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Rulemaking 3.0: Incorporating AI and ChatGPT Into Notice and Comment Rulemaking

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Rulemaking 3.0: Incorporating AI and ChatGPT Into Notice and Comment Rulemaking

*Stephen M. Johnson**

ABSTRACT

[Technological innovations since the turn of the century have created opportunities to increase public participation in notice and comment rulemaking, increase the efficiency of the process, and increase the quality of the rules adopted by agencies. For some rules, online rulemaking and social media have facilitated increased public participation, but have not necessarily facilitated improvements in the quality of public comments. In addition, in some cases, the transformation of the process has created new challenges for government agencies by making it easier for supporters or opponents of rules to flood agencies with duplicative and potentially false comments to which the agencies must respond.

Artificial intelligence, including ChatGPT, is the latest tech trend to create opportunities to transform notice and comment rulemaking. If ChatGPT is only used by members of the public and organizations as a tool to draft comments, it may increase the involvement of the public in the process and assist them in drafting clear and intelligible comments. However, it is unlikely to improve the quality of public comments that they provide to agencies, because it will not help them understand the type of information that agencies are seeking in public comments. In addition, if ChatGPT is used to any significant extent in drafting comments, it could create challenges for agencies by flooding agencies with significantly greater numbers of seemingly unique comments, most of which merely express sentiment, values or preferences, and many of which may include false information.

There is, however, an alternative path forward for ChatGPT and artificial intelligence in notice and comment rulemaking. If agencies use ChatGPT to create tools that help members of the public

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understand proposed rules, the rulemaking process and the types of comments that are effective in that process, agencies may enable members of the public to provide them with more useful comments. In addition, agencies may be able to use other artificial intelligence tools to make it easier to organize and analyze the comments they receive and to notify members of the public about proposed rules that might be of interest to them. Embracing these alternative uses of artificial intelligence and ChatGPT could generate some of the gains in public participation that other technological tools have promised, but not delivered.]

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I. INTRODUCTION

The turn of the century marked the dawn of the e-rulemaking era, bringing with it the promise of broader public participation, increased efficiency for the government, and higher quality agency decision-making.¹ The migration of notice and comment rulemaking to online platforms and the increasing use of social media by agencies and interest groups has increased the *number of persons* participating in the process for some rules, but not necessarily the *quality of the comments* that they are submitting.² In addition, in some cases, the transformation of the process has created new challenges for government agencies by making it significantly easier for supporters or opponents of rules to flood agencies with duplicative and potentially fraudulent comments to which the agencies must respond.³

Every technological innovation holds out promise for improvement of the rulemaking process, and artificial intelligence, including ChatGPT, is the latest tool that might transform or significantly impact the process. ChatGPT exploded on the scene in late 2022, promising to summarize large amounts of text and revolutionize the creation of documents and other digital content, including everything from legal pleadings to songs and television scripts.⁴ It is too early to forecast how effectively it might be used by the public or government agencies in the notice and comment rulemaking process, but there may be a constructive path for all parties going forward.

If ChatGPT is only used by members of the public, organizations and interest groups to automate the creation of public comments, it may increase involvement of the public in the commenting process and assist them in writing clear and intelligible comments. However, it is unlikely to improve the actual quality of the comments that they provide to agencies, because it won't necessarily make it any easier for commenters to provide agencies with the type of information that agencies are seeking from the public.⁵ In addition, the use of ChatGPT by members of the public, organizations and interest groups to draft comments may create challenges for agencies in identifying useful or even accurate information

¹ See *infra* Part II.B.

² See *infra* Part II.B.

³ See *infra* Part II.C.

⁴ See Ethan Mollick & Lilach Mollick, *New Modes of Learning Enabled by AI Chatbots: Three Methods and Assignments* (Dec. 13, 2022), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4300783 [<https://perma.cc/3CZK-ECQ8>]; *What is Generative AI?*, MCKINSEY & CO. (Jan. 19, 2023), <https://www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-generative-ai> [<https://perma.cc/QV7R-EP66>] [hereinafter MCKINSEY & Co.].

⁵ See *infra* Part IV.B.

in the comments and responding to the comments, which could delay the completion and implementation of rules.⁶

There is, however, an alternative way that ChatGPT might be used to improve the quality of comments provided to agencies and improve agency decision-making. Agencies could use ChatGPT, or other artificial intelligence tools, to facilitate public understanding of the rules and the types of information that agencies are seeking to gather in the rulemaking process.⁷

In addition, although ChatGPT is unlikely to help agencies organize and analyze comments received during the notice and comment process, there are other artificial intelligence tools that could serve to facilitate those tasks.⁸ Many of these tools are reaching a stage of development where they can efficiently organize and summarize comments submitted to agencies, and then agencies could frame appropriate responses more efficiently.⁹

Part I of this article outlines the notice and comment rulemaking process and describes the benefits of public involvement in that process, as well as the barriers to participation for many members of the public. Part II of the article describes the technological evolution of the rulemaking process, the benefits envisioned from that evolution, the degree to which e-rulemaking and the increased use of social media in the process have or have not increased participation in the rulemaking process, and the unique challenges that the technological advances in the rulemaking process have presented for agencies. Part III of the article introduces artificial intelligence tools, particularly ChatGPT, and outlines the strengths of ChatGPT, as well as the limitations of the tool. Part IV of the article focuses on the ways that members of the public could use ChatGPT to assist them with drafting comments and the challenges that could be created for agencies if members of the public, organizations and interest groups utilized ChatGPT to a significant degree to facilitate the creation of comments. Finally, Part V of the article explores the manner in which agencies could use ChatGPT or other artificial intelligence tools to facilitate higher quality public commenting and to organize and summarize public comments to efficiently consider and respond to the comments.

⁶ See *infra* Part IV.C.

⁷ See *infra* Parts V.A. & B.

⁸ See *infra* Part V.C.

⁹ See *infra* Part V.C.

II. NOTICE AND COMMENT RULEMAKING AND THE IMPORTANCE OF PUBLIC PARTICIPATION

The notice and comment rulemaking process is governed by the Administrative Procedure Act (“APA”), which requires agencies to publish a general notice of proposed rulemaking that includes the terms or substance of the proposed rule or a description of the subjects and issues involved in the rule in the Federal Register.¹⁰ After agencies publish the proposed rule, the statute requires them to give “interested persons an opportunity to participate in the rule making through submission of written data, views, or arguments” (the opportunity to comment).¹¹ Agencies then have an obligation to consider and respond to the comments,¹² which they usually do in the preamble to the final rule.¹³ If an agency fails to acknowledge and respond to “significant” public comments,¹⁴ a court can overturn the rule on procedural grounds, because the agency has not provided a concise general statement of the basis and purpose of the rule required by the APA,¹⁵ or because the court finds that the agency’s action is arbitrary and capricious.¹⁶ However, agencies do not have to respond to every single comment individually and frequently respond to groups of

¹⁰ See 5 U.S.C. §553(b) (2023).

¹¹ *Id.* § 553(c).

¹² The APA requires agencies to consider “the relevant matter presented” and incorporate, in the final rule, “a concise general statement of [the] basis and purpose” of the rule.” *Id.* The requirement for agencies to respond to comments as part of a concise general statement of the basis and purpose of a rule “enable[s] [a court] to see what major issues of policy were ventilated . . . and why the agency reacted to them as it did.” See *United States v. Nova Scotia Food Prod. Corp.*, 568 F.2d 240, 252 (2d Cir. 1977) (quoting *Auto. Parts & Accessories Ass’n v. Boyd*, 407 F.2d 330, 335 (D.C. Cir. 1968)).

¹³ See William L. Andreen, *An Introduction to Federal Administrative Law Part I: The Exercise of Administrative Power and Judicial Review*, 50 ALA. L. REV. 322, 324 (1989).

¹⁴ See *Perez v. Mortgage Bankers Ass’n*, 575 U.S. 92, 96 (2015) (“An agency must consider and respond to significant comments received during the period for public comment.”); *Am. Mining Cong. v. EPA*, 907 F.2d 1179, 1188 (D.C. Cir. 1990); *Home Box Office, Inc. v. FCC*, 567 F.2d 9, 35–36 (D.C. Cir. 1977). “Significant comments” are “comments which, if true, . . . would require a change in [the] proposed rule.” See *La. Fed. Land Bank Ass’n v. Farm Credit Admin.*, 336 F.3d 1075 (D.C. Cir. 2003) (citing *Am. Mining Cong.*, 907 F.2d at 1188).

¹⁵ See 5 U.S.C. § 706(2)(D) (1966). See also Stephen M. Johnson, *#BetterRules: The Appropriate Use of Social Media in Rulemaking*, 44 FLA. ST. U. L. REV. 1379, 1394 n.84 (2018).

¹⁶ See 5 U.S.C. § 706(2)(A) (1966); *Bus. Roundtable v. SEC*, 647 F.3d 1144, 1148 (D.C. Cir. 2011).

comments raising similar issues together.¹⁷ While agencies can avoid responding to insignificant comments,¹⁸ most agencies are reluctant to ignore any comment altogether.

Public participation in the rulemaking process, accompanied by a requirement that agencies consider that participation meaningfully, is vital for many reasons. First, by increasing the type and amount of information an agency considers when adopting a rule, agencies are able to adopt better informed and more rational rules.¹⁹ Second, the opportunity for broad and transparent public participation advances a more democratic process that increases accountability of agencies and reduces opportunities for agency capture or agency abuse of broad congressional delegations of authority.²⁰

¹⁷ See Jason Webb Yackee & Susan Webb Yackee, *Testing the Ossification Thesis: An Empirical Examination of Federal Regulatory Volume and Speed, 1950-1990*, 80 GEO. WASH. L. REV. 1414, 1459 n.223 (2012).

