technology. From a functionalist perspective, electric vehicles may seem to be a cleaner and cheaper version of a gasoline car because, to consumers, the most visible difference between the two is that electric vehicles do not use gasoline. But policymakers must be cognizant of differences in the technology underlying electric vehicles and gasoline cars: for example, electric vehicle fires are much harder to extinguish than gasoline car fires due to limitations in the technology of lithiumion batteries.<sup>247</sup> When policymakers conflate a product and its technology, however, they dispense advice that undermines their own credibility and harms the people who listen—such as dismissing concerns that "electric vehicles are not as safe as comparable gasoline vehicles" as a "myth."<sup>248</sup>

The foregoing discussion reveals a consistent trend in law and technology scholarship that has led to not only the faster horse fallacy, but also the legal profession's propensity to misperceive technology generally: an implied or express belief that lawyers need not study the specifics of a technology too closely to understand it. Judge Easterbrook's law of the horse thesis argued that mastery of legal rules is sufficient to regulate activity involving cutting-edge technology.<sup>249</sup> Many works that advocate for some new technology take lawyers' technological ineptitude as a constant, and argue that adopting the technology would be sufficient to solve the legal problem at issue.<sup>250</sup> The scholarly advice to focus on "legal salience" encourages lawyers to create analogies about technology by focusing on how lawyers use technology, which sidesteps the need to study the

<sup>&</sup>lt;sup>244</sup> See, e.g., Cohorst, No. 3:10-CV-2666-JM-BGS, Dkt. No. 65, at 20 (a class member claimed not to have received a settlement notice because it was emailed to the spambox and court responded that if class members "were sent copies of the claim form by email [but] never responded, . . . that's . . . their bad luck or their decision.").

<sup>&</sup>lt;sup>245</sup> See, e.g., Grove, 2021 WL 6618708, at \*7 (email "can facilitate notice . . . at low cost"); Pryke, 2021 WL 5027565,

at \*3 (email "gets where it's supposed to go . . . instantaneously" while mail can take "days and sometimes weeks").

<sup>&</sup>lt;sup>246</sup> See, e.g., HIROSHI YAMAGATA, THE SCIENCE AND TECHNOLOGY OF MATERIALS IN AUTOMOTIVE ENGINES (2005).

<sup>&</sup>lt;sup>247</sup> See supra notes 191-97 and accompanying text.

<sup>&</sup>lt;sup>248</sup> U.S. Environmental Protection Agency, *supra* note 212.

<sup>&</sup>lt;sup>249</sup> See supra notes 221-24 and accompanying text.

<sup>&</sup>lt;sup>250</sup> See supra notes 225-29 and accompanying text.

actual features of the underlying technology.<sup>251</sup> Although it would be convenient if lawyers could become technically savvy without "new theories to reorient the law"<sup>252</sup> or serious efforts to learn technology, the foregoing discussion indicates that any such belief would be, at best, aspirational.

### B. The Difficulty of Counteracting the Faster Horse Fallacy

Having discussed the reasoning process that causes the faster horse fallacy, a natural next step is to discuss how to solve that problem or, at the very least, ameliorate it. Before starting that discussion in Part IV, Section III.B further justifies the need for a solution by documenting some of the difficulties that practitioners encounter in avoiding the faster horse fallacy in the status quo.

First, lawyers may underestimate the prevalence of the faster horse fallacy, such that they do not recognize it when it occurs. Specifically, even if lawyers know what the faster horse fallacy is, they might believe that it could not be used to describe a technology which is sufficiently new. One might argue that, if a new technology is so advanced that it lacks any resemblance to existing technology, lawyers could not draw any analogies between the new technology and any existing technology because analogies require some similarity between the things being compared. In the alternative, the claim may be, any attempted analogy between the radically advanced technology and an existing one would be so obviously faulty that even the most technologically inept lawyer could easily identify it as a false analogy. For illustration, consider this definition of analogies in an article contemplating the propriety of analogizing cyberspace operations to electronic warfare:

Analogy relies on comparing items that are similar, not identical, which means that every analogy will compare items that are dissimilar to some degree. The fact that dissimilarity is built into every analogy means there is always danger of taking the comparison too far by pronouncing items alike that are not genuinely similar. Indeed, the more an item strays from its comparator, the more likely it is that the item is more similar to something else and, therefore, *is* something else. Unless this slide away from the comparator is arrested, the result is false equivalence of the items compared. Sufficient arrest comes from a firmly rooted comparator and a demand for close similarity of the items compared to it. Only then is an analogy precise enough to mitigate the risk of false equivalence.<sup>253</sup>

This is an entirely accurate description of what makes an analogy useful and another analogy false. Consider an attempted analogy between, say, the traditional technology required to harvest lumber for conversion into planks of wood, and the technology required to produce industrial-grade steel. Given the paucity of similarities between cutting down and chopping up wood<sup>254</sup> and applying advanced principles of metallurgy,<sup>255</sup> an attempted analogy between the two technologies would likely appear suspect to even the most technologically unfamiliar member of the legal profession.

<sup>&</sup>lt;sup>251</sup> See supra notes 239-45 and accompanying text.

<sup>&</sup>lt;sup>252</sup> Bartholomew, *supra* note 8 at 267.

<sup>&</sup>lt;sup>253</sup> Thomas R. Burks, *Cyberspace, Electronic Warfare, and A Better Jus Ad Bellum Analogy*, 82 A.F. L. REV. 1, 32–33 (2022).

<sup>&</sup>lt;sup>254</sup> See generally JOHN ENGLISH, HARVEST YOUR OWN LUMBER: HOW TO FELL, SAW, DRY, AND MILL WOOD (2015).

<sup>&</sup>lt;sup>255</sup> See generally Sujay Kumar Dutta & Yakshil B. Chokshi, Basic Concepts of Iron and Steel Making (2020).

A problem with the belief that the faster horse fallacy would not apply to sufficiently new technology is that, as discussed, lawyers often conflate a product with its underlying technology. Even if a technology is sufficiently newer than an existing one that the two cannot reasonably be compared, the *products* that use those technologies could be designed for similar uses by laypeople, so that lawyers could draw seemingly useful analogies between the products. For example, even though the technology needed to harvest lumber and convert it into planks would be very different from the technology needed to produce industry-grade steel, the products that those technologies respectively produce—say, wagons and cars—are both made to haul people or cargo. So, a "court evaluating whether a statute written for wagons applies to automobiles might consider," among other things, the fact "that both [wagons and cars] are used as a means of conveyance."<sup>256</sup> Because the two *products* may appear compatible for analogies, lawyers could think that the underlying technologies of those products are fit for analogies as well, thus returning to the faster horse fallacy.

