

# COURT MANDATED TECHNOLOGY-ASSISTED REVIEW IN E-DISCOVERY: CHANGES IN PROPORTIONALITY, COST-SHIFTING, AND SPOILIATION

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*Burgeoning advanced technology-assisted review (TAR) methods challenge justifications for requesting parties' burdens and litigant cooperation in e-discovery. Increasingly accurate and accessible TAR introduces novel issues in e-discovery, including determining the proportionality of discovery requests and managing information in spoliation cases. This Essay recommends reconsidering the judiciary's role in e-discovery in light of new technology and argues that courts, particularly lower courts, need expert technical guidance to adequately address the issues e-discovery presents.*

## I. TECHNOLOGY-ASSISTED REVIEW IN E-DISCOVERY

Courts and legal technology experts recognize that TAR can be as good as, if not better than, human review in e-discovery.<sup>1</sup> Thus, courts have held there is no complete prohibition against TAR; however, courts can allow the reviewing party discretion in choosing the review method.<sup>2</sup> Despite this broad discretion, many courts have required reviewing parties to demonstrate

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1. See *Hyles v. New York City*, No. 10 Civ. 3119, 2016 U.S. Dist. LEXIS 100390, at \*6 (S.D.N.Y. Aug. 1, 2016); *Moore v. Publicis Groupe*, 287 F.R.D. 182, 191 (S.D.N.Y. 2012); Declaration of Adam I. Cohen in Support of Defendants' Brief in Opposition to Motion for Sanctions and Other Relief, *Delgado v. Ocwen Loan Servicing, LLC*, No. 1:13-cv-04427, at \*8–9 (E.D.N.Y. Jan. 29, 2018).

2. See *Livingston v. Chicago*, No. 16-cv-10156, 2020 WL 5253848, at \*1–4 (N.D. Ill. Sept. 3, 2020); *In re Mercedes-Benz Emissions Litig.*, No. 16-cv-881, 2020 WL 487288, at \*1, \*6 (D.N.J. Jan. 30, 2020); *Davine v. Golub Corp.*, No. 3:14-cv-30136, 2017 U.S. Dist. LEXIS 18109, at \*3 (D. Mass. Feb. 8, 2017); *EORHB, Inc. v. HOA Holdings, LLC*, C.A. No. 7409, 2013 Del. Ch. LEXIS 336, at \*1–2 (Del. Ch. May 6, 2013); see also Maura R. Grossman & Gordon V. Cormack, *Technology-Assisted Review in E-Discovery Can Be More Effective and More Efficient Than Exhaustive Manual Review*, 17 RICH. J.L. & TECH. 11, 61 (2011); Tonia Hap Murphy, *Mandating Use of Predictive Coding in Electronic Discovery: An Ill-Advised Judicial Intrusion*, 50 AM. BUS. L.J. 609, 633 (2013).

the accuracy of their proposed review method through statistical sampling and transparency in the TAR process.<sup>3</sup>

In the last ten years, storing and processing information has become significantly cheaper and faster.<sup>4</sup> Entities replaced overwritable backup tapes with user-friendly cloud storage and automated electronic information systems.<sup>5</sup> These technological advancements lower review costs, save time,<sup>6</sup> and make e-discovery more transparent and objective because they standardize the review process.<sup>7</sup>

Part I.A introduces how the Federal Rules of Civil Procedure (FRCP) guide e-discovery, including electronically stored information (ESI) requests, cost-shifting, and spoliation. Part I.B discusses judges' traditional role in discovery and recent e-discovery cases that challenge existing discovery norms.

### A. Federal Rules of Civil Procedure

Although the reviewing party usually chooses the review method, the requesting party may have a strong interest in which review method the reviewing party uses.<sup>8</sup> Given potential information asymmetries,<sup>9</sup> under the FRCP, requesting parties must show the requested information is “relevant to any party’s claim or defense and proportional to the needs of the case.”<sup>10</sup> The FRCP allows reviewing parties to receive protective orders against production, or they can shift discovery costs to the requesting party if “the information is not reasonably accessible because of undue burden or cost.”<sup>11</sup> And, under FRCP 26(b)(2)(C), the court *must* limit the extent of discovery if, among other reasons, the requesting party can obtain the discovery sought from a more convenient, less burdensome, or less expensive source.<sup>12</sup>

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3. See *In re Broiler Chicken Antitrust Litig.*, No. 1:16-cv-08637, 2018 U.S. Dist. LEXIS 33140, at \*34–51 (N.D. Ill. Jan. 3, 2018); *In re Actos Prods. Liab. Litig.*, MDL No. 6:11-md-2299, 2014 U.S. Dist. LEXIS 13307, at \*20–42 (W.D. La. Jan. 27, 2014); *Moore*, 287 F.R.D. at 200.