¹⁸ See Donald J. Kochan, *The Commenting Power: Agency Accountability Through Public Participation*, 70 OKLA. L. REV. 601, 614 (2018). See also *Ass'n of Priv. Sector Colls. & Univs. v. Duncan*, 681 F.3d 427, 441–42 (D.C. Cir. 2012) (an agency's obligation to respond to "significant comments raised during rulemaking" is flexible). "The APA requirement of agency responsiveness to comments is subject to the common-sense rule that a response [is not always] necessary." See *NRDC v. EPA*, 859 F.2d 156, 188–89 (D.C. Cir. 1988); see also *Thompson v. Clark*, 741 F.2d 401, 408 (D.C. Cir. 1984) (APA "has never been interpreted to require the agency to respond to every comment . . . no matter how insubstantial."). Comments that "are purely speculative and do not disclose the factual or policy basis on which they rest require no response." See *Home Box Office, Inc.*, 567 F.2d at 35; see also *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993).

¹⁹ See *Administrative Conference Recommendation 2021-1, Managing Mass, Computer-Generated, and Falsely Attributed Comments*, ACUS (June 30, 2021), <https://www.acus.gov/recommendation/managing-mass-computer-generated-and-falsely-attributed-comments> [<https://perma.cc/VS6N-EWYK>] (process provides an opportunity to "avoid errors and make a more informed decision" on rulemaking) [hereinafter ACUS Recommendation 2021-1]; STEVE BALLA ET AL., REPORT FOR THE ACUS, MASS, COMPUTER-GENERATED AND FRAUDULENT COMMENTS, at 5 (Jun. 1, 2021), <https://www.acus.gov/report/final-report-mass-computer-generated-and-fraudulent-comments> [<https://perma.cc/FHM4-V39U>] [hereinafter ACUS REPORT]; Russell L. Weaver, *Rulemaking in an Internet Era: Dealing with Bots, Trolls, & Form Letters*, 27 GEO. MASON L. REV. 553, 555–56 (2020); Kochan, *supra* note 18, at 612; Stephen M. Johnson, *Beyond the Usual Suspects: Acus, Rulemaking 2.0, and a Vision for Broader, More Informed, and More Transparent Rulemaking*, 65 ADMIN. L. REV. 77, 79 (2013) [hereinafter Johnson, *Beyond the Usual Suspects*]; Wendy Wagner, *Administrative Law, Filter Failure, and Information Capture*, 59 DUKE L. J. 1321 (2010); Stephen M. Johnson, *The Internet Changes Everything: Revolutionizing Public Participation and Access to Government Information Through the Internet*, 50 ADMIN. L. REV. 277, 289 (1998) [hereinafter Johnson, *Internet Changes Everything*]; Jim Rossi, *Participation Run Amok: The Costs of Mass Participation for Deliberative Agency Decisionmaking*, 92 NW. U. L. REV. 173, 182 (1997).

²⁰ See ACUS REPORT, *supra* note 19, at 5; Michael Sant'Ambrogio & Glen Staszewski, *Democratizing Rule Development*, 98 WASH. U. L. REV. 793, 827 (2021); Wendy Wagner et al., *Deliberative Rulemaking: An Empirical Study of Participation*

Third, broad and transparent public participation advances public understanding, greater acceptance of rules, and confidence in the legitimacy of agencies and their decisions.²¹ Finally, broad public participation, coupled with agencies' responses to that participation, helps facilitate the record for judicial review of agencies' rules.²²

In developing a proposed rule, agencies rely on a considerable wealth of expertise, a substantial amount of information provided by regulated entities and information the agencies gained from administering the statute that is being interpreted in the rule.²³ For most rules, agencies rely heavily on scientific and technical information, so they are particularly interested in receiving comments that provide such information, especially if the agencies were not previously aware of the information.²⁴ Whenever possible, agencies prefer that commenters provide detailed facts, studies, or analyses to support the scientific or technical claims that they are making in comments.²⁵

Agencies can also benefit from receiving information during the comment period that they may not have been able to access previously. For instance, commenters may be able to identify specific ways that a proposed rule will impact communities, small businesses, or individuals that the agencies may not have anticipated.²⁶ Agencies do not frequently access situational or local knowledge outside of the rulemaking process.²⁷

in Three Agency Programs, 73 ADMIN. L. REV. 609, 615 (2021) [hereinafter Wagner et al.]; Melissa Mortazavi, *Rulemaking Ex Machina*, 117 COLUM. L. REV. ONLINE 202, 205 (2017); Weaver, *supra* note 19, at 555; Nicholas Bagley, *Remedial Restraint in Administrative Law*, 117 COLUM. L. REV. 253, 265 (2017); Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 79–80; Johnson, *Internet Changes Everything*, *supra* note 19, at 289.

²¹ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 79; Johnson, *Internet Changes Everything*, *supra* note 19, at 289; Wagner et al., *supra* note 20, at 615; Mortazavi, *supra* note 20, at 205–06; Bagley, *supra* note 20, at 265.

²² See Mortazavi, *supra* note 20, at 206; ACUS REPORT, *supra* note 19, at 5; Kochan, *supra* note 18, at 613.

²³ See ACUS REPORT, *supra* note 19, at 14.

²⁴ See *id.*; Weaver, *supra* note 19, at 567; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 87; Shagufta Ahmed et al., *How to Effectively Comment on Regulations*, at 5, CTR. ON REGUL. AND MKTS. AT BROOKINGS (Nov. 2022), https://www.brookings.edu/wp-content/uploads/2018/08/ES_20180809_RegComments.pdf [<https://perma.cc/M5NX-58C5>] [hereinafter Brookings Commenting].

²⁵ See ACUS REPORT, *supra* note 19, at 14; Brookings Commenting, *supra* note 24, at 3, 5.

²⁶ See Brookings Commenting, *supra* note 24, at 2; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 83; Johnson, *#BetterRules*, *supra* note 15, at 1384–85; see Cynthia R. Farina et al., *Rulemaking in 140 Characters or Less: Social Networking and Public Participation in Rulemaking*, 31 PACE L. REV. 382, 426 (2011).

²⁷ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 83; Johnson, *#BetterRules*, *supra* note 15, at 1384–85; see Farina et al., *supra* note 26, at 426; Cary

In addition to those types of information, agencies pay close attention to certain types of information provided to them during the comment period, because the information addresses issues that they are legally required to consider. Agencies recognize that they are more likely to be sued and potentially have their rule invalidated if they do not consider and respond in a reasonable manner to that information.²⁸ Thus, when commenters suggest that agencies may not have the legal authority to take certain actions outlined in a proposed rule, agencies will pay particular attention to such a comment.²⁹ Similarly, since agencies are generally required by Executive Order to consider the costs and benefits of rules,³⁰ they will likely pay close attention to comments identifying potential costs or benefits of a rule.³¹

In contrast to the type of information that agencies find useful or are legally obligated to consider carefully, agencies receive a significant number of comments in the rulemaking process that simply express support or opposition to rules or specific portions of rules. Comments that express individual preferences, values, or sentiment are considerably less helpful to agencies in crafting final rules. Rulemaking, after all, is not a plebiscite.³² Agencies are supposed to exercise discretion to frame rules based on their expertise and the requirements of law, rather than the will of the majority of persons who choose to comment on a proposed rule.³³

Coglianesse, *Weak Democracy, Strong Information: The Role of Information Technology in the Rulemaking Process*, in GOVERNANCE AND INFORMATION TECHNOLOGY: FROM ELECTRONIC GOVERNMENT TO INFORMATION GOVERNMENT 101, 117 (Viktor Mayer-Schönberger & David Lazer eds., 2007).

²⁸ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 87–88.

²⁹ See Brookings Commenting, *supra* note 24, at 2; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 87–88.

³⁰ See Regulatory and Planning Review, Exec. Order No. 12866, 58 Fed. Reg. 51735 (Oct. 4, 1993) [hereinafter Exec. Order 12866].

³¹ See Brookings Commenting, *supra* note 24, at 2, 5.

³² See ACUS REPORT, *supra* note 19, at 20; Emily S. Bremer, *The Undemocratic Roots of Agency Rulemaking*, 108 CORNELL L. REV. 69, 86 (2022); Johnson, #BetterRules, *supra* note 15, at 1387; Cynthia R. Farina, Mary J. Newhart, & Josiah Heidt, *Rulemaking vs. Democracy: Judging and Nudging Public Participation That Counts*, 2 MICH. J. ENV'T. & ADMIN. L. 123, 131 (2012) [hereinafter Farina, Newhart, & Heidt]; Farina et al., *supra* note 26, at 429–30.

³³ See, e.g., *United States Cellular Corp. v. FCC*, 254 F.3d 78, 87 (D.C. Cir. 2001); *NRDC, Inc. v. EPA*, 822 F.2d 104, 122 (D.C. Cir. 1987); see also Weaver, *supra* note 19, at 565. Nevertheless, some commentators have raised concerns that increases in the volume of comments that have accompanied the mass comment campaigns in recent rules may pressure agencies to make decisions based on the will of the people, rather than expertise. See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 114; Jeffrey S. Lubbers, *A Survey of Federal Agency Rulemakers' Attitudes About E-Rulemaking*, 62 ADMIN. L. REV. 451, 455–56 (2010); Stuart Minor Benjamin, *Evaluating E-Rulemaking: Public Participation and Political Institutions*, 55 DUKE L.J. 893, 924–25 (2006); Farina et al., *supra* note 26, at 409. In addition, in

Even if they were required to develop rules based on popular opinion, the universe of persons commenting on proposed rules is not representative of public opinion in general.³⁴

Since agencies are not required to modify proposed rules based on the preferences exhibited in public comments,³⁵ agencies need not fear legal challenges based on those grounds. In addition, most agencies accord less weight to comments addressing preferences, values, or sentiments than to comments that include scientific or technical information, situational knowledge, or challenges to the legality of the agencies' proposal.³⁶

This does not mean that comments addressing preferences, values, or sentiment are irrelevant in the rulemaking process. Some academics argue that when agencies adopt rules that appear to be opposed by a significant majority of the public, this practice undermines the potential of rulemaking to serve as a source of democratic accountability and can lead citizens to lose confidence in government.³⁷ Accordingly, these academics argue that agencies should consider public preferences when acting within a range of discretion.³⁸ This analysis can be valuable to the agency since it can design

a recent report on the notice and comment rulemaking process, a Congressional committee suggested that it may be useful to amend the APA to provide guidance to agencies regarding the degree to which they should give deference to expressions of support or opposition to rules in the rulemaking process. *See Abuses of the Federal Notice-And-Comment Rulemaking Process*, 116th Cong. (2019) (Staff Report from the Committee on Homeland Security and Governmental Affairs, U.S. Senate, Permanent Subcommittee on Investigations) [hereinafter Senate Committee Report].