The second difficulty with the faster horse fallacy is that lawyers might *suspect* an analogy involving technology of being faulty, but they are unable to explain why due to their insufficient knowledge of the underlying technology. For example, a lawyer might suspect that email and mail are not suited for an analogy because the two technologies are too different from each other, despite being unable to point out exactly which of the differences between email and mail make an analogy between them logically faulty.<sup>257</sup> Even though email and mail would appear radically different in how they operate even to laypeople, not knowing about how the spambox works and how images in emails can frustrate delivery would prevent the lawyer from explaining why courts should not treat email as a faster, cheaper, and more reliable equivalent of mail for the purpose of notice.<sup>258</sup>

This problem of not being able to explain why an analogy involving technology is faulty becomes prominent in judicial rulings, when a dissenting judge suspects that the majority opinion relies on a faulty analogy but cannot persuade the rest of the court. Take, for example, a 2020 case in which the Federal Circuit held that a technology was ineligible for a patent because it simply does what "can be performed . . . by a human using a pen and paper" and "merely add[s] computer functionality to increase the speed or efficiency."<sup>259</sup> The dissent argued that analogizing to a human using a pen and paper oversimplifies the complex technology at issue, without specifically identifying what the complexity is and why the analogy to a human using a pen and paper is false:

The majority . . . reasons that the claims are for an abstract idea because "controlling access to resources is exactly the sort of process that 'can be performed in the human mind, or by a human using a pen and paper." The majority discards the vast evidence of technological complexity and advance, and announces that the system "merely add[s] computer functionality to increase the speed or efficiency of the process." There was no evidence that this complex multi-level digital method can be performed by pen and paper. The claimed system was not shown or suggested to be a computer substitute for pen and paper as the majority now finds.<sup>260</sup>

<sup>&</sup>lt;sup>256</sup> Crootof & Ard, *supra* note 233, at 391.

<sup>&</sup>lt;sup>257</sup> *Cf.* Oskar Liivak, *Establishing an Island of Patent Sanity*, 78 BROOK. L. REV. 1335, 1339 (2013) (describing the "conventional view" that "a market model [designed for public goods] is not suitable for the patent system" because "[t]echnological information is thought to be too different from the well-understood world of tangible goods."). <sup>258</sup> *See supra* Part I.

 <sup>&</sup>lt;sup>259</sup> Ericsson Inc. v. TCL Communications Technology Holdings Ltd., 955 F.3d 1317, 1317, 1327, 1330 (Fed. Cir. 2020).
 <sup>260</sup> Id. at 1337-38 (internal citations omitted).

The dissent impliedly assumes that "vast evidence of technological complexity" alone shows why an analogy to a pen and paper is an oversimplification.<sup>261</sup> The dissent may well be correct that the technology is too complex for that analogy. However, from a layperson's perspective, the fact that a technology is complex does not necessarily mean that it is too complex for an analogy to portray accurately. If anything, complexity is precisely what makes analogies seem appealing and useful to laypeople. A persuasive argument against an analogy must point to exactly what part of the technology's complexity makes the analogy false. Unfortunately, the entire basis of the dissent's argument that the analogy is oversimplifying is merely the fact that the technology is complex and "[t]he claimed [technology] was not shown or suggested to be a computer substitute for pen and paper"<sup>262</sup>—even though the lack of positive evidence is not the same thing as negative evidence.<sup>263</sup>

This is not to suggest that lawyers can never spot the faster horse fallacy and explain why it is an error. When the technologies at issue are simple enough, the fallacy is apparent—just as it does not take medical school to diagnose a patient whose head is missing. For example, scholars have cautioned that understanding a hard drive as a larger file cabinet "oversimplifies a complex area of Fourth Amendment doctrine and . . . modern computer storage."<sup>264</sup> A detailed explanation as to why this comparison is an example of the faster horse fallacy is unnecessary to any lawyer who has ever used both a file cabinet and a computer: a file cabinet might not hold all the files for even a single case, whereas a computer can easily hold the files for hundreds of cases. At the same time, a computer is not just a larger file cabinet because a file cabinet does not have the search function that a computer does, which can comb through thousands of files in a matter of seconds.

The problem is that courts must count on encountering more complicated products than file cabinets and hard drives, and thus analogies that might not easily reveal themselves as faulty, in times to come—as technology will likely become more complex. Analogies that oversimplify complex technologies are so appealing that lawyers continue to use them even when they are told that at least some of those analogies must be false as a matter of logic. Thus, to know why these seemingly persuasive analogies are faulty, it may be unavoidable for lawyers to learn the complex technology itself. In *United States v. Bosyk*, the government had probable cause to suspect that the defendant knowingly accessed child pornography online.<sup>265</sup> The government had evidence that "an IP address associated with [the defendant's house] accessed [a] link" to child porn;<sup>266</sup> an IP address is a unique identifier for a computer accessing the internet.<sup>267</sup> But the link, "a string of letters and numbers with no discernible . . . meaning," did not indicate that it leads to child porn, prompting a dispute over whether the defendant clicked the link to download child pornography.<sup>268</sup>

<sup>&</sup>lt;sup>261</sup> *Id.* at 1338.

<sup>&</sup>lt;sup>262</sup> Id.

<sup>&</sup>lt;sup>263</sup> *Cf. Negative Evidence*, BLACK'S LAW DICTIONARY (11th ed. 2019) ("[A] positive assertion that a witness saw an event is a stronger statement than an assertion that a witness did not see it.").

<sup>&</sup>lt;sup>264</sup> Raphael Winick, Searches and Seizures of Computers and Computer Data, 8 HARV. J.L. & TECH. 75, 110 (1994); see also Orin S. Kerr, Searches and Seizures in A Digital World, 119 HARV. L. REV. 531, 533 (2005) ("Computers are like containers in a physical sense, homes in a virtual sense, and vast warehouses in an informational sense.").
<sup>265</sup> United States v. Bosyk, 933 F.3d 319, 322 (4th Cir. 2019).

<sup>&</sup>lt;sup>266</sup> Id.

<sup>&</sup>lt;sup>267</sup> See United States v. Forrester, 512 F.3d 500, 510 n.5 (9th Cir. 2008) ("Every computer or server connected to the Internet has a unique IP address.").

<sup>&</sup>lt;sup>268</sup> Bosyk, 933 F.3d at 344.

Arguing that the defendant did click on the link knowingly, the government compared him to a person visiting a physical address, arguing that "someone using Defendant's IP address was in the wrong place at a certain time."<sup>269</sup> Dissenting from the denial of rehearing en banc, Judge James Wynn criticized this analogy through "a comparison of two analogies," both of which "start with what seems like a reasonable . . . metaphor that describes how a . . . user experiences the internet" but "ultimately suggest opposing conclusions."<sup>270</sup> Even though at least one of these analogies must be false, "[b]oth conclusions are 'right' according to their analogy's logic"<sup>271</sup>:

In the first analogy, we begin in a building. This building is the confines of the internet.... We see a door with a sign that advertises child pornography. The door is the download link .... We open that door and encounter ... child pornography and the Defendant. If we believe the door we used was the only door to that place ... we can reasonably conclude that Defendant is seeking child pornography.