4. See Ralph C. Losey, *Predictive Coding and the Proportionality Doctrine: A Marriage Made in Big Data*, 26 REGENT U. L. REV. 7, 9 (2014).

5. See *id.* at 11–12.

6. See *id.* at 15.

7. See *id.* at 27–29.

8. See *Hyles v. New York City*, No. 10 Civ. 3119, 2016 U.S. Dist. LEXIS 100390, at \*4–10 (S.D.N.Y. Aug. 1, 2016); *Kleen Prods., LLC v. Packaging Corp. of Am.*, No. 10-C-5711, 2012 U.S. Dist. LEXIS 139632, at \*13–21 (N.D. Ill. Sept. 28, 2012); *Moore*, 287 F.R.D. at 182.

9. See Jonah B. Gelbach & Bruce Kobayashi, *The Law and Economics of Proportionality in Discovery*, 60 U. GA. L. REV. 1093, 1096 (2016) (explaining courts considering proportionality issues will have to grapple with agency problem when the reviewing party has more information about the cost of production or how production would affect litigants' strategic positions); see also David Freeman Engstrom & Jonah B. Gelbach, *Legal Tech, Civil Procedure, and the Future of Adversarialism*, 169 U. PA. L. REV. 1001, 1058 (2021).

10. FED. R. CIV. P. 26(b)(1).

11. *Id.* 26(b)(2)(B).

12. See *id.* 26(b)(2)(C).

In 2015, FRCP amendments on spoliation started requiring prejudice against the requesting party *or* that the reviewing party intentionally deprived the requesting party of information before the court imposes remedies.<sup>13</sup> In each of these FRCP procedures, the reviewing party is interested in the reviewing party's discovery methods insofar as the method influences cost and trustworthiness.<sup>14</sup>

### B. Judges' Role in E-Discovery

Despite e-discovery's growing role in litigation, judges remain hesitant to intervene in the discovery process, preferring that parties resolve discovery issues without court intervention.<sup>15</sup> Evolving TAR raises novel issues regarding review methodology selection, as exemplified by the two cases below.

In *Kleen Products, LLC v. Packaging Corp. of America*,<sup>16</sup> the requesting and reviewing parties could not agree on ESI search methods.<sup>17</sup> The requesting party argued that the reviewing party's Boolean keyword searches<sup>18</sup> were subject to inherent inadequacies and flaws that content-based advanced analytics (CBAA) were not.<sup>19</sup> The court pointed out Sedona Principle Six: the "[r]esponding parties are best situated to evaluate the procedures, methodologies, and techniques appropriate for preserving and producing their own electronically stored information . . . ." and eventually

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13. *See id.* 37(e).

14. *See* Steven Bennett, *E-Discovery: Reasonable Search, Proportionality, Cooperation, and Advancing Technology*, 30 JOHN MARSHALL J. INFO. TECH. & PRIV. L. 433, 439–42 (2014).

15. *See* Murphy, *supra* note 2, at 609, 633.

16. No. 10-C-5711, 2012 U.S. Dist. LEXIS 139632 (N.D. Ill. Sept. 28, 2012).

17. *Id.* at \*17–19.

18. *See* The Sedona Conference, *Best Practices Commentary on the Use of Search and Information Retrieval Methods in E-Discovery*, 8 SEDONA CONF. J. 189, 197–207 (2007) (explaining that keyword searches and Boolean operators (e.g., "and," "or," and "and not," or "but not") underly most common internet search tools, including LexisNexis and Westlaw, and work by retrieving information based on matches between the search terms and discoverable material); *see also* Jacob Tingen, *Technologies-That-Must-Not-Be-Named: Understanding and Implementing Advanced Search Technologies In E-Discovery*, 19 RICH. J.L. & TECH. 2, 18–22 (2012) (explaining Boolean connectors allow a user to request documents with multiple keywords, find specific phrases, or even find keywords within a specified proximity to each other with wildcard searches that find matches based on a common root word, e.g., searching "read\*" would find documents containing the words "reads," "reader," and "reading").