³⁴ See ACUS REPORT, *supra* note 19, at 21–22 (noting that commenters may represent a relatively privileged group); Weaver, *supra* note 19, at 565.

³⁵ See ACUS REPORT, *supra* note 19, at 14 (noting that the APA requires agencies to consider relevant substantive arguments from commenters, but identifying a debate among scholars regarding whether comments expressing preference are substantive arguments); Farina, Newhart, & Heidt, *supra* note 33, at 137–39. Statutes often impose limits on the kinds of information that agencies may consider in adopting rules, and agencies rules can be invalidated as arbitrary and capricious when agencies rely on factors that are outside of those authorized by law. *See* ACUS REPORT, *supra* note 19, at 15 (citing *Motor Vehicle Mfrs. Ass'n. of United States v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983)). In those cases, agencies might be precluded from relying on value, preference or sentiment comments as the basis for a final rule. *Id.*

³⁶ See ACUS REPORT, *supra* note 19, at 22, 24; Weaver, *supra* note 19, at 567; Nina A. Mendelson, *Rulemaking, Democracy, and Torrents of E-Mail*, 79 GEO. WASH. L. REV. 1343, 1346, 1362 (2011) [hereinafter Mendelson, *Torrents of E-mail*]; Brookings Commenting, *supra* note 24, at 2; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 88.

³⁷ See ACUS REPORT, *supra* note 19, at 14; Johnson, *#BetterRules*, *supra* note 15, at 1413.

³⁸ See ACUS REPORT, *supra* note 19, at 13–14; Mendelson, *Torrents of E-Mail*, *supra* note 36, at 1350–51.

a rule that is more likely to be accepted by the regulated community and, thus, easier to enforce.³⁹

Even if agencies do not change rules based on the value, preference, and sentiment comments that they receive, the information that agencies receive from such comments can be useful as they consider how to engage with Congress as the rule is finalized, how to implement the rule after it is finalized, and how to gauge the litigation risk associated with finalizing the rule.⁴⁰

When the federal government migrated notice and comment rulemaking to an online platform around the turn of the century, it created guidance for commenters that outlines the types of comments that agencies generally find more effective in the rulemaking process.⁴¹ Among the advice provided by the government is:

“3. Clearly identify the issues within the regulatory action on which you are commenting. ...

4. If a rule raises many issues, do not feel obligated to comment on every one – select those issues that concern and affect you the most and/or you understand the best.

5. Agencies often ask specific questions or raise issues in rulemaking proposals on subjects where they are actively looking for more information. While the agency will still accept comments on any part of the proposed regulation, please keep these questions and issues in mind while formulating your comment. ...

7. If you disagree with a proposed action, suggest an alternative (including not regulating at all) and include an explanation and/or analysis of how the alternative might meet the same objective or be more effective.

8. The comment process is not a vote. The government is attempting to formulate the best policy, so when crafting a comment it is important that you adequately explain the reasoning behind your position.

9. Identify credentials and experience that may distinguish your comments from others. If you are commenting in an area in which you have relevant

³⁹ See Johnson, *#BetterRules*, *supra* note 15, at 1412.

⁴⁰ See ACUS REPORT, *supra* note 19, at 24; Johnson, *#BetterRules*, *supra* note 15, at 1412–13; Nina A. Mendelson, *Should Mass Comments Count?*, 2 MICH. J. ENV'T. & ADMIN. L. 173, 181 (2012).

⁴¹ See *Tips for Submitting Effective Comments*, REGULATIONS.GOV, <https://s3.amazonaws.com/prod-regulations-faq/pdf/Tips-For-Submitting-Effective-Comments.pdf> [<https://perma.cc/AX4W-VTMW>] (last visited Sept. 29, 2023).

personal or professional experience (i.e., scientist, attorney, fisherman, businessman, etc.) say so.

10. Agency reviewers look for sound science and reasoning in the comments they receive. When possible, support your comment with substantive data, facts, and/or expert opinions. You may also provide personal experience in your comment, as may be appropriate. By supporting your arguments well you are more likely to influence the agency decision making.

11. Consider including examples of how the proposed rule would impact you negatively or positively.

12. Comments on the economic effects of rules that include quantitative and qualitative data are especially helpful.”⁴²

The guidance also specifically addresses form letters, noting:

“Organizations often encourage their members to submit form letters designed to address issues common to their membership Many in the public mistakenly believe that their submitted form letter constitutes a ‘vote’ regarding the issues concerning them. Although public support or opposition may help guide important public policies, agencies make determinations for a proposed action based on sound reasoning and scientific evidence rather than a majority of votes. A single, well-supported comment may carry more weight than a thousand form letters.”⁴³

Many federal agencies, as well as non-profit organizations,⁴⁴ have prepared guidelines for commenting that include suggestions similar to those provided in the *Tips for Submitting Effective Comments*.⁴⁵

⁴² *Id.*

⁴³ *Id.* In its report on abuses of the notice and comment rulemaking process, the Senate Committee on Homeland Security and Governmental Affairs recommended that agencies should “develop policies to encourage organizations to collect signatures on one comment, rather than submitting thousands of individual identical comments.” See Senate Committee Report, *supra* note 33, at 4.

⁴⁴ See, e.g., Brookings Commenting, *supra* note 24; *Tips for Submitting Effective Comments*, CAFCP, https://www.cacfp.org/assets/pdf/Tips+for+Submitting+Effective+Comments_cacfp.org/ [<https://perma.cc/8F2W-SLTY>] (last visited Sept. 29, 2023); *How to Submit Comments to Proposed Rulemaking*, JOHNS HOPKINS, BLOOMBERG SCH. OF PUB. HEALTH, <https://publichealth.jhu.edu/lerner-center/resources/how-to-submit-comments-to-proposed-rulemaking> [<https://perma.cc/W98A-RDRA>] (last visited Sept. 29, 2023).

⁴⁵ See, e.g., *Commenting on EPA Dockets*, U.S. EPA, <https://www.epa.gov/dockets/commenting-epa-dockets> [<https://perma.cc/SS23-4BHT>] (last visited Sept. 29, 2023); *How to Comment Effectively*, U.S. DEP’T OF THE INTERIOR, BUREAU OF LAND MGMT.,

Although broad public participation in rulemaking can benefit agencies and the public, participation in the notice and comment rulemaking process has been historically imbalanced, minimizing those benefits. Studies consistently demonstrate that regulated entities participate to a vastly greater degree than individuals or organizations representing the public interest in the rulemaking process.⁴⁶ In many rulemakings, there are no comments submitted by individuals or public interest organizations.⁴⁷ Even in high profile rulemakings that attract

[https://eplanning.blm.gov/public_projects/lup/69026/89841/107422/131031_-_How_to_Comment_updated_\(logo\).pdf](https://eplanning.blm.gov/public_projects/lup/69026/89841/107422/131031_-_How_to_Comment_updated_(logo).pdf) [<https://perma.cc/EG75-3SH6>] (last visited Sept. 29, 2023); *How Do I Write an Effective Comment*, U.S. DEP'T OF AGRIC., www.ams.usda.gov/sites/default/files/media/NOP_Submitting_Comments.pdf [<https://perma.cc/NV8D-FM2R>] (last visited Sept. 29, 2023).

⁴⁶ See Wagner et al., *supra* note 20, at 613; Weaver, *supra* note 19, at 559–60; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 78; Wendy Wagner, Katherine Barnes, & Lisa Peters, *Rulemaking in the Shade: An Empirical Study of EPA's Air Toxic Emission Standards*, 63 ADMIN. L. REV. 99, 102 (2011) [hereinafter Wagner, Barnes, & Peters]; Jason Webb Yackee & Susan Webb Yackee, *A Bias Towards Business? Assessing Interest Group Influence on the U.S. Bureaucracy*, 68 J. POL. 128, 128–38 (2006); Marissa Martino Golden, *Interest Groups in the Rule-Making Process: Who Participates? Whose Voices Get Heard?*, 8 J. PUB. ADMIN. RES. & THEORY 245, 245–67 (1998). In reviewing rules that EPA adopted under the Toxic Substances Control Act between 1980 and 2009, Professor Wendy Wagner and her associates found that 89% of the comments were submitted by corporations or trade groups, while organizations representing the public interest submitted less than 5% of the comments. See Wagner et al., *supra* note 20, at 630. In addition, they found that public interest groups were not involved at all in 81% of the rules that they studied. *Id.* In a separate study of the rules that EPA adopted to regulate hazardous air pollutants, Professor Wagner and her associates found that industries submitted 81% of the comments on the rules during the notice and comment period and that industry groups submitted comments in every rulemaking, while public interest groups only submitted comments in 48% of the rulemakings. See Wagner, Barnes, & Peters, *supra*, at 128–29. They also concluded that the mean number of comments submitted per rule by public interest groups was 2.4, compared to 35 submitted by industry representatives. *Id.*