In the second analogy, we begin on a field. . . . We see a sign that points in a direction and advertises child pornography. . . . We follow the sign[] . . . and . . . reach a place [with] a cache of child pornography on the ground. We also encounter Defendant in the immediate vicinity, but we did not see where he came from. Because there are no walls in this environment to direct traffic, we cannot . . . conclude that Defendant, like us, followed the sign advertising child pornography.<sup>272</sup>

These analogies are mutually exclusive because one act could not have figuratively taken place in both a building and a field. Judge Wynn stressed that he "does not seek to explain the internet," but "seeks to explain a foundational fault" in the logic of the government's comparison of the internet to rooms in a building.<sup>273</sup> He concluded that "[e]very analogy can only go so far," which "is why courts depend on . . . the parties" to "explain technical issues, and to explain them well."<sup>274</sup>

Judge Wynn's caution against using oversimplifying analogies is persuasive, but it is the kind of argument which will likely persuade only those who are already inclined to agree with it. The fact that two analogies cannot both be true will not necessarily persuade laypeople to become skeptical about both analogies, because one of those analogies could still be true. Judge Wynn's argument is like trying to dissuade two people from buying lottery tickets by saying that at least one of them will lose. While both might be persuaded that lottery tickets are a waste of money, they could just as easily think that one of them can still win. This is exactly the premise of lottery advertisements: as the New York lottery put it, "hey, you never know."<sup>275</sup> This example illustrates that, to identify the faster horse fallacy reasonably well, lawyers must study the technology itself and learn why particular features of a technology make it unsuitable for an analogy. This point is obvious to Judge Wynn, because he criticizes what he considers to be a "preference to avoid taking the internet on its own terms, to avoid learning new rules and starting from logical scratch."<sup>276</sup>

 <sup>&</sup>lt;sup>269</sup> United States v. Bosyk, 786 F. App'x 398, 399 (4th Cir. 2019) (Wynn, J., statement in denial of rehearing en banc).
 <sup>270</sup> Id.

<sup>&</sup>lt;sup>271</sup> Id.

<sup>&</sup>lt;sup>272</sup> *Id.* at 399-400.

<sup>&</sup>lt;sup>273</sup> *Id*. at 400.

<sup>&</sup>lt;sup>274</sup> Id.

<sup>&</sup>lt;sup>275</sup> See Jody Azzouni, Attributing Knowledge: What It Means to Know Something 362 (2020).

<sup>&</sup>lt;sup>276</sup> *Bosyk*, 786 F. App'x at 399.

Unfortunately, as Judge Wynn goes on to state, "courts depend on . . . the parties . . . to explain technical issues, and to explain them well."<sup>277</sup> Even though educating courts on issues of technology is not left *entirely* up to interested parties,<sup>278</sup> a significant share of that important task is. Sometimes, courts go further than relying on parties for technological education and effectively farm out the technological decisions themselves to the litigants: recall that courts too often rubber-stamp the design decisions of claims administrators retained by the litigants in sending out email settlement notices.<sup>279</sup> As long as the task of educating the courts on technology is left to litigants, parties will likely use whichever analogies that best advance their interests, regardless of whether they are logically sound, and courts will continue to accept the ones they find appealing. In *Bosyk*, "the magistrate judge, the district court, and the [panel] majority,"<sup>280</sup> as well as all active circuit judges other than Judge Wynn, apparently accepted the government's analogy comparing clicking on an internet link to voluntarily visiting a building and intentionally opening the door to a room.<sup>281</sup>

It is not Judge Wynn's job to get the entire legal profession to shun the faster horse fallacy. At most, his job is to persuade his fellow judges on the Fourth Circuit to vote with him when he correctly spots the faster horse fallacy in action. But it is the job of scholars to figure out how to equip the courts to do that should the need arise and, as Part III has described, studies of how the legal profession misunderstands technology have been underwhelming. In the case of scholarship on "legal salience," taking that advice would lead directly to the faster horse fallacy due to existing works' failure to distinguish a product from its underlying technology. Part III having identified the cause of the faster horse fallacy, Part IV discusses what may be done to counter or mitigate it.

#### IV. A SHORT-TERM SOLUTION TO THE FASTER HORSE FALLACY: THE USER'S MANUAL

Part III traced the origin of the faster horse fallacy to a tendency to conflate a product with its underlying technology. This failure to distinguish product from technology is consistent with an implied or express belief that lawyers need not study technology or otherwise become proficient in it to use or regulate technology effectively. For example, the scholarly advice to focus on "legal salience" would effectively induce lawyers to understand technology according to how they would use it, which is no different from the typical consumer's perspective: a "court evaluating whether a statute written for wagons applies to automobiles might consider," most prominently, the fact "that both [wagons and cars] are used as a means of conveyance."<sup>282</sup> While this functionalist view is fine for someone who merely needs enough knowledge about cars to drive them, it is insufficient for the legal system, which needs to regulate how people use cars. Therefore, Part III concluded, lawyers must learn technology or otherwise become technologically proficient to some degree. This conclusion naturally leads to a difficult question: how would lawyers acquire such proficiency?

If the question is, how does one acquire genuine technological proficiency, there is no real answer other than to be trained in technology. If there were shortcuts to *true* mastery of technology,

<sup>&</sup>lt;sup>277</sup> *Id.* at 400.

<sup>&</sup>lt;sup>278</sup> See Fed. Jud. Ctr., supra note 86 (warning that poorly designed class action settlement notices may go to spam).

<sup>&</sup>lt;sup>279</sup> See supra notes 73-84 and accompanying text.

<sup>&</sup>lt;sup>280</sup> Bosyk, 786 F. App'x at 400.

<sup>&</sup>lt;sup>281</sup> *Id.* at 398 (showing the votes of active circuit judges on the petition for rehearing en banc).

<sup>&</sup>lt;sup>282</sup> Crootof & Ard, *supra* note 233, at 391.

years-long programs to train engineers would be pointless. However, converting the typical law degree into a joint program with engineering would be infeasible, given how expensive legal education already is.<sup>283</sup> Even if transforming legal education in such a way were possible, it would occur only in the long run. Thus, the challenge in addressing technological ineptitude is to design institutions that would enable lawyers, who are not trained in technology, to nevertheless use or regulate technology in their professional capacity reasonably effectively in a very short time frame.

Many existing works propose inserting technology experts into the judicial decisionmaking process. For example, some argue for "increased deployment of expert scientific personnel in the federal judiciary," in the form of "technical advisors [and] experts" assisting judges with "complex scientific issues in civil or criminal practice."<sup>284</sup> Others even propose having "machine learning algorithms . . . advise judges" to "assist in sentencing" and "expert admissibility decisions," in the belief that "AI can provide the same . . . benefits to judges" as "consultative or advisory tools to save time and provide consistency to decisions" when "sophisticated science and technology are at issue."<sup>285</sup> Assuming that these experts and algorithms dispense sound advice, the benefit from having them in the judicial decisionmaking process is clear: the legal system would be more likely to make correct decisions on technology, without having to train judges in complex technology.

But placing technology experts directly in the judicial decisionmaking process can present downsides, depending on how it is implemented. Even when the experts are *outside* the courts—for example, in agencies—courts can risk deferring too much.<sup>286</sup> This problem could become even worse when the experts are in the judiciary. What is theoretically supposed to be experts simply advising judges on technology could result in experts making the decisions themselves, because judges' lack of training in technology renders them unable to understand the advice they are given. Judges may be particularly unlikely to understand advice on decisions involving technology if the decisions must be made during trial, in which case they can be numerous and may have to be made with short notice.<sup>287</sup> This rubber-stamping problem would definitely occur if, as some advocate, constitutionally required decisionmakers were to be outright replaced by experts. For example, requiring jurors to have "at least a bachelor's degree in a scientific or technical field . . . to hear patent cases"<sup>288</sup> may result in litigants being robbed of their right to trial by a jury of their peers.<sup>289</sup>

<sup>&</sup>lt;sup>283</sup> Richard A. Matasar, *The Viability of the Law Degree: Cost, Value, and Intrinsic Worth*, 96 IOWA L. REV. 1579, 1581 (2011) ("Tuition charges at state-supported law schools, traditionally the least expensive places to gain a law degree, are rising at an even faster pace than that of private schools.").