19. *See* Kleen Prods., LLC v. Packaging Corp. of Am., No. 10-C-5711, 2012 U.S. Dist. LEXIS 139632, at \*14–15 (N.D. Ill. Sept. 28, 2012) (discussing plaintiff's request that defendants use CBAA that analyzes the meaning of natural language rather than relying on keywords). CBAA is also called predictive coding and these algorithms fundamentally differ from Boolean keyword algorithms. *See* Charles Yablon & Nick Landsman-Roos, *Predictive Coding: Emerging Questions and Concerns*, 64 S.C. L. REV. 633, 637–42 (2013) (explaining that conceptual, or content-based, searches use machine-learning algorithms with seeding documents, which are documents reviewed by a human attorney, that train the algorithm that predict whether a document is relevant, privileged, and other classifications by recognizing statistical trends and patterns in the seed set); Tingen, *supra* note 18, at 21–28 (describing how content-based TAR relies on statistics to categorize documents' conceptual meaning, not just identifying isolated words or phrases as with Boolean searches).

the requesting party withdrew their demand for CBAA review.<sup>20</sup> The non-judicial and non-legislative Sedona Conference Working Group, comprised of e-discovery attorneys and other experts, drafted the Sedona Principles,<sup>21</sup> so while many practitioners and judges use the Sedona Conference's Principles for guidance, judges are not bound by them.

In 2013, a year after the *Kleen Products* decision, Professor Tonia Murphy argued against mandating predictive coding in e-discovery.<sup>22</sup> She argued that parties might have legitimate, good-faith concerns that lead them to prefer keyword searching rather than predictive coding, and judges do not have sufficient reasons to depart from the traditional judicial role of leaving discovery decisions to litigants.<sup>23</sup>

Courts still followed Sedona Principle Six.<sup>24</sup> However, Judge Andrew J. Peck, formerly a magistrate judge on the U.S. District Court for the Southern District of New York, recognized that advancing TAR might change the traditional discovery dynamics.<sup>25</sup> In *Hyles v. City of New York*,<sup>26</sup> the court held fast to Sedona Principle Six despite believing TAR was the best review method.<sup>27</sup> Even though the judge preferred the reviewing party to have used TAR in their review, the court did not force the reviewing party to use TAR because of Sedona Principle Six.<sup>28</sup> However, Judge Peck recognized that, eventually, TAR may be so widely used that it may be unreasonable for a reviewing party not to use TAR.<sup>29</sup>

## II. RE-CONSIDERING MANDATING TAR

Advances in automated e-discovery, reviewing parties' burdens, information asymmetries, and scant FRCP or official guidance forces reliance on Sedona Principles. This begs the question of *when, if ever*, should courts require TAR even if the reviewing party objects?

The answer to this question affects the entire litigation process because discovery is usually a significant component of any litigation and determines what facts may be presented to courts or juries.<sup>30</sup> Answering this question will provide efficiency and consistency across courts because litigants and

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20. See *Kleen Prods., LLC*, 2012 U.S. Dist. LEXIS 139632, at \*18 (citing The Sedona Conference, *supra* note 18, at 196).

21. See *The Sedona Principles, Third Edition: Best Practices, Recommendations & Principles for Addressing Electronic Document Production*, 19 SEDONA CONF. J. 1, 8–10 (2018).

22. See Murphy, *supra* note 2, at 609, 614.

23. *Id.*

24. See *Livingston v. City of Chicago*, No. 16-cv-10156, 2020 WL 5253848, at \*3 (N.D. Ill. Sept. 3, 2020); *In re Mercedes-Benz Emissions Litig.*, No. 16-cv-881, 2020 WL 487288, at \*1, \*6 (D.N.J. Jan. 30, 2020); *Hyles v. New York City*, No. 10-CIV-3119, 2016 U.S. Dist. LEXIS 100390, at \*7–8 (S.D.N.Y. Aug. 1, 2016); *Kleen Prods., LLC*, 2012 U.S. Dist. LEXIS 139632, at \*6, \*18–19, \*30–31, \*36–37.