⁴⁷ See ACUS REPORT, *supra* note 19, at 7; Jim Rossi & Kevin M. Stack, *Representative Rulemaking*, 109 IOWA L. REV. (forthcoming 2023) (draft at 20); David M. Shafie, *Participation in E-Rulemaking: Interest Groups and the Standard-Setting Process for Hazardous Air Pollutants*, 5 J. INFO. TECH. & POL. 399, 403–05 (2008); Stuart Shapiro, *When Do Agencies Change Their Proposed Rules* (Oct. 30, 2007) (presented at APPAM: Association for Public Policy Analysis & Management Conference) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1026066 [<https://perma.cc/H7R3-3X5Z>] (finding that fewer than 10% of rulemakings received more than 100 comments); see also Nicholas R. Parrillo, *Should the Public Get to Participate Before Federal Agencies Issue Guidance? An Empirical Study*, 71 ADMIN. L. REV. 57, 97–98 (2019) (finding that only 8 of the 50 guidance documents EPA published for comment between 2011–2014 received more than 5000 comments);

significant numbers of comments, individuals and public interest organizations may provide comments that simply express general support or opposition to the rules.⁴⁸ In contrast, regulated entities often submit detailed comments addressing scientific, technical and economic issues, supported by studies and data.⁴⁹

It is not surprising then that regulated entities play such a large role in the notice and comment rulemaking process. Regulated entities and organizations that represent their interests are well organized and have significant resources to expend on rules that are likely to have significant impacts on their operations.⁵⁰ In addition, for many rules, the interests of numerous regulated entities align, so it is efficient to have organizations representing their interests comment on their behalf.⁵¹ Further, regulated entities are often able to provide much of the scientific, technical and economic data that agencies are seeking in the rulemaking process.⁵²

The imbalance in participation is not limited to the comment period for rulemaking. Numerous studies demonstrate a significant disparity in involvement of regulated entities in the development of rules prior to the notice of proposed rulemaking and following the close of the comment period for rules.⁵³ Critics of the notice and comment rulemaking process frequently compare it to Japanese Kabuki theater, “a highly stylized process for displaying in a formal way the essence of something which in real life takes place in other venues.”⁵⁴

Wagner et al., *supra* note 20, at 617 (only half of the rules that affect the public involve at least one non-profit or other commenter that is not a regulated entity).

⁴⁸ See ACUS REPORT, *supra* note 19, at 7; Michael A. Livermore, Vladimir Eidelman, & Brian Grom, *Computationally Assisted Regulatory Participation*, 93 NOTRE DAME L. REV. 977, 988 (2018) [hereinafter Livermore, Eidelman, & Grom].

⁴⁹ See ACUS REPORT, *supra* note 19, at 7; Livermore, Eidelman, & Grom, *supra* note 48, at 1028; Wagner et al., *supra* note 20, at 617, n.30.

⁵⁰ See Wagner et al., *supra* note 20, at 616–17; Weaver, *supra* note 19, at 559–60; Wagner, Barnes, & Peters, *supra* note 46, at 102. Public interest groups, on the other hand, do not have the resources that industry or trade groups have and groups of stakeholders outside of organized public interest groups often lack the ability to organize at a level that allows them to effectively participate in notice and comment rulemaking. See Rossi & Stack, *supra* note 47, at 10.

⁵¹ See Weaver, *supra* note 19, at 559–60.

⁵² See *id.* at 560; Wagner, Barnes, & Peters, *supra* note 46, at 102 n.12.

⁵³ See Wagner et al., *supra* note 20, at 613, 631, 667–669; Wagner, Barnes, & Peters, *supra* note 46, at 102–103, 109–110.

⁵⁴ See E. Donald Elliott, *Re-Inventing Rulemaking*, 41 DUKE L.J. 1490, 1492 (1992). After reviewing the rulemaking process used by EPA, OSHA and the FCC for a variety of different rules, Professor Wendy Wagner and her associates noted that “the most important deliberative opportunities may occur in informal, and sometimes questionable, ways that are not governed by the APA’s requirements for open and transparent participation.” See Wagner et al., *supra* note 20, at 618–19.

To some extent, it is not surprising that individual citizens are not more involved in many notice and comment rulemaking proceedings. There are several barriers to public participation. First, in many cases, members of the public are unaware that agencies are developing rules that may affect them, or that they have the opportunity to voice their opinion about those rules, unless they are alerted to the rules by advocacy organizations.⁵⁵ Second, even when members of the public become aware of rules and the opportunity to comment, the volume of information provided in many rules and the technical nature of the rules may intimidate potential commenters, who may not understand the issues presented in the rulemaking, the data or assumptions on which the agency is relying, or the legal limitations on the agencies' action.⁵⁶ Consequently, they may feel that they do not have useful information to provide to the agency.⁵⁷ Members of the public may also lack the time, technical resources, or financial resources to get involved in the rulemaking process.⁵⁸ Finally, some members of the public may choose not to participate in the rulemaking process because they feel that their comments are unlikely to influence change to a proposed rule under the agency.⁵⁹

The imbalance in participation in the rulemaking process is exacerbated because many of the comments submitted by members of the public do not provide agencies with the type of information that agencies seek. In many rulemakings, the majority of comments by individuals are expressions of general support or opposition for a rule or portions of a rule and are submitted as part of a mass comment campaign organized by an interest group.⁶⁰ Even when members of the public submit comments

⁵⁵ See ACUS REPORT, *supra* note 19, at 7; Weaver, *supra* note 19, at 560; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 84.

⁵⁶ See ACUS REPORT, *supra* note 19, at 7; Weaver, *supra* note 19, at 560; Wagner, Barnes, & Peters, *supra* note 46, at 116; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 84.

⁵⁷ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 84.

⁵⁸ See Weaver, *supra* note 19, at 560; Wagner, Barnes, & Peters, *supra* note 46, at 116; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 85.

⁵⁹ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 85–86. Conversely, they may choose to not participate based on the hope that they can “free ride” on the comments of someone else. *Id.* at 85.

⁶⁰ See ACUS REPORT, *supra* note 19, at 3–4 (noting that 90% of the 1 million comments submitted to EPA on the 2015 “Waters of the United States” rule were submitted as part of mass comment campaigns and that only 6% of the 22 million comments submitted on the FCC’s 2017 net neutrality rulemaking were unique comments); Rachel Augustine Potter, *More than Spam? Lobbying the EPA through Public Comment Campaigns*, BROOKINGS (Nov. 29, 2017), <https://www.brookings.edu/research/more-than-spam-lobbying-the-epa-through-public-comment-campaigns/> [<https://perma.cc/CTD9-BNRT>](finding that campaigns from public interest advocacy groups were much more likely to include broad values-based statements).

separate from such campaigns, they generally do not include the scientific, technical, or economic data agencies are seeking or even the local or situational knowledge that agencies hope to gather from the public at large.⁶¹ Those comments are unlikely to influence agencies to modify their rules and agencies face little litigation threat associated with failure to adequately respond to those comments.⁶²

The imbalance in both the scope of participation and the type of participation is significant, because empirical studies demonstrate that comments *do* make a difference.⁶³ As noted above, not all comments are created equal, but agencies frequently modify rules based on scientific, technical, or economic information that they learn during the comment period for rules, or based on comments that identify legal challenges to proposed rules.⁶⁴ Since regulated entities are more likely to be involved in the comment process and are more likely to provide those types of comments, agencies will more frequently be modifying rules to address the concerns raised by those groups than to address the concerns of the public.⁶⁵

⁶¹ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 88.

⁶² See *supra* note 34 and accompanying text; see also Weaver, *supra* note 19, at 559. Nevertheless, mass comment campaigns often advance additional goals, including (1) publicizing the concerns to Congress and the media; (2) providing the Executive branch with the cover to pursue policies that face political opposition; and (3) expanding fund-raising efforts for the organization administering the campaign. See Potter, *supra* note 60; see also ACUS REPORT, *supra* note 19, at 23 (identifying similar goals for mass comment campaigns).

⁶³ See, e.g., *Measuring the Impact of Public Comments*, GEO. WASH. REGUL. STUD. CTR. (Apr. 8, 2014), <https://regulatorystudies.columbian.gwu.edu/measuring-impact-public-comments> [<https://perma.cc/8Z4D-2K6Z>] [hereinafter GW Public Comment Study]; Wagner, Barnes, & Peters, *supra* note 46, at 118.

⁶⁴ See *supra* notes 34–37 and accompanying text. See also Wagner, Barnes, & Peters, *supra* note 46, at 118.

⁶⁵ Critics of the notice and comment rulemaking process often express skepticism that agencies are willing to make any changes to rules during the notice and comment process, but are equally sanguine regarding the effect of public involvement on the outcome of rules because they argue that most of the important decisions regarding the substance of agencies' rules are made outside of the notice and comment process in an environment where regulated entities have disproportionate access to agency decisionmakers. See Weaver, *supra* note 19, at 559; Wagner et al, *supra* note 20, at 619–20; Wagner, Barnes, & Peters, *supra* note 46, at 103–04, 109–10, 123.