<sup>&</sup>lt;sup>284</sup> Kondo, *supra* note 225, at 1.

<sup>&</sup>lt;sup>285</sup> Pamela S. Katz, *Expert Robot: Using Artificial Intelligence to Assist Judges in Admitting Scientific Expert Testimony*, 24 ALB. L.J. SCI. & TECH. 1, 33 (2014).

<sup>&</sup>lt;sup>286</sup> Banks Miller & Brett Curry, *Experts Judging Experts: The Role of Expertise in Reviewing Agency Decision Making*, 38 LAW & SOC. INQUIRY 55, 58 (2013) (discussing "how much deference is too much deference).

<sup>&</sup>lt;sup>287</sup> *Cf. United States v. Adams*, 375 F.3d 108, 111 (1st Cir. 2004) ("Trial judges . . . mak[e] balancing decisions [between the relevance and prejudicial effect of evidence] . . . often under time pressure . . . ."); Hon. Donald J. Venne, *Judicial Use of Computers in Making Decisions*, 39 JUDGES' J. 9, 12 (2000) ("Judicial decision making is a difficult job. Many decisions by trial judges are made immediately from the bench . . . .").

<sup>&</sup>lt;sup>288</sup> Joshua L. Sohn, *Specialized Juries for Patent Cases: An Empirical Proposal*, 18 U. PA. J. BUS. L. 1175, 1177 (2016).

<sup>&</sup>lt;sup>289</sup> See, e.g., Henry v. State Farm Ins. Co., 788 F. Supp. 241, 244 (E.D. Pa. 1992) (an alternative dispute resolution scheme may "wrest from the people their fundamental, time-honored constitutional right to have [a] matter adjudicated by the insured's peers, rather than the insurer's hand-picked panel of physician peers. Under our constitution, a jury of one's peers means a fair sampling of a cross-section of the citizenry of the vicinage in which the case is to be tried.").

I propose a different means of enabling lawyers to use technology reasonably proficiently without having to be trained in it. The goal is to leverage the advice of technology experts without placing them in the judicial decisionmaking process, and to give courts enough time to understand and consider the advice they are given. The idea is to create a set of procedural rules, akin to local rules of practice or the Federal Rules of Civil Procedure, that instruct courts on how to use certain types of technology that courts encounter frequently—such as email.<sup>290</sup> These rules, created by the courts with the aid of experts sitting on advisory committees that resemble the ones in the status quo,<sup>291</sup> aim to mimic a user's manual. A manual teaches people how to use a product, not to learn the underlying technology. As such, these rules of technology would not explain why class action settlement emails should avoid the use of images, but simply instruct courts to avoid images in such emails. These rules would enable courts to do what scholars demand of them, but cannot do in the status quo: "actively analyze and supervise" email notice despite their lack of expertise.<sup>292</sup>

I envision these rules, which I call the rules of technology (RT), as an improved version of the 2010 guide from the Federal Judicial Center on class action settlement notices in two respects. First, the RT would give concrete instructions on how to use technology. Recall that the Federal Judicial Center's guide cautions that "the influx of 'SPAM' e-mail messages can cause valid e-mails to go unread,"<sup>293</sup> but it does not tell judges what they can actually do to prevent emails from being delivered to the spambox. The guide states only the following about the risks of spam emails:

If available, parties should use postal mailing addresses, which are generally more effective than e-mail in reaching class members . . . . the influx of "SPAM" e-mail messages can cause valid e-mails to go unread. If e-mail will be used—e.g., to active e-mail addresses the defendant currently uses to communicate with class members—be careful to require sophisticated design of the subject line, the sender, and the body of the message, to overcome SPAM filters and ensure readership.<sup>294</sup>

Because the guide says nothing about what such "sophisticated design" entails, it is not surprising that federal courts overseeing class action settlements farm out the task of designing email notices to the litigants—even as they cite a guide supposedly telling them how to design such notices.<sup>295</sup>

The second way in which the RT would improve on the Federal Judicial Center's guide is that the RT would be binding. Any useful instructions the guide may have can easily go unheeded because it is not binding. This means that the courts currently rely on the initiative of individual judges, who may or may not be proficient in technology, to counteract the faster horse fallacy and

<sup>&</sup>lt;sup>290</sup> 28 U.S.C. § 2072(a) (permitting the Supreme Court to "prescribe general rules of practice and procedure"); Fed. R. Civ. P. 83(a)(1) (authorizing federal district courts to create and amend rules of practice by votes of their active judges); Fed. R. App. P. 47(a)(1) (authorizing federal appellate courts to do the same).

<sup>&</sup>lt;sup>291</sup> 28 U.S.C. § 2077(b) ("Each court . . . shall appoint an advisory committees for the study of the rules of practice . . . and, in the case of an advisory committee appointed by a court of appeals, of the rules of the judicial council of the circuit. The advisory committee shall make recommendations to the court concerning such rules and procedures."); 28 U.S.C. §§ 331, 2073 (authorizing the Judicial Conference of the United States, to which the Supreme Court has delegated its rulemaking authority, to "hold hearings" and take testimony in "the exercise of its authority.").

<sup>&</sup>lt;sup>293</sup> Fed. Jud. Ctr., *supra* note 86, at 3.

<sup>&</sup>lt;sup>294</sup> Id.

<sup>&</sup>lt;sup>295</sup> See, e.g., In re Packaged Seafood Prod. Antitrust Litig., No. 15MD2670 DMS(MDD), 2023 WL 2483474, at \*2 (S.D. Cal. Mar. 13, 2023).

other misperceptions of technology. In contrast, a binding set of rules giving specific instructions on how to use technology would give the courts a consistent, baseline level of proficiency in the technologies covered by the rules, regardless of which individual judge may be in charge of a case.

The next question to consider is how such a set of rules could be enacted. Excluding the unrealistic prospect of Congress legislating the RT<sup>296</sup> leaves judicial rulemaking, which presents two avenues. First, the Supreme Court could, at least in theory, enact the RT under its authority to "prescribe general rules of practice and procedure" that apply to all federal courts, such as the Federal Rules of Civil Procedure, under the Rules Enabling Act.<sup>297</sup> The RT could be amended periodically to reflect technological changes, just as other federal procedural rules are updated from time to time.<sup>298</sup> The Judicial Conference of the United States, to which the Supreme Court has delegated its rulemaking authority,<sup>299</sup> can "hold hearings" and hear testimony in "the exercise of its authority."<sup>300</sup> The Conference could take testimony from experts in preparing the RT. This Article is far from the first to contemplate changes to procedural rules that govern all federal courts, such as the Rules of Civil Procedure and Evidence, in response to technological developments.<sup>301</sup>

But I submit that creating an entirely new set of federal procedural rules through the Rules Enabling Act is just as unrealistic as expecting Congress to do such a thing. Once upon a time, a diligent academic would be appointed Reporter to the Advisory Committee on Civil Rules under the Judicial Conference and would draft sweeping changes to federal rules, such as Rule 23 of the Federal Rules of Civil Procedure, which in turn the Supreme Court would swallow without much resistance.<sup>302</sup> Now, however, the rulemaking process under the Rules Enabling Act is properly described as byzantine, in which "proposed Rules move through . . . the Advisory Committee, the Standing Committee, the Judicial Conference, the Supreme Court, and Congress."<sup>303</sup> Even if, by some miracle, the Rules Enabling Act's rulemaking process could produce a well-designed RT that effectively regulates judicial uses of technology, updating the RT in a timely fashion using the same rulemaking process to keep up with technological changes may be effectively impossible.