25. See *Hyles*, 2016 U.S. Dist. LEXIS 100390, at \*6.

26. See *id.* at \*5.

27. See *id.*

28. See *id.* at \*7–9.

29. See *id.* at \*10–11.

30. See Murphy, *supra* note 2, at 609–10.

judges will have clear guidance for determining when requiring TAR furthers the FRCP's just, speedy, and cost-minimizing goals.<sup>31</sup>

When novel technologies emerge, it is best to wait and see what effects the new technology has on existing norms and procedures before regulating its use.<sup>32</sup> Once technologies gain traction and disrupt the status quo, however, issues often emerge, and policies must adapt to these changes.<sup>33</sup> Before electronic information, discovery could entail finding a needle in a haystack. Now, with ever-increasing electronic information, e-discovery can require finding a grain of sand in an ocean.<sup>34</sup> Although judges' initial adherence to the tradition of not intervening in discovery was wise, in light of technological advances, continuing this tradition does not further just, speedy, and cost-minimizing goals in all cases in accordance with the FRCP.<sup>35</sup> Particularly, three features of e-discovery present scenarios where mandating TAR advances the FRCP's goals: (1) complying with the proportionality requirements, (2) cost-shifting when appropriate, and (3) proving spoliation.

This part discusses why parties requesting ESI may care about the reviewing parties' review method with the FRCP's emphasis on proportionality and spoliation. Part II.A explains that proportionality showings require cost-benefit analysis and explains how the review method affects costs. Part II.B highlights the difficulty of making e-discovery spoliation claims.

#### A. FRCP 26(b)(1) Proportionality Showing

Requesting parties must show that the information requested is proportional to the needs of the case.<sup>36</sup> Proportionality showings require a cost-benefit analysis: the financial and resource expenditures of review methods selected are balanced against the needs of the case and the expected benefit of the review effort.<sup>37</sup> Requesting parties must make proportionality showings without directly controlling reviewing parties' review methods and costs.<sup>38</sup> This problem is exacerbated when courts order cost-shifting from

31. See FED. R. CIV. P. 1 (explaining the FRCP's purpose is to secure the just, speedy, and inexpensive determination of federal litigation).

32. See Danielle Keats Citron & Benjamin Wittes, *The Internet Will Not Break: Denying Bad Samaritans § 230 Immunity*, 86 *FORDHAM L. REV.* 401, 404–06, 411–14 (2017) (explaining the stages regulating emergent technologies).

33. See *id.* at 422.

34. See Greg Schodde, *The E-Discovery Challenge: Finding a Needle as the Haystack Grows*, *BLOOMBERG L.* (Dec. 23, 2015, 4:33 PM), <https://news.bloomberglaw.com/business-and-practice/the-e-discovery-challenge-finding-a-needle-as-the-haystack-grows> [<https://perma.cc/2746-9VCN>].

35. See *infra* Parts II.A–II.B.

36. See FED. R. CIV. P. 26(b)(1) (requiring discovery requests to be relevant and proportional to the needs of the case).

37. See *id.* (stating that the factors determining the scope of discovery include “whether the burden or expense of the proposed discovery outweighs its likely benefit”).

38. See Jacqueline Hoelting, Note, *Skin in the Game: Litigation Incentives Changing as Courts Embrace A “Loser Pays” Rule for E-Discovery Costs*, 60 *CLEV. ST. L. REV.* 1103, 1125 (2013).

reviewing parties to requesting parties, because reviewing parties can choose the most expensive review option, which could limit discovery.<sup>39</sup> As the sea of data expands, requesting parties must make more specific discovery requests to show relevance and proportionality.<sup>40</sup>

### B. FRCP 37(e): Spoliation

The 2015 FRCP amendments made it harder for requesting parties to show spoliation even though spoliation issues in e-discovery are considerably more complex than non-e-discovery spoliation cases.<sup>41</sup> The reviewing party's good faith is a core component of spoliation showings.<sup>42</sup> Because there might be doubt surrounding the reviewing party's good faith, the transparency of review becomes paramount.<sup>43</sup>

Courts' continued reliance on the Sedona Principles highlights their need for precise guidance about using TAR in e-discovery.<sup>44</sup> Sedona Principle Six reflects the discovery status quo of allowing the reviewing party discretion over review method but does not forbid reviewing parties to choose TAR.<sup>45</sup> This cautious recommendation was wise in light of the technological landscape in 2007, but e-discovery technologies significantly changed since the Sedona Conference, and their recommendations remained the same in 2018.<sup>46</sup> The lack of clear authority on e-discovery increases uncertainty for litigants because individual judges with varying technical knowledge may rely on different TAR recommendations.<sup>47</sup> Thus, litigants may not know what to expect.

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39. See FED. R. CIV. P. 26(c)(1)(B). See generally Frank H. Easterbrook, *Discovery as Abuse*, 69 B.U. L. REV. 635, 637–38 (1989) (explaining how discovery abuse occurs in the structure of legal rules).