III. E-RULEMAKING

A. The Transition to E-Rulemaking

For most of the last century, notice and comment rulemaking was largely inaccessible to the public. Proposed rules were published on paper in the Federal Register, only available in select libraries.⁶⁶ The scientific and technical documents that supported the rule were not published, but were available to review in agency offices, usually in Washington, D.C.⁶⁷ Persons who wished to comment on the rules could send written comments to agencies, but they could only review comments submitted by others by visiting the same agency offices that housed the scientific and technical documents.⁶⁸ Not surprisingly, regulated entities and trade associations were more likely than members of the public to have the time and resources to access those documents.⁶⁹

The unavailability of proposed rules began to change toward the end of the century and accelerated when Congress passed the E-Government Act of 2002.⁷⁰ Congress passed this law to improve transparency and public participation in the rulemaking process, improve agency decision making, and increase government accountability.⁷¹ The statute requires agencies to accept comments on rules electronically and to create electronic dockets for rules, which are made available online through a website administered by the federal government.⁷² The statute delegated the obligation to implement the transition to the Office of Management and Budget.⁷³

To implement the statute, the federal government encouraged all agencies to manage their rulemaking dockets through the Federal Docket Management System (“FDMS”) and to administer the notice and comment rulemaking process through the website, Regulations.gov, a new centralized web portal for rulemaking and the publication of other

⁶⁶ See Weaver, *supra* note 19, at 556; Cary Coglianese, *Citizen Participation in Rulemaking: Past, Present and Future*, 55 DUKE L.J. 943, 949 (2006) [hereinafter Coglianese, *Citizen Participation*].

⁶⁷ See Weaver, *supra* note 19, at 556; Lauren Moxley, *E-Rulemaking and Democracy*, 68 ADMIN. L. REV. 661, 667 (2016).

⁶⁸ See Weaver, *supra* note 19, at 556; Moxley, *supra* note 67, at 667; Coglianese, *Citizen Participation*, *supra* note 66, at 949–50.

⁶⁹ See Weaver, *supra* note 19, at 556.

⁷⁰ See E-Government Act of 2002, Pub. L. No. 107-347, 116 Stat. 2899 (2002).

⁷¹ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 91; Johnson, *#BetterRules*, *supra* note 15, at 1389, 1394.

⁷² See E-Government Act of 2002, *supra* note 70, § 206.

⁷³ *Id.* § 207.

Executive Branch documents.⁷⁴ Over 90% of federal agencies now administer their rulemaking through Regulations.gov.⁷⁵

In many ways, the rulemaking process on Regulations.gov expands opportunities for meaningful, public participation.⁷⁶ When agencies publish proposed rules on Regulations.gov, they also publish all of the supporting documents, so that the public can have access to the documents without needing to physically drive to Washington, D.C.⁷⁷ Persons who wish to comment on the rules can submit their comments online through the site, and they can review all previous comments that have been submitted to the agency when preparing their own comments.⁷⁸ When the E-Government Act was originally passed, supporters envisioned even greater use of technology by agencies to create greater dialogue during the notice and comment process.⁷⁹ However, this has yet to be established.⁸⁰

Technology continues to evolve, and agencies and interest groups have begun to use social media and the tools of Web 2.0 to notify the public that agencies are seeking comment on proposed rules, to educate the public about the rules, and to spur public comment on the rules.⁸¹ Reformers continue to have hope that the new tools can create more dialogue during the notice and comment process and change the nature of public participation.⁸²

⁷⁴ See ACUS REPORT, *supra* note 19, at 9; Weaver, *supra* note 19, at 557; Senate Committee Report, *supra* note 33, at 12. Regulations.gov was created in 2003. See ACUS REPORT, *supra* note 19, at 9. From its inception until 2019, EPA hosted the federal government's E Rulemaking Program Management Office (PMO). See Senate Committee Report, *supra* note 33, at 12. In 2019, the General Services Administration (GSA) took over administration of the PMO. *Id.* The e-rulemaking program is now managed by 43 federal agencies, through an Executive Steering Committee that is co-chaired by the GSA and the Office of Management and Budget. *Id.*

⁷⁵ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 91.

⁷⁶ See Lubbers, *supra* note 33, at 452; see also Mendelson, *Torrents of E-Mail*, *supra* note 36, at 1344–45.

⁷⁷ See Weaver, *supra* note 19, at 553–54.

⁷⁸ See *id.*

⁷⁹ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 92 (noting that e-rulemaking could also encompass hosting public meetings online or using web applications to promote public awareness of and participation in regulatory proceedings and reaching out and providing compliance assistance to regulated entities); Johnson, *#BetterRules*, *supra* note 15, at 1382.

⁸⁰ Johnson, *#BetterRules*, *supra* note 15, at 1395.

⁸¹ See Johnson, *#BetterRules*, *supra* note 15, at 1382, 1390; Benjamin, *Evaluating E-Rulemaking*, *supra* note 33, at 898–99; Lubbers, *supra* note 33, at 453–54; Beth Simone Noveck, *The Electronic Revolution in Rulemaking*, 53 EMORY L. J. 433, 473–74 (2004).

⁸² See Johnson, *#BetterRules*, *supra* note 15, at 1390, 1396 (suggesting web 2.0 and social media could help transform the dialogue because they are collaborative and allow users to produce and generate content, rather than simply receive content); Michael Herz, *Using Social Media in Rulemaking: Possibilities and Barriers*, *Final*

B. Benefits of E-Rulemaking

As federal agencies moved the notice and comment rulemaking process online and began to take advantage of social media and other Web 2.0 tools in administering the process, supporters envisioned significant benefits. First, supporters believed that e-rulemaking would be a more efficient process that could save money and resources for the government.⁸³ At the same time, they believed it would be a more transparent and democratic process that increased accountability and confidence in the government.⁸⁴

The shift to electronic rulemaking also promised the reduction in the imbalance of public participation by making it easier for persons other than regulated entities and trade groups to learn about rules, access the documents and knowledge supporting rules, review and analyze the comments submitted on rules, and submit comments on rules.⁸⁵ Ideally, the transformation to e-rulemaking was intended to make it easier for members of the public to participate in the process *and* to write higher quality and more effective comments.⁸⁶

As agencies shifted to rulemaking online, they have begun to recognize the value of social media and other tools to publicize rules more widely,⁸⁷ and to educate the public about the nature of the rules.⁸⁸ By providing plain English descriptions of rules, videos, infographics, and similar materials online, agencies can reduce some of the barriers to citizen

Report to the Administrative Conference of the United States, (Nov. 21, 2013), <https://www.acus.gov/sites/default/files/documents/Herz%20Social%20Media%20Final%20Report.pdf> [<https://perma.cc/55EY-KG83>].

⁸³ See Weaver, *supra* note 19, at 557.

⁸⁴ See ACUS REPORT, *supra* note 19, at 10; Weaver, *supra* note 19, at 557–58; Johnson, #BetterRules, *supra* note 15, at 1395; Johnson, *Internet Changes Everything*, *supra* note 19, at 289.

⁸⁵ See ACUS Recommendation 2021-1, *supra* note 19, at 2; ACUS REPORT, *supra* note 19, at 5–6; Weaver, *supra* note 19, at 554; Johnson, #BetterRules, *supra* note 15, at 1395–96. Critics worry, though, that “e-rulemaking reforms could skew the pool of participants . . . by disproportionately focusing on outreach efforts through the Web.” See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 115.

⁸⁶ See Johnson, *Internet Changes Everything*, *supra* note 19, at 303–04, 324.

⁸⁷ See Johnson, #BetterRules, *supra* note 15, at 1396–97; Weaver, *supra* note 19, at 558; Lubbers, *supra* note 33, at 452–54.

⁸⁸ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 92; Johnson, #BetterRules, *supra* note 15, at 1386–87, 1395, 1405 (describing EPA’s use of social media and other tools to educate the public about its 2015 rule defining “Waters of the United States” under the Clean Water Act); Johnson, *Internet Changes Everything*, *supra* note 19, at 303–04.

participation in the rulemaking process, such as information overload and the technical nature of most rules.⁸⁹

Agencies are also using social media and other Web 2.0 tools to educate the public about how the rulemaking process works, how to submit comments and, perhaps most importantly, the types of comments that are most useful and effective.⁹⁰ Greater public participation and higher quality public comments should ideally lead to better informed agencies and higher quality, better reasoned decisions.⁹¹

While supporters of e-rulemaking tout those benefits,⁹² critics argue that the shift to e-rulemaking has been evolutionary, rather than revolutionary.⁹³ The volume of comments provided by the public on most rules has not significantly changed.⁹⁴ Although there have been rules that

⁸⁹ See Johnson, *#BetterRules*, *supra* note 15, at 1386–87, 1395, 1404–05; Farina et al., *supra* note 26, at 389–90, 437–38; Herz, *supra* note 82, at 32; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 106; Johnson, *Internet Changes Everything*, *supra* note 19, at 303–04.

⁹⁰ See Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 105–06; Johnson, *#BetterRules*, *supra* note 15, at 1386–88; See also ACUS Recommendation 2021-1, *supra* note 19, at 4 (“Agencies can advance the goals of public participation . . . by providing educational information about public involvement in the rulemaking process.”).

⁹¹ See ACUS REPORT, *supra* note 19, at 5; Weaver, *supra* note 19, at 559; Moxley, *supra* note 67, at 664; Johnson, *#BetterRules*, *supra* note 15, at 1395; Johnson, *Internet Changes Everything*, *supra* note 19, at 303–04, 315–16.

⁹² See Coglianesse, *Citizen Participation*, *supra* note 66, at 947; Johnson, *Internet Changes Everything*, *supra* note 19, at 303.

⁹³ See Coglianesse, *Citizen Participation*, *supra* note 66, at 949; Johnson, *#BetterRules*, *supra* note 15, at 1382.