A more realistic path to enacting the rules of technology would be the second avenue for federal judicial rulemaking: local rules. Under Federal Rule of Civil Procedure 83<sup>304</sup> and Federal

<sup>&</sup>lt;sup>296</sup> *Cf.* Michael J. Teter, *Recusal Legislating: Congress's Answer to Institutional Stalemate*, 48 HARV. J. ON LEGIS. 1, 7 (2011) (congressional gridlock reflects the fact that Congress is "not an ideal place to enact policies with generalized benefits but specific costs.").

<sup>&</sup>lt;sup>297</sup> 28 U.S.C. § 2072(a).

 <sup>&</sup>lt;sup>298</sup> Cf. John O'Shea Sullivan, Leesa M. Guarnotta & Grace B. Callanan, *Trial Practice and Procedure*, 74 MERCER L.
 REV. 1499, 1518 (2023) ("On December 1, 2022, Federal Rule of Civil Procedure 7.1 was amended . . . .").
 <sup>299</sup> 28 U.S.C. § 2073.

<sup>&</sup>lt;sup>300</sup> 28 U.S.C. § 331.

<sup>&</sup>lt;sup>301</sup> See, e.g., Andrea Roth, *Machine Testimony*, 126 YALE L.J. 1972, 2017 (2017) (proposing changes to rules of evidence to accommodate behavioral evidence stored in personal electronic devices, such as location data in iPhones and Fitbits); A. Benjamin Spencer, *The Preservation Obligation: Regulating and Sanctioning Pre-Litigation Spoliation in Federal Court*, 79 FORDHAM L. REV. 2005, 2022 (2011) (proposing to amend the Federal Rules of Civil Procedure to include a "preservation obligation" of, among other things, "electronically stored information").

<sup>&</sup>lt;sup>302</sup> See Richard Marcus, *Reviving Judicial Gatekeeping of Aggregation: Scrutinizing the Merits on Class Certification*, 79 GEO. WASH. L. REV. 324, 342 (2011) (Professor Benjamin Kaplan, who "drafted the 1966 changes to Rule 23").

<sup>&</sup>lt;sup>303</sup> Kirin K. Gill, Comment, *Depose and Expose: The Scope of Authorized Deposition Changes Under Rule 30(e)*, 41 U.C. DAVIS L. REV. 357, 364 (2007).

<sup>&</sup>lt;sup>304</sup> See Fed. R. Civ. P. 83(a)(1).

Rule of Appellate Procedure 47,<sup>305</sup> federal district courts and courts of appeals can create and amend rules governing their practice by a vote of their active judges, following a period of public notice and opportunity for comment. Enacting rules by a simple majority vote of active judges after a relatively short public notice and comment process<sup>306</sup> is, quite clearly, much simpler than the labyrinthine rulemaking process under the REA. A downside to enacting rules of technology through local rules may appear to be that the rules produced by each federal court would bind only that court, whereas rules enacted under the REA would bind all federal courts to one set of rules.

But there is a way for such local rules to become national rules, along with an advantage to making a set of national rules out of local rules created by the federal district courts and courts of appeals, compared to having the Supreme Court enact a set of national rules from the beginning under the REA. A robust literature in American political science studies the process of diffusion—how a policy created by one state can be copied by the other states to eventually create a national policy.<sup>307</sup> In many cases, bystander states observe how policies created by a handful of pioneer states pan out before adopting a policy that proved itself to be superior.<sup>308</sup> This idea was long ago popularized by Justice Louis Brandeis, who referred to the states as laboratories of democracy that test experimental policies "without risk to the rest of the country."<sup>309</sup> Compared to having the Supreme Court enact a set of national rules without an opportunity for testing, having numerous federal courts test out different incarnations of the RT could provide a valuable opportunity to iron out potential errors—which is certainly a possibility when courts enact rules governing technology.

This is not to say that a set of local rules intended to spread throughout the nation by policy diffusion would *eliminate* concerns such as the difficulty of making binding rules and insufficient uniformity. Even though local rules would likely be more realistic and take less time than creating a nationally binding set of rules under the Rules Enabling Act, local rules on technology use would still require a large amount of labor on the part of judges and subject-matter experts, as well as a majority vote of judges. And one can argue that *any* amount of delay in creating or amending rules that govern the use of technology is a significant disadvantage, given the speed at which modern technology evolves.<sup>310</sup> If the sole objective in designing a user's manual for technology were to minimize the time it takes to write or update it, the best way to go would probably be a detailed version of the 2010 guide from the Federal Judicial Center—one that actually tells judges what to do to in order to minimize the likelihood of class action settlement emails going to the spambox.<sup>311</sup>

<sup>306</sup> See, e.g., U.S. Court of Appeals for the Ninth Circuit, Proposed Revisions to Circuit Rule 4-1 (Counsel in Criminal Appeals), *available at* <u>https://cdn.ca9.uscourts.gov/datastore/uploads/rules/prop\_amendments/public-comment-package-4-1.pdf</u> (public notice and comment period of less than six months) (June 23, 2023).

<sup>&</sup>lt;sup>305</sup> See Fed. R. App. P. 47(a)(1).

<sup>&</sup>lt;sup>307</sup> *Cf.* Charles R. Shipan & Craig Volden, *The Mechanisms of Policy Diffusion*, 52 AM. J. POL. SCI. 840 (2008) (theory and evidence of policy diffusion, the process by which states adopt successful policies created by other states).

<sup>&</sup>lt;sup>308</sup> See Todd Makse & Craig Volden, *The Role of Policy Attributes in the Diffusion of Innovations*, 73 J. POL. 108 (2011) (proposing five attributes of a policy that make it more likely than another policy to be adopted by a state). <sup>309</sup> New State Ice Co. v. Liebmann, 285 U.S. 262, 311 (1932) (Brandeis, J., dissenting).

<sup>&</sup>lt;sup>310</sup> See, e.g., Orin S. Kerr, *Congress, the Courts, and New Technologies: A Response to Professor Solove*, 74 FORDHAM L. REV. 779, 783 (2005) ("When technology is changing quickly, it is ideal for the law to change quickly along with it.").

it."). <sup>311</sup> See Fed. Jud. Ctr., *supra* note 86 (advising judges to be "careful to require sophisticated design of the subject line, the sender, and the body of the message, to overcome SPAM filters and ensure readership" with no further details).