40. See Rachel K. Alexander, *E-Discovery Practice, Theory, and Precedent: Finding the Right Pond, Lure, and Lines Without Going on a Fishing Expedition*, 56 S.D. L. REV. 25, 78 (2011).

41. See Alexander N. Gross, Note, *A Safe Harbor from Spoliation Sanctions: Can an Amended Federal Rule of Civil Procedure 37(e) Protect Producing Parties?*, 2015 COLUM. BUS. L. REV. 705, 733–35 (2015) (explaining the amendments create rules that only apply to ESI and limit damages to measures necessary to cure prejudice unless the court finds the party's spoliation was intentional).

42. See *id.* at 717–20.

43. See Clare Kealey, *Discovering Flaws: An Analysis of the Amended Federal Rule of Civil Procedure 37(e) and Its Impact on the Spoliation of Electronically Stored Evidence*, 14 RUTGERS J.L. & PUB. POL'Y 140, 147 (2016).

44. See *In re Mercedes-Benz Emissions Litig.*, No. 16-cv-881, 2020 WL 487288, at \*1, \*6 (D.N.J. Jan. 30, 2020); *Livingston v. City of Chicago*, No. 16-cv-10156, 2020 WL 5253848, at \*3 (N.D. Ill. Sept. 3, 2020); *Hyles v. New York City*, No. 10-CIV-3119, 2016 U.S. Dist. LEXIS 100390, at \*7–8 (S.D.N.Y. Aug. 1, 2016); *Kleen Prods., LLC v. Packaging Corp. of Am.*, No. 10-C-5711, 2012 U.S. Dist. LEXIS 139632, at \*6, \*18–19 (N.D. Ill. Sept. 28, 2012).

45. See *The Sedona Principles*, *supra* note 21, at 8–10.

46. See *id.*

47. See Scott M. O'Brien, Note, *Analog Solutions: E-Discovery Spoliation Sanctions and the Proposed Amendments to FRCP 37(e)*, 65 DUKE L.J. 151, 184 (2015).

### III. EMPOWERING COURTS TO PROTECT ADVERSARIAL DISCOVERY

Since TAR affects costs and trustworthiness in discovery, courts need specific guidelines about mandating TAR in e-discovery.<sup>48</sup> Discovery is a gatekeeping mechanism to more expensive parts of litigation and occurs in trial courts.<sup>49</sup> Therefore, e-discovery expert guidance for trial courts would be beneficial.<sup>50</sup> A first step for courts would be establishing practical e-discovery guidance based on current FRCP rules. Two specific issues warrant immediate consideration: assessing costs during a proportionality analysis and when spoliation occurs.

This part argues mandating TAR in some cases may be appropriate and that judges need technical guidance to intervene, if needed, in e-discovery disputes. Part III.A discusses requiring TAR in proportionality showings when the requesting party pays discovery costs. Part III.B considers mandating TAR in spoliation cases where the reviewing party's good faith may be at issue.

#### A. Addressing Proportionality

The current FRCP shift costs onto the requesting party if the reviewing party can show an undue cost and require that judges limit discovery obligations of the producing party if the requesting party can find the information from less expensive sources.<sup>51</sup> FRCP 26's plain language does not forbid requesting parties from considering TAR in their cost-benefit proportionality analysis.<sup>52</sup> Indeed, the American Bar Association's Model Rules of Professional Conduct require attorneys to stay informed of evolving legal technology.<sup>53</sup> In light of courts applying these rules where the reviewing party chooses the review method, reviewing parties do not have an incentive to choose the lowest cost review method because the requesting party pays.<sup>54</sup> Instead, the reviewing party can keep e-discovery costs high, so the requesting party will fail the proportionality test and pay the reviewing party's discovery costs.<sup>55</sup> The FRCP's guidance should rectify potential abuse from e-discovery cost-shifting and bad faith review methods by providing judges with detailed guidance for assessing different review methods, specifically concept-based TAR versus keyword or manual review.

Additionally, judges need to know TAR's limitations to determine when a party has a good faith argument against TAR. Expanding TAR cost-benefit guidance for judges maintains judicial discretion while equipping judges

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48. See *supra* Parts II.A–II.B.

49. See Daniel K. Gelb, *The Court as Gatekeeper: Preventing Unreliable Pretrial eDiscovery From Jeopardizing a Reliable Fact-Finding Process*, 83 *FORDHAM L. REV.* 1287, 1290–91 (2014).