⁹⁴ See GW Public Comment Study, *supra* note 63, at 954–55; Johnson, *#BetterRules*, *supra* note 15, at 1395.

have attracted unprecedented levels of participation in the digital age,⁹⁵ for most rules, very few persons submit comments.⁹⁶

Critics also argue that e-rulemaking and the use of social media have also done little to improve the quality of public comments.⁹⁷ Although the changes have facilitated an increase in the number of comments expressing preferences, values and sentiment, the changes have not generated an increase in the situational knowledge or other factual information that agencies are seeking from members of the public.⁹⁸ Critics argue that social media and the nature of public engagement with

⁹⁵ See Potter, *supra* note 60 (discussing EPA’s 2015 rule defining “Waters of the United States” under the Clean Water Act, which received more than a million public comments); see also FEDERAL CDO COUNCIL, IMPLEMENTING FEDERAL-WIDE COMMENT ANALYSIS TOOLS, CDO COUNCIL SPECIAL PROJECTS FINAL RECOMMENDATIONS 15 (June 2021), https://resources.data.gov/assets/documents/CDOC_Recommendations_Report_Comment_Analysis_FINAL.pdf [<https://perma.cc/TVP6-SM8E>] [hereinafter “CDO COUNCIL REPORT”] (indicating that more than 2.9 million comments were submitted for rules on Regulations.gov between October 2019 and March 2021); DAVID FREEMAN ENGSTROM ET AL., *GOVERNMENT BY ALGORITHM: ARTIFICIAL INTELLIGENCE IN FEDERAL ADMINISTRATIVE AGENCIES*, REPORT SUBMITTED TO THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES 59 (Feb. 2020), http://complaw.stanford.edu/readings/government_by_algorithm.pdf [<https://perma.cc/NMR2-JH7B>] (discussing the mega-participation on a few rules) [hereinafter *GOVERNMENT BY ALGORITHM*].

⁹⁶ See STEVEN J. BALLA, PUBLIC COMMENTING ON FEDERAL AGENCY REGULATIONS: RESEARCH ON CURRENT PRACTICES AND RECOMMENDATIONS TO THE ADMINISTRATIVE CONFERENCE OF THE UNITED STATES, 25–27 (Mar. 15, 2011), <https://www.acus.gov/sites/default/files/COR-Balla-Report-Circulated.pdf> [<https://perma.cc/Z8CV-6UUC>] (finding similar median numbers of comments on agency rules before and after institution of e-rulemaking); Stuart Shapiro, *Presidents and Process: A Comparison of the Regulatory Process Under the Clinton and Bush (43) Administrations*, 23 J.L. & POLS. 393, 405 (2007) (finding that the median number of comments submitted on rules before and after the migration of rulemaking online was 5). In 2018, almost 1/3 of the rules proposed by agencies received no public comments. See Sant’Ambrogio & Staszewski, *supra* note 20, at 814. The low level of citizen participation on most rules is not surprising, in light of the fact that federal agencies issue almost 8,000 rules every year. See Mortazavi, *supra* note 20, at 207.

⁹⁷ See Coglianese, *Citizen Participation*, *supra* note 66, at 949; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 94; Steven J. Balla & Benjamin M. Daniels, *Information Technology and Public Commenting on Agency Regulations*, 1 REGUL. & GOVERNANCE 46, 48 (2007).

⁹⁸ See Johnson, *#BetterRules*, *supra* note 15, at 1395–96; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 94. In response to a survey from Professor Jeffrey Lubbers, sixty percent of the federal agency officials engaged in rulemaking that participated in the survey indicated that they did not receive any more useful comments through e-rulemaking than they had received before the process moved online. *Id.* (citing Lubbers, *supra* note 33, at 465–66). Half of the respondents also suggested that the shift to e-rulemaking increased the number of opinion and preference comments. *Id.*

the web promote the formulation of comments expressing opinions, and are not conducive to the deeper contemplation that could facilitate the submission of effective comments from the public.⁹⁹

C. Challenges Created by E-Rulemaking

While the shift to e-rulemaking may not have increased public involvement or the quality of public comments, it has created some significant challenges for agencies. First, because online commenting is fairly easy and inexpensive, agencies have been flooded with millions of comments in some high profile rulemakings, leading critics to refer to the process as “notice and spam.”¹⁰⁰ The Federal Communications Commission, for instance, received over 23 million comments on a net neutrality proposal in 2017.¹⁰¹ In many of the rulemakings that generate high volumes of comments, a significant majority of the comments are submitted as part of mass comment campaigns organized by interest groups.¹⁰² The anonymity created by e-rulemaking has led to other problems for agencies, as large numbers of falsely attributed comments

⁹⁹ See Johnson, #BetterRules, *supra* note 15, at 1404–12. There are several limits to the effectiveness of social media. *Id.* at 1405. First, while educational materials provided by agencies through social media could be effective if members of the public read and engage with the materials, studies suggest that readers do not pay close attention to most material that they read online. *Id.* Social media encourages simplification of information, rather than deep reflection or contemplation. *Id.* at 1405–06. In addition, even when information about rules can be distilled into manageable and accessible formats, it tends to be a bit dry and unlikely to go viral. *Id.* at 1406. Most importantly, though, social network users spend a lot of time liking, ranking, and sharing preferences. *Id.* at 1411. In the rulemaking context, that encourages the development of opinion, value and preference comments. *Id.*

¹⁰⁰ See Weaver, *supra* note 19, at 560–61; Senate Committee Report, *supra* note 33, at 1; Potter, *supra* note 60; Johnson, #BetterRules, *supra* note 15, at 1395; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 95.

¹⁰¹ See Weaver, *supra* note 19, at 561.

¹⁰² See ACUS REPORT, *supra* note 19, at 18, 22–24; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 95. Only 6% of the comments submitted in response to the FCC net neutrality proposal in 2017 were unique. See ACUS REPORT, *supra* note 19, at 3. In addition, of the more than 1 million comments that EPA received in response to a 2014 proposal to re-define the “Waters of the United States” under the Clean Water Act, 90% were submitted as part of mass comment campaigns. See ACUS REPORT, *supra* note 19, at 3. Based on a review of EPA rulemakings between 2007 and 2014, a Brookings Institute study found that 16% of EPA’s rules were subject to at least one mass comment campaign, and 9% were subject to three or more campaigns. See Potter, *supra* note 60. Organizations sponsor mass comment campaigns not only to attempt to influence the outcome of rulemaking, but also to raise awareness about the issues in a rule or to increase membership or financial contributions for the organization. See ACUS REPORT, *supra* note 19, at 22–23.

are being submitted in some forums.¹⁰³ While mass comment campaigns and falsely attributed comments pre-date e-rulemaking, technological advances have facilitated their exponential growth.¹⁰⁴ In some rulemakings, groups have utilized computerized technology (bots) to automatically create and submit thousands of comments on rules.¹⁰⁵

The increase in the volume of comments, coupled with the decrease in the validity and accuracy of some comments, creates several problems for agencies. As noted above, agencies are required to consider and respond to comments that they receive on proposed rules.¹⁰⁶ When agencies receive thousands or even millions of comments, it becomes time-consuming, expensive, and resource-intensive for agencies to review, analyze and respond to every comment.¹⁰⁷ While agencies can respond to similar comments together, they must still determine which of the thousands or millions of comments are sufficiently similar enough to be handled together.¹⁰⁸ As the volume of falsely attributed or computer-generated comments increases, agencies must spend more time determining whether the substance of comments is valid or accurate, often without knowing which comments are computer-generated or falsely

¹⁰³ See ACUS Recommendation 2021-1, *supra* note 19, at 2; Senate Committee Report, *supra* note 33, at 1. “Falsely attributed” comments are comments submitted in the name of persons who did not submit them. See ACUS Recommendation 2021-1, *supra* note 19, at 2.

¹⁰⁴ See ACUS REPORT, *supra* note 19, at 13. When the FDA proposed a rule in 1995, prior to e-rulemaking, to regulate cigarettes under the Food, Drug and Cosmetics Act, the agency received more than 700,000 comments, including many identical comments on postcards. *Id.* Similarly, automated text generation software was developed in the 1960’s, so computer-generated comments are not necessarily an entirely new phenomenon. *Id.*

¹⁰⁵ See ACUS Recommendation 2021-1, *supra* note 19, at 2; Weaver, *supra* note 19, at 554. In the FCC’s 2017 net neutrality rulemaking, one-third of the comments submitted were sent from temporary or disposable e-mail domains and about 10 million were sent by commenters that submitted multiple comments, both of which suggest the comments were likely computer-generated. See ACUS Report, *supra* note 19, at 3–4. Computer-generated comments are often generated by a software algorithm and can be submitted to agencies repeatedly by the software. See *id.* at 12. As the bots have been used in the past, although humans initiate the generation and submission of comments by the bot, humans generally do not review the comments or participate in the actual submission of the comments. *Id.*

¹⁰⁶ See *supra* note 104.

¹⁰⁷ See ACUS REPORT, *supra* note 19, at 2, 18; ACUS Recommendation 2021-1, *supra* note 19, at 2–3; Senate Committee Report, *supra* note 33, at 1; Wagner et al., *supra* note 20, at 621; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 95; Johnson, *Internet Changes Everything*, *supra* note 19, at 315.

¹⁰⁸ See ACUS Recommendation 2021-1, *supra* note 19, at 3; ACUS REPORT, *supra* note 19, at 22–23.

attributed.¹⁰⁹ In order to handle the increased processing demands, some agencies have begun contracting with companies to organize and summarize the comments submitted in rulemakings.¹¹⁰ Not surprisingly, agency rules are frequently delayed when agencies must review and respond to thousands or millions of comments.¹¹¹ In addition, as the volume of comments increases, so does the potential for agencies to overlook important information or arguments presented in the comments.¹¹² When that happens, agency rules are more vulnerable to legal challenges.¹¹³

IV. GENERATIVE ARTIFICIAL INTELLIGENCE AND CHATGPT

Notice and comment rulemaking has evolved as the process migrated online and as agencies have begun to utilize social media and other Web 2.0 technologies to augment the process. The next technological innovation that has the potential to transform the process, for better or worse, is artificial intelligence, including ChatGPT. So, what is Chat GPT, and how might it be used? Before focusing on ChatGPT, a brief overview of artificial intelligence and natural language processing tools will provide some necessary foundation.