But, too often, "there are no 'solutions' but only trade-offs."<sup>312</sup> Speed is indeed important in policy responses to technology, and having the Federal Judicial Center (or some other body of experts) write and update a judicial user's manual for technology would increase the likelihood that it accurately reflects the state of the cutting-edge technology as promptly as possible. However, circumventing the judicial rulemaking process means that the manual would not be binding. Hence, regardless of how well such a manual is written, judges may respond to it in the same way that they respond to the Federal Judicial Center's existing 2010 guide: effectively ignore it.<sup>313</sup> Even if judges do faithfully follow the suggestions in a hypothetical, well-designed manual written by a body of well-qualified experts, the concern of excessive deference would re-emerge, given that the judiciary would have had no input and would not have formally consented to adopting that manual as governing rules. The model of the RT I propose would permit judges to genuinely consider the expert advice that they are given, admittedly in exchange for sacrificing some amount of speed.

Having settled on judicial rules created through the local rulemaking process, the next issue to discuss is the RT's scope. The RT could not cover all technologies a court might theoretically encounter, because the total would effectively amount to infinity in this age of rapid technological evolution. Trying to cover every technology the courts could face at some point would make the RT unmanageably long and thus impossible to obey—just as "to defend everything" in war "is to defend nothing."<sup>314</sup> Even if the RT *could* cover every kind of technology imaginable, the fact remains that some of those technologies covered would be used much less frequently than others. For the technologies that the courts would rarely use but a comprehensive RT would have to cover, the cost of creating an elaborate manual explaining how to use them may not be worth the benefit.

To make the proposed RT a realistic prospect and to derive the best value for money, the RT would cover technologies that courts commonly use for procedural purposes, such as email in class actions and TAR tools in discovery. The RT could affect only the procedural consequences of judicial uses of technology because the RT would be created pursuant to a judicial rulemaking process.<sup>315</sup> Despite this limitation, I submit that focusing on a limited set of technologies used for procedural purposes would create a high return on the investment required to create an elaborate manual for the proper use of those technologies, given the large number of cases that would use those technologies: for example, email used to facilitate notice or TAR tools used for discovery.

As for what the RT might specifically say about the use of such technologies, the RT could instruct courts facilitating class action settlement notices to limit the use of images in emails. The RT could also lay down certain requirements for litigants who use TAR tools for discovery. In the status quo, a lack of clear rules on how litigants must implement TAR frequently leads to disputes over implementation details, which judges resolve on a case-by-case basis. In disputes on whether one litigant should disclose its seed set to the other, courts have "declined to mandate disclosure,"

<sup>&</sup>lt;sup>312</sup> THOMAS SOWELL, THE VISION OF THE ANOINTED: SELF-CONGRATULATION AS A BASIS FOR SOCIAL POLICY 146-47 (1995).

<sup>&</sup>lt;sup>313</sup> See, e.g., Kaufman, 283 F.R.D. at 408 (citing the Federal Judicial Center's guide but still farming out the design of the email settlement notice to a claims administrator appointed by the litigants).

<sup>&</sup>lt;sup>314</sup> EDWIN J. DELATTRE, CHARACTER AND COPS: ETHICS IN POLICING 455 (2011) (quoting Frederick the Great).

<sup>&</sup>lt;sup>315</sup> See Fed. R. Civ. P. 83(a)(1) ("A local rule must be consistent with . . . 28 U.S.C. § 2072"); Fed. R. App. P. 47(a)(1) ("A local rule must be consistent with . . . 28 U.S.C. § 2072"); 28 U.S.C. § 2072(b) ("[R]ules shall not abridge, enlarge or modify any substantive right.").

"strongly encourage[d] disclosure," or "require[d] disclosure."<sup>316</sup> The RT could elaborate on when courts should choose which avenue: for example, the RT could let parties avoid full disclosure if they negotiate their own terms for disclosure.<sup>317</sup> Such rules could save the judiciary the time that would otherwise have been spent managing the same disputes repeatedly in individual cases and avoid potential inefficiencies caused by reaching different results depending on the presiding judge.

Although I have settled on local rules as the vessel for the RT because of the complications of the REA, this discussion does highlight the need to reform the byzantine judicial rulemaking process. Despite the academy's notorious reputation for "propos[ing] solutions with little practical success,"<sup>318</sup> many scholars have advanced well-grounded and well-considered proposals to amend federal procedural rules.<sup>319</sup> What makes those proposals "unrealistic" is not anything about the proposals themselves, but the fact that the rulemaking process under the REA is so labyrinthine as to make *any* proposal an unrealistic prospect for passage. The difficulty of enacting any change under the REA will become only more problematic in times to come, given the increasing influence of technology in all aspects of law and the increasing speed at which those technologies evolve.

Still another way to attempt to prevent courts from misusing technology, which would get around the difficulty of judicial rulemaking under existing processes, is to stick to what we have always done. As Judge Wynn put it, courts could continue to "depend on . . . the parties" to "explain technical issues, and to explain them well."<sup>320</sup> But, while relying on the parties to inform the courts on technology would certainly save the time and resources needed to write a new set of rules or to retrain the profession, it would likely be ineffective in preventing courts from misusing technology. As discussed, litigants appear to be *misinforming* the courts on technology: a company retained by a class action defendant claimed that it "designs the email notice to avoid may common 'red flags' that might . . . cause a . . . Class Member's spam filter to block . . . the email notice as spam,"<sup>321</sup> even as it included a video thumbnail that could force email clients to flag it as spam.<sup>322</sup>

One might defend the status quo by arguing that, under the adversary system, one party's attempts to mislead the court would be counteracted by the other party's equally strong incentive to get the court to see the truth. But this argument is unpersuasive for two reasons. First, under the adversary system, the winning party is not necessarily the one with the most factually accurate or morally admirable argument, as epitomized by the statement "[1]et justice be done—that is, for my client let justice be done—though the heavens fall."<sup>323</sup> Thus, even if one party tries to explain to a court that a class member might not have received her settlement email because it was delivered directly to her spambox, there is no guarantee that the presiding judge will listen. As happened in

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<sup>&</sup>lt;sup>316</sup> See Engstrom & Gelbach, *supra* note 145 at 1054-55 (discussing disputes between litigants over disclosing TAR seed sets and stating that some courts encourage disclosure, while other courts require it as a condition of using TAR). <sup>317</sup> See, e.g., *Rio Tinto PLC v. Vale S.A.*, 306 F.R.D. 125, 129 (S.D.N.Y. 2015) ("The Court . . . need not rule on the need for seed set transparency in this case, because the parties agreed to a protocol that discloses all non-privileged documents in the control sets.").

<sup>&</sup>lt;sup>318</sup> Jason C. Miller, *Who's Exposing John Doe? Distinguishing Between Public and Private Figure Plaintiffs in Subpoenas to ISPs in Anonymous Online Defamation Suits*, 13 J. TECH. L. & POL'Y 229, 230 (2008).

<sup>&</sup>lt;sup>319</sup> See, e.g., Roth, supra note 301; Spencer, supra note 301.

<sup>&</sup>lt;sup>320</sup> Bosyk, 786 F. App'x at 400.

<sup>&</sup>lt;sup>321</sup> In re Plaid, Inc., No. 4:20-CV-03056-DMR, Dkt. No. 139, at 4 (Aug. 6, 2021).

<sup>&</sup>lt;sup>322</sup> See supra Part I.A.