50. See *id.*

51. See FED. R. CIV. P. 26(c)(1)(B).

52. See *supra* notes 1–2 and accompanying text.

53. See MODEL RULES OF PRO. CONDUCT r. 1.1 cmt. 8 (AM. BAR ASS'N 2021).

54. See Easterbrook, *supra* note 39, at 636 (explaining the strategic components of discovery).

55. See *id.*

with the knowledge necessary for informed cost-based e-discovery rulings. Furthermore, understanding the nuances of TAR's costs and benefits will mitigate frivolous discovery, rather than open the floodgates to fishing expeditions. Understanding these factors allows adjusting the scope of discovery to the anticipated value of the case and avoiding e-discovery disputes over review methods.

### B. Mitigating Spoliation

When spoliation concerns arise, judges need to “lockdown” information to ensure requesting parties have fair access to information.<sup>56</sup> Unlike paper records which courts can physically secure, electronic information in the cloud can exist in other jurisdictions.<sup>57</sup> Judicial intervention may be necessary in spoliation cases when a party challenges whether the other party is acting in good faith.<sup>58</sup> The 2015 FRCP amendments make requesting parties' spoliation showings more burdensome without considering the unique difficulties of showing ESI spoliation.<sup>59</sup> Mandating TAR in spoliation cases would help deter the reviewing party from abusing the review process or destroying ESI by ensuring good faith with oversight. Creating detailed court guidance for storing ESI and conducting forensic analysis of lost ESI in spoliation cases will protect against the reviewing parties abusing their information or technology advantage. These guidelines should include specific, tangible procedures judges or mediators should use to secure and access ESI, including the time limits for recovering data. Developing these spoliation guidelines will assist courts in exercising just rulings and increase certainty for litigants through notice of the ratified procedures, and signals to litigants that courts are embracing TAR and expanding their technical expertise. These signals will further establish norms for advancing TAR and warn technology-savvy litigants to stay away from e-discovery abuse. Establishing technical knowledge and guidelines for spoliation cases will lay a foundation to confront other problems in e-discovery, like the duty to preserve evidence and inadvertent disclosures.

### CONCLUSION

Current e-discovery rules and guidance should be updated to account for advanced TAR methods, particularly concept-based review.<sup>60</sup> The lack of

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56. See JOSEPH S. GOODE & EMILY BRIDGES, AM. BAR ASS'N, W2: LITIGATION TRAP: PREVENTING, PROSECUTING, AND DEFENDING A CLAIM OF SPOILIATION 19 (2020), <https://www.americanbar.org/content/dam/aba/events/franchising/2020/w2.pdf> [<https://perma.cc/JT4B-3376>].

57. See Paul M. Schwartz, *Legal Access to the Global Cloud*, 118 COLUM. L. REV. 1681, 1700 (2018) (explaining how the instability of data access rules leaves multiple ways to shelter data beyond American law).

58. See *supra* notes 41–43 and accompanying text.

59. See Alexandra M. Reynolds, Note, *Spoliating the Adverse Inference Instruction: The Impact of the 2015 Amendment to Federal Rule of Civil Procedure 37(e)*, 51 GA. L. REV. 917, 930 (2017).

60. See *supra* notes 45–46 and accompanying text.

clear, practical guidance forces judges to rely on non-ratified documents like the Sedona Principles or traditions, like cooperation, based on non-electronic information.<sup>61</sup> Courts' hesitancy to participate in e-discovery disputes threatens the adversarial nature of litigation in American law and the sacrosanct role of lawyers in discovery.<sup>62</sup> Since ESI requests are the starting place for all e-discovery, proportionality and cost-shifting are natural places to start expanding courts' technical knowledge.<sup>63</sup> Spoliation should also be an initial consideration because these cases disrupt good faith assumptions, which likely affects litigant cooperation.<sup>64</sup> E-discovery and TAR are here to stay, and it is time for courts to catch up.<sup>65</sup>

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61. *See supra* notes 45–46, 58 and accompanying text.

62. *See supra* note 49 and accompanying text; *see also supra* Parts II.A, III.A.

63. *See supra* notes 49–50 and accompanying text; *see also supra* Parts II.A, III.A.

64. *See supra* notes 41–43 and accompanying text; *see also supra* Parts II.B, III.B.

65. *See supra* notes 45–46 and accompanying text.