A. Artificial Intelligence

There is no universal definition of artificial intelligence (“AI”), but the term generally refers to a spectrum of tools that appear to learn and solve complex problems, make predictions, or undertake other tasks that usually rely on human decision-making in a manner that appears to be similar to the way that humans make decisions.¹¹⁴ AI tools are being

¹⁰⁹ See ACUS REPORT, *supra* note 19, at 2, 5; ACUS Recommendation 2021-1, *supra* note 19, at 3–4; Weaver, *supra* note 19, at 554–55. Public confidence in rulemaking could also erode if agencies receive, and potentially rely, on computer-generated or falsely attributed comments. See ACUS REPORT, *supra* note 19, at 40.

¹¹⁰ See Wagner et al., *supra* note 20, at 621.

¹¹¹ See ACUS Recommendation 2021-1, *supra* note 19, at 2–3; Johnson, *Internet Changes Everything*, *supra* note 19, at 315. In some cases, opponents of a rule may use mass commenting, computer-generated commenting, and/or falsely attributed commenting for nefarious purposes, such as delaying a rulemaking. See ACUS REPORT, *supra* note 19, at 10; Senate Committee Report, *supra* note 33, at 1.

¹¹² See ACUS REPORT, *supra* note 19, at 18; Johnson, *Beyond the Usual Suspects*, *supra* note 19, at 95.

¹¹³ See ACUS Recommendation 2021-1, *supra* note 19, at 2–3.

¹¹⁴ See *Administrative Conference Statement #20, Agency Use of Artificial Intelligence*, ACUS (Dec. 16, 2020), <https://www.acus.gov/recommendation/agency-use-artificial-intelligence> [<https://perma.cc/5LPB-HKPF>] [hereinafter *ACUS Statement #20*]; Tricia Matibag, *Artificial Intelligence for Local Governance*, 50 URB. L. J. 415 (2020). In a recent Federal Register notice, the National

frequently used in the commercial realm for facial recognition, autonomous vehicle systems, biomedical research, advanced game playing software, and as assistants and chatbots.¹¹⁵ Government agencies are also beginning to use AI tools to make predictive decisions relating to criminal detention and parole and to adjudicate claims for government benefits.¹¹⁶ Proponents of AI tools argue that these tools facilitate more accurate, timely, and consistent (predictable) decision-making, while also saving money.¹¹⁷ Critics argue that AI tools are opaque and make decisions based on biases and undisclosed assumptions.¹¹⁸ In recognition of the potential problems created by the use or abuse of AI tools, governments are beginning to enact or consider laws that regulate the technologies.¹¹⁹ In an open letter authored in March 2023, following the

Telecommunications and Information Administration defined an “AI system” as “an engineered or machine-based system that can, for a given set of objectives, generate outputs such as predictions, recommendations or decisions influencing real or virtual environments.” See National Telecommunications and Information Administration, *AI Accountability Policy Request for Comment*, 88 Fed. Reg. 22433, 22435 (Apr. 13, 2023) [hereinafter *AI Accountability Policy*].

¹¹⁵ See *ACUS Statement #20*, *supra* note 114, at n.10.

¹¹⁶ See Cary Coglianese & Alicia Lai, *Algorithm vs. Algorithm*, 72 DUKE L.J. 1281, 1284 (2020); see also Cary Coglianese & Lavi M. Ben Dor, *AI in Adjudication and Administration*, 86 BROOK. L. REV. 791, 814–27 (2021); GOVERNMENT BY ALGORITHM, *supra* note 95, at 22–29. The FCC is also using AI tools to help review comments submitted in notice and comment rulemaking. See Coglianese & Lai, *supra* note 116, at 1308. Use of AI by federal agencies to process comments is addressed further in Part V of this article. See *infra* Part V.C.

¹¹⁷ See Coglianese & Lai, *supra* note 116, at 1306–07; W. Nicholson Price II & Arti K. Rai, *Clearing Opacity Through Machine Learning*, 106 IOWA L. REV. 775, 778 (2021); *ACUS Statement #20*, *supra* note 114. While AI systems can help agencies save money in the long term, they can require substantial investments of human and financial capital at the outset. See *id.*

¹¹⁸ See Price II & Rai, *supra* note 117, at 777–79. See also Coglianese & Lai, *supra* note 116, at 1284 (discussing criticisms of AI).

¹¹⁹ The European Union is in the process of adopting an Artificial Intelligence Act that would create a risk classification system for AI tools and impose varying levels of regulation on the tools depending on the severity of risk presented by the tools. See *Proposal for a Regulation of the European Parliament and of the Council Laying down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act) and Amending Certain Union Legislative Acts*, EUR. COMM’N (Apr. 21, 2021), https://eur-lex.europa.eu/resource.html?uri=cellar:e0649735-a372-11eb-9585-01aa75ed71a1.0001.02/DOC_1&format=PDF [<https://perma.cc/ZA75-SDW4>]. New York City has adopted a law that requires audits of AI systems. At the federal level, the National Telecommunications and Information Administration has issued a notice in the Federal Register addressing a policy on AI accountability and soliciting input regarding whether regulation other measures are necessary to assure that AI systems are legal, ethical, safe and trustworthy. See *AI Accountability Policy*, *supra* note 114. Some of the options discussed in the proposal are audits and assessments, as well as more aggressive regulation. *Id.*

release of a new version of ChatGPT, more than 1,000 technology leaders and researchers called for a six-month moratorium on the development of new AI systems because the technologies posed “profound risks to society and humanity.”¹²⁰

B. Natural Language Processing and Machine Learning

Natural language processing (“NLP”) refers to a category of AI tools that analyze and summarize language datasets or make predictions based on language datasets. NLP tools have been developed that identify the reading level at which text is written, predict whether documents include plagiarism, summarize documents or organize documents by topic, identify the sentiments expressed in text, and predict the words that are likely to be used in association with surrounding words.¹²¹

Most of these NLP tools have been developed through a process known as “machine learning.”¹²² Machine learning algorithms learn autonomously by finding patterns and making inferences from large datasets that can contain images, numbers, dense text, and, in the case of natural language processing, natural language.¹²³ There are two primary types of machine learning: supervised learning and unsupervised learning.¹²⁴ In supervised learning, humans present an algorithm with numerous labeled examples, such as multiple pictures of cars and trains, and the algorithm generates a model to identify other unlabeled examples based on patterns that the algorithm discovers by comparing the labeled examples.¹²⁵ In unsupervised learning, humans present an increasing number of unlabeled examples to the algorithm, which builds its own

¹²⁰ See Cade Metz, ‘The Godfather of A.I.’ Leaves Google and Warns of Danger Ahead, N.Y. TIMES (May 1, 2023), <https://www.nytimes.com/2023/05/01/technology/ai-google-chatbot-engineer-quits-hinton.html> [<https://perma.cc/2HLK-LB9P>].

¹²¹ See ACUS REPORT, *supra* note 19, at 44–45 n.157 (identifying Flesch-Kincaid Readability, Linguistic Inquiry and Word Count, Automated Document Summarization, Sentiment Analysis, Topic Modeling, and Word Embedding as examples of NLP tools).

¹²² See Coglianese & Lai, *supra* note 116, at 1305–06.

¹²³ See *id.* at 1306; Price II & Rai, *supra* note 117, at 777; Karen Hao, *What is Machine Learning?*, MIT TECH. REV. (Nov. 27, 2018), <https://www.technologyreview.com/2018/11/17/103781/what-is-machine-learning-we-drew-you-another-flowchart/> [<https://perma.cc/3GME-7AYL>].

¹²⁴ See Coglianese & Lai, *supra* note 116, at 1306.

¹²⁵ See *id.*; Price II & Rai, *supra* note 117, at 777; Lizzie Turner, *Machine Learning: A Primer*, MEDIUM (May 27, 2018), <https://medium.com/@lizziedotdev/lets-talk-about-machine-learning-ddca914e9dd1> [<https://perma.cc/A3S5-7E7K>].

predictive model to distinguish the examples.¹²⁶ While machine learning algorithms are often trained using one method or the other, in some cases algorithms are trained using supervised learning followed by unsupervised learning. Regardless of which methods are used to train the models, the algorithms become increasingly accurate in making predictions as they are trained on larger amounts of data.¹²⁷

Traditionally, machine learning tools were used primarily to predict, observe and classify data.¹²⁸ However, a new generation of machine learning tools, generative artificial intelligence, are being used to create images and text on demand.¹²⁹ ChatGPT is one of those generative AI tools.

C. ChatGPT

ChatGPT is a generative AI tool that can be used to summarize information and generate a wide variety of types of content, including essays, lectures, outlines, stories, op-eds, poems, scripts, recipes, and songs in response to natural language questions (prompts) from users.¹³⁰ It is produced by OpenAI and, within the first 5 days after version 3.5 was released to the public in November, 2022, over 1 million people signed up to use and help improve it.¹³¹ A more advanced version, version 4.0, was

¹²⁶ See Coglianesi & Lai, *supra* note 116, at 1306; Matibag, *supra* note 114, at 421–22. In either supervised or unsupervised learning, humans provide the training data and tweak the algorithm's optimization process for analyzing test data. *Id.*

¹²⁷ See Coglianesi & Lai, *supra* note 116, at 1306; Price II & Rai, *supra* note 117, at 777–78.

¹²⁸ See MCKINSEY & CO., *supra* note 4.