<sup>&</sup>lt;sup>323</sup> See FREEDMAN, supra note 118.

a case cited in Section I.A, the court might attribute it to the member's "bad luck or . . . decision,"<sup>324</sup> even though an email landing in spam for no fault of the recipient should not be described as such.

Second, assuming arguendo that the party with the factually correct argument tends to win out over the misleading party in the adversary system, that feature is unlikely to work when the argument concerns technology because both parties may fail to make accurate arguments, and judges are unlikely to be experts in technology. As discussed, the named plaintiffs and defendants in class actions have an incentive to collude for a mutually favorable settlement—for instance, one that gives the named plaintiffs a disproportionate cut of the settlement fund and releases the defendants from future claims—at the expense of the rest of the class.<sup>325</sup> Thus, named plaintiffs and defendants both have an incentive to design settlement notices to be emailed to the spambox while misleading the judge into thinking that they are doing their best to provide adequate notice.

Indeed, well beyond the context of class action settlements, existing works have shown how trusting the litigants to inform the courts about technical issues can go wrong very easily, even when the litigants might not be acting in bad faith. Prosecutors could get basic math and logic egregiously wrong by arguing that the defendant must be guilty of a murder, as the odds of another defendant with blonde hair in a ponytail committing the same murder is allegedly "only 1/30."<sup>326</sup> Anti-gerrymandering reformers might persuade federal courts that a redistricting plan is constitutional only if it fits a particular quantitative formula, thereby redefining citizens' right to fair representation to a right to have voting districts that fit a certain litigant's computer model.<sup>327</sup> A fundamental problem with trusting litigants to inform courts correctly on technology is that the outcome depends on one judge (or, at most, a panel of judges) and the parties to one case. In contrast, the RT would be written according to a rulemaking process controlled by the judiciary aided by experts chosen by the judiciary.<sup>328</sup> not by parties with private interests in a certain case.

Enacting the RT could create a subsidiary benefit, in addition to the main benefit of having the rules themselves: the experience from writing and improving them through an iterative process could independently contribute to overcoming the faster horse fallacy and have a similar effect as training the legal profession in technology in the long run. In the status quo, we rely on a dispersed group of judges who may or may not be technologically proficient, meaning that each judge's experience in successfully dealing with misperceptions of technology is unlikely to be preserved or aggregated. In contrast, with the RT, the judiciary would be forced to accumulate expertise in designing rules on technology. Continued revision of the RT, as well as its use in litigation, could even disperse experience in dealing with technology appropriately throughout the legal profession.

<sup>&</sup>lt;sup>324</sup> Cohorst, No. 3:10-CV-2666-JM-BGS, Dkt. No. 65, at 19.

<sup>&</sup>lt;sup>325</sup> See supra 49-50 and accompanying discussion.

<sup>&</sup>lt;sup>326</sup> See Lea Brilmayer & Yunsieg P. Kim, Model or Muddle? Quantitative Modeling and the Façade of "Modernization" in Law, 56 WASHBURN L.J. 1, 4 (2017) (citing People v. Collins, 438 P.2d 33 (Cal. 1968)).

<sup>&</sup>lt;sup>327</sup> See Jacob Eisler, *Partisan Gerrymandering and the Constitutionalization of Statistics*, 68 EMORY L.J. 979, 983 (2019) ("Judicial adoption of a radically new definition of rights as quantitative outcomes would be . . . problematic. It would transform the role of statistical analysis from providing evidence of rights violations to defining the content of rights. Government conduct might be lawful or unlawful depending upon (non)conformity to metrical tests. This would distort the role and nature of constitutional law.").

<sup>&</sup>lt;sup>328</sup> 28 U.S.C. § 2077(b) ("Each court . . . shall appoint an advisory committees for the study of the rules of practice . . . and, in the case of an advisory committee appointed by a court of appeals, of the rules of the judicial council of the circuit. The advisory committee shall make recommendations to the court concerning such rules and procedures.").

#### CONCLUSION

It is becoming increasingly important to learn how the legal system understands technology. Technology not only evolves quickly, but also evolves specifically to evade the strictures of the law.<sup>329</sup> Therefore, just as giving someone fish is only likely to feed that person for a day, teaching lawyers how some technology works at a particular point in time is unlikely to be useful for long. What we need is the technology equivalent of teaching people how to fish—equipping lawyers to better understand technology on their own (or, at the very least, reduce the risk of misperceiving technology) when they inevitably encounter new technology. This is all the more necessary given that lawyers must not only use technology themselves, but also regulate how others use it. In the eyes of the public, the fact that lawyers are not trained in technology would merely be an excuse, not a justification.<sup>330</sup> To enable the legal system to understand, use, and regulate technology more effectively, we first must learn how lawyers understand (and misunderstand) technology currently.

This Article contributes to that effort by examining a cognitive shortcut that comes naturally to lawyers, one that some scholars even promote as a useful tool for understanding technology,<sup>331</sup> but in fact encourages the legal system to misunderstand a wide variety of technologies in a broad range of legal contexts. Analogizing between a wagon and a car because both can haul people or cargo<sup>332</sup> is a perfectly acceptable heuristic for the typical consumer who need only use wagons or cars as vehicles. In contrast, the legal profession, which must regulate how typical consumers use wagons or cars, cannot afford to conflate the product with its underlying technology—lest that conflation prevent the law from regulating problems created by technological features unique to cars. In addition to documenting an overlooked way in which lawyers misperceive technology, this Article discusses how lawyers could be made to use technology reasonably proficiently in a short time frame, without going through the long-term training to needed for genuine proficiency.

Indeed, the faster horse fallacy could be even more detrimental to regulatory design than it is to the proper conduct of litigation because of a feature eternally inherent in government: budget constraints. Pressures to justify agency spending are often electoral, and thus arguably transitory— if recurrent.<sup>333</sup> Such pressures may be defused, whether by deft political maneuvering on behalf of an agency<sup>334</sup> or simply by the harsh realities of governing.<sup>335</sup> But pressures to cut spending are

<sup>&</sup>lt;sup>329</sup> See, e.g., Tara Wheatland, Note, Ashcroft v. ACLU: *In Search of Plausible, Less Restrictive Alternatives*, 20 BERKELEY TECH. L.J. 371, 386 (2005) ("Even if Congress can act quickly enough to legislate around new technologies, more technological change is always right around the corner, often ready to alter the balance struck by Congress."). <sup>330</sup> See, e.g., Mark A. Lemley, *The Contradictions of Platform Regulation*, 1 J. FREE SPEECH L. 303, 304 (2021)

<sup>(&</sup>quot;Everyone wants to regulate the big tech companies—Amazon, Apple, Facebook, and Google.").

<sup>&</sup>lt;sup>331</sup> See supra notes 234-37 and accompanying text (discussing legal salience).

<sup>&</sup>lt;sup>332</sup> Crootof & Ard, *supra* note 233, at 391.

<sup>&</sup>lt;sup>333</sup> Cf. Martin Rhodes & Maarten Keune, EMU and Welfare State Adjustment in Central and Eastern Europe, *in* ENLARGING THE EURO AREA: EXTERNAL EMPOWERMENT AND DOMESTIC TRANSFORMATION IN EAST CENTRAL EUROPE 279, 298 (2006) ("[In] Hungary . . . fiscal policy is closely tied to the electoral cycle.").

 <sup>&</sup>lt;sup>334</sup> See JOSEPH P. KEDDELL, THE POLITICS OF JAPANESE DEFENSE: MANAGING INTERNAL AND EXTERNAL PRESSURES
 1952 (2016) (Japanese Defense Agency successfully defied a 7.5 percent ceiling on budget increases imposed by the Ministry of Finance, by leveraging pressure from the United States against Japanese Prime Minister Zenkō Suzuki).
 <sup>335</sup> Cf. MICHAEL L. MEZEY, REPRESENTATIVE DEMOCRACY: LEGISLATORS AND THEIR CONSTITUENTS 33 (2008) ("A

sincere promise to cut taxes made during the election may prove to be unfeasible given the true budget situation that the representative discovers when he arrives in Congress.").

also often codified, meaning that this type is permanent. The law often requires agencies to decide whether a technology outperforms another one, and whether it is cheaper than another.<sup>336</sup> The Office of Information and Regulatory Affairs conducts cost-benefit analyses of any proposed rule that is "economically significant."<sup>337</sup> Therefore, regulators are obligated to take not only the most effective, but also the cheapest course of action. Whatever may be the case in theory, each of these objectives in practice is often advanced at the expense of the other; even more often in practice, unfortunately, the cheapest course of action prevails over the most effective course of action.<sup>338</sup>

This alignment of incentives, combined with an unfamiliarity with technology, produces an ideal environment to incubate the faster horse fallacy. The faster horse fallacy presents a new technology as a cheaper and better-performing equivalent of an older one, which would make the new technology appear to be the perfect choice for pursuing both efficacy and cost-cutting. But, in reality, the new technology would create new costs that the older technology does not, resulting in false economies. The added significance of the faster horse fallacy in the context of regulation is that the law would force agencies to make choices that are vulnerable to the faster horse fallacy on a recurrent basis—for example, whenever a new rule that is "economically significant" needs to be adopted.<sup>339</sup> Even if an agency is aware that a seemingly cheap technology creates more costs, and thus that it would create false economies, the agency may nevertheless adopt the technology for the sake of satisfying demands from less well-informed politicians and their constituents.<sup>340</sup>

For the foregoing reasons, studying the extent of the faster horse fallacy in regulatory evaluations of technology would provide a valuable avenue for future research, especially as technology becomes increasingly consequential in policy domains as disparate as environmental conservation<sup>341</sup> and regulatory responses to artificial intelligence, such as AI causing increasing automation of jobs and functions that were previously carried out manually.<sup>342</sup> As technology becomes more significant, so would the need to know how the profession tasked with regulating technology understands technology—or, as is more often the case, misunderstands it.

<sup>&</sup>lt;sup>336</sup> See, e.g., Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin., 45 F.3d 481, 485 (D.C. Cir. 1995) ("[T]he NHTSA analyzed the cost-effectiveness of various technological changes that manufacturers have used to meet fuel economy standards. That analysis showed that most of the technological changes paid for themselves with fuel savings over the first four years of ownership and that all but one were cost-effective over the life of the vehicle.").

 <sup>&</sup>lt;sup>337</sup> Exec. Order No. 13563, 76 Fed. Reg. 3821-23 (Jan. 21, 2011) (extending OIRA's authority to conduct cost-benefit analyses of any "economically significant" proposed rule to include retrospective reviews of existing regulations).
 <sup>338</sup> Jonathan R. Macey & Geoffrey P. Miller, *An Economic Analysis of Conflict of Interest Regulation*, 82 IOWA L.

REV. 965, 972 (1997).

<sup>&</sup>lt;sup>339</sup> See supra note 337 and accompanying text.

<sup>&</sup>lt;sup>340</sup> *Cf. Peter Kiewit Sons' Co. v. U.S. Army Corps of Eng'rs*, 534 F. Supp. 1139, 1143-44 (D.D.C. 1982), *rev'd on other grounds*, 714 F.2d 163 (D.C. Cir. 1983) (Director of the Army Corps of Engineers described a low bidder as "[p]erhaps at the top of my list" and recommended awarding a contract, but the bidder was denied a contract due to a "sequence of events beginning with criticism of the Corps of Engineers from [c]ongressional sources.").

<sup>&</sup>lt;sup>341</sup> See Michael A. Gollin, Using Intellectual Property to Improve Environmental Protection, 4 HARV. J.L. & TECH. 193, 193–94 (1991) ("Environmental protection is best achieved by coupling incentives for innovation in beneficial technologies with restrictions on harmful technologies."); Entergy Corp. v. Riverkeeper, Inc., 556 U.S. 208, 217 (2009) (the requirement to determine "the best technology available for minimizing adverse environmental impact" under 33 U.S.C. § 1326(b) "permits consideration of the technology's costs and of the relationship between those costs and the environmental benefits produced . . . .").

<sup>&</sup>lt;sup>342</sup> Jeffrey M. Hirsch, *Future Work*, 2020 U. ILL. L. REV. 889, 957 (2020) ("If we are entering a technology driven revolution, the ramifications are immense. Massive job losses, millions of workers falling through the gaps of already weak protections,  $\ldots$  are all on the table.")

APPENDIX: MOCK SETTLEMENT NOTICE EMAIL (WITH MOCK COMPANY LOGO)

Subject line: Tedgit Class Action Settlement Notice

Click here to view this message in a browser window.

Deadline to File Claims Approaching for Tedgit Class Action Settlement

Your Unique Claim / Reference Number: 991758302

Visit the settlement website and file your claim (or lodge an objection to the proposed settlement terms) at tedgitclassaction.com.

**This email is NOT an actual notice of class action settlement or any other legal proceeding.** This email does not put you in any legal jeopardy and does not give rise to any legal claim. This email is not commercial. This email was sent pursuant to a university-approved study of consumer behavior. The part of this email above the red line was intended to provide an illusion of a real settlement notice until the email was opened. Your email address was acquired from a third party (a marketing firm) in compliance with U.S. law. Excluding your email address, no personally identifying information was acquired or used for this study.

The purpose of this study is to examine whether an image in a proposed class action settlement notice delivered by email increases the likelihood that the email notice will land in the recipient's spam messages box. We attempted to minimize the risk of you believing that any real product you use was actually defective, by telling you that the product name is "Tedgit." To the best of our knowledge, no actual product name is, or bears meaningfully close resemblance to, "Tedgit."

This email tracks whether the recipient opened the email, using a commercial service. Whether you opened the email is the only information about your interaction with this email which this study uses. Once the study is completed, we will destroy all records of your email address.

If you have any concerns about your participation or the data you provided during the study, please discuss these concerns with us. We will be happy to provide you with any explanations or information to ease your concerns. The principal investigator for this study is Yunsieg Kim, Visiting Assistant Professor at the University of Missouri School of Law, and can be reached at ypkbht@umsystem.edu.

# Even though you previously consented to participating in this study, you have the option to have your data removed from the study. If you do not want your data to be used in this research, please inform the researcher and your data will be removed.

If you have questions about your rights as a research participant or want to report a complaint, please contact the Institutional Review Board at the University of Missouri at <u>umcresearchcirb@missouri.edu</u>. Thank you again for participating in this study.



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