¹²⁹ *Id.*

¹³⁰ See Mollick & Mollick, *supra* note 4, at 2; MCKINSEY & CO., *supra* note 4. GPT stands for generative pretrained transformer. *See id.*

¹³¹ See Mollick & Mollick, *supra* note 4, at 1; MCKINSEY & CO., *supra* note 4. Alex Millson of Bloomberg recently described the impact of the chatbot as follows: “It’s been a mere four months since . . . OpenAI unleashed ChatGPT and . . . changed the world forever. In just 15 short weeks, it has sparked doomsday predictions in global job markets, disrupted education systems and drawn millions of users, from big banks to app developers.” See Alex Millson, *Everything You Need to Know About ChatGPT-4*, TIME (Mar. 15, 2023, 8:55 AM), <https://time.com/6263022/what-to-know-about-chatgpt-4/> [<https://perma.cc/TXC6-3EKR>]. For an outline of the founding of ChatGPT and the evolution of the product from ChatGPT 1.0 to the present ChatGPT 4.0, see Bernard Marr, *A Short History of ChatGPT: How We Got To Where We Are Today*, FORBES (May 19, 2023, 1:14 AM), <https://www.forbes.com/sites/bernardmarr/2023/05/19/a-short-history-of-chatgpt-how-we-got-to-where-we-are-today/?sh=6dd9716b674f> [<https://perma.cc/P9EU-Y87C>].

released in March 2023, and it successfully answered 90% of the multiple choice questions on the uniform bar exam.¹³²

ChatGPT is an AI model that predicts the next word in a body of text, based on its training on over 45 terabytes of data, including millions of pages of websites and digital media, and adds that word to a string of text.¹³³ It continues to repeatedly predict the next word in the new text string and add it to the string to construct content (response to query, story, song, summary) in response to users' prompts.¹³⁴ In creating content, though, the model does not *always* choose to add the statistically most probable word to the existing body of text.¹³⁵ In some random cases, it chooses another highly probable, but not most probable word.¹³⁶ Consequently, if a user asks ChatGPT to do the exact same task four different times, ChatGPT may provide the user with four different outputs.¹³⁷

¹³² See *GPT-4 is OpenAI's Most Advanced System, Producing Safer and More Useful Responses*, OPENAI, <https://openai.com/product/gpt-4> [<https://perma.cc/9FXX-2EAV>] (last visited Oct. 1, 2023) [hereinafter *GPT-4 Launch*]. In some fields, generative AI is developing to the point where its output may be indistinguishable from that created independent of it. For instance, in March, 2023, Berlin artist Boris Eldagsen won an award in the creative photo category of the Sony World Photography Awards for his photo entitled *Pseudomesia: The Electrician*. See Allison Parshall, *How This AI Image Won a Major Photography Competition*, SCI. AM. (Apr. 21, 2023), <https://www.scientificamerican.com/article/how-my-ai-image-won-a-major-photography-competition/> [<https://perma.cc/HJ8L-JCRH>]. He turned down the award, though, when he announced that he had created it using DALL-E 2, an AI image generator. *Id.* Eldagsen noted, "I applied as a cheeky monkey, to find out if the [competitions] are prepared for AI images to enter. They are not." *Id.*

¹³³ See *What is ChatGPT Doing . . . And Why Does it Work?*, STEPHEN WOLFRAM (Feb. 14, 2023), <https://writings.stephenwolfram.com/2023/02/what-is-chatgpt-doing-and-why-does-it-work/> [<https://perma.cc/BBJ3-5JPQ>] [hereinafter WOLFRAM]; Jonathan H. Choi et al., *ChatGPT Goes to Law School* 8, J. LEGAL EDUC. (Jan. 23, 2023) (forthcoming) <https://ssrn.com/abstract=4335905>; MCKINSEY & CO., *supra* note 4. According to Wolfram, the bot is always trying to "produce a 'reasonable continuation' of whatever text it's got so far, where by 'reasonable' we mean 'what one might expect someone to write after seeing what people have written on billions of webpages'". See WOLFRAM, *supra*.

¹³⁴ See WOLFRAM, *supra* note 133; Choi et al., *supra* note 133, at 1.

¹³⁵ See WOLFRAM, *supra* note 133. Apparently, if the bot always picked the most probable word to continue a body of text, the output would be flat, rather than creative, whereas if the bot randomly chooses less probable words periodically, it will generate "more interesting" output. *Id.* As Wolfram observes, training artificial intelligence models is an "art", rather than purely "science." *Id.* Much that has been discovered and implemented to train the models has been discovered through trial and error. *Id.*

¹³⁶ *Id.*

¹³⁷ *Id.*

If you haven't used ChatGPT, you may still be confused by its processes. To determine its complexities, let's look at an example. In the legal context, a lawyer might ask ChatGPT to draft a complaint to file a lawsuit for battery against a coffee shop, because an employee spilled hot coffee on a client. Since at least some of the text on which ChatGPT was trained included legal documents, and the bot has learned what words generally follow each other in that context, and in the context of claims for battery, the bot will generate an initial draft of a complaint for battery. To the extent that the lawyer is unsatisfied with the document, the lawyer can ask ChatGPT to make changes to various parts of the document or to the style or format of the document and ChatGPT will generate a new version of the document. The lawyer can continue to prompt ChatGPT to make changes until the lawyer is satisfied with the document.

Before it was released to the public, ChatGPT was initially trained through supervised learning, where humans provided it with labeled examples that it used to generate a model used to make predictions on new data.¹³⁸ After the initial training, Open AI trained the bot further through reinforcement learning from human feedback ("RLHF").¹³⁹ In this process, humans asked the AI to do the same task several times and then ranked the content produced by the AI each time from best to worst.¹⁴⁰ The AI incorporated that feedback into its model, allowing it the ability to improve its predictions in the future.¹⁴¹ After the RLHF phase, ChatGPT was trained through unsupervised learning, where the bot created its own output in response to its own prompts and evaluated the outputs to improve the model that it uses to generate content.¹⁴² While some generative AI tools may be trained on a narrow, specialized set of input data, ChatGPT was trained on a broad general purpose corpus and optimized for general purpose dialog.¹⁴³ However, it performs well on more specialized tasks and, as noted below, can be fine-tuned by users to perform specialized tasks more effectively.¹⁴⁴

ChatGPT has both strengths and weaknesses, just like any tool—technological or otherwise. It can produce very clearly written, credible

¹³⁸ See *Introducing ChatGPT*, OPENAI (Nov. 30, 2022), <https://openai.com/blog/chatgpt> [<https://perma.cc/XC5F-MA6L>] [hereinafter *Introducing ChatGPT*]; WOLFRAM, *supra* note 133.

¹³⁹ See *Introducing ChatGPT*, *supra* note 138; WOLFRAM, *supra* note 133; Choi et al., *supra* note 133, at 2.

¹⁴⁰ See *Introducing ChatGPT*, *supra* note 138; Choi et al., *supra* note 133, at 2.

¹⁴¹ See *Introducing ChatGPT*, *supra* note 138; Choi et al., *supra* note 133, at 2.

¹⁴² See *Introducing ChatGPT*, *supra* note 138; WOLFRAM, *supra* note 133; Choi et al., *supra* note 133, at 2.

¹⁴³ See *Introducing ChatGPT*, *supra* note 138; WOLFRAM, *supra* note 133; Choi et al., *supra* note 133, at 2.

¹⁴⁴ See Choi et al., *supra* note 133, at 12.

sounding material in seconds.¹⁴⁵ The output is usually very well organized and presented in a clear, analytical format, with few, if any, grammatical errors.¹⁴⁶ ChatGPT is very effective in summarizing material and reciting factual information.¹⁴⁷ When law professors at the University of Minnesota used ChatGPT to generate answers for four law school exams, the professors noted that the bot had a “strong grasp of legal rules and consistently solid organization and composition” and was “good at accurately summarizing legal doctrines and correctly reciting the facts and holdings of cases.”¹⁴⁸ The bot performed better on the essay questions than multiple choice questions, and scored well enough to receive a C+ for the four courses.¹⁴⁹

ChatGPT has other strengths as well. For instance, when asked to review sentiment and tone, the bot was very effective.¹⁵⁰ It can also be used to generate a variety of ideas to facilitate brainstorming and creativity by users.¹⁵¹ Its flexibility is also a strength. The bot responds well to criticism and suggestions from users and adapts its output to incorporate that feedback.¹⁵² In fact, it works best when users review and supplement the output, rather than relying on the initial output of the bot as an end product.¹⁵³

In addition, ChatGPT is customizable. Although it was trained on a massive, general purpose corpus and optimized for general purpose dialog,

¹⁴⁵ See Bernard Marr, *The Best Examples of What You Can Do With ChatGPT*, FORBES (Mar. 1, 2023, 2:22 AM), <https://www.forbes.com/sites/bernardmarr/2023/03/01/the-best-examples-of-what-you-can-do-with-chatgpt/?sh=38ba2963df11> [https://perma.cc/M4WV-HKKD]; MCKINSEY & Co., *supra* note 4.

¹⁴⁶ See Choi et al., *supra* note 133, at 8–9; Marr, *supra* note 145.

¹⁴⁷ See Choi et al., *supra* note 133, at 8–9. The University of Minnesota law faculty who asked ChatGPT to generate answers to law school exams observed that the answers were “typically clear and well crafted—perhaps even suspiciously so compared to real students writing a time limited exam.” *Id.* at 9.

¹⁴⁸ See Choi et al., *supra* note 133, at 8.

¹⁴⁹ *Id.* at 1. Although the bot performed worse on the multiple choice questions than the essay questions, it still performed statistically significantly better than chance on the multiple choice questions. *Id.* at 5. Since the professors conducted their experiment using ChatGPT 3.5, it is likely that their results for the multiple choice questions would be significantly different if they conducted the study using ChatGPT 4.0, as version 3.5 only answered 10% of the multiple choice questions on the Uniform Bar Exam correctly, while version 4.0 answered 90% of the questions correctly. See *supra* note 132 and accompanying text.

¹⁵⁰ See Marr, *supra* note 145.

¹⁵¹ See Marr, *supra* note 145; Mollick & Mollick, *supra* note 4, at 5–6 (discussing the use of ChatGPT to train students to evaluate concepts and to break the illusion of explanatory depth).

¹⁵² See *Introducing ChatGPT*, *supra* note 138; MCKINSEY & Co., *supra* note 4.

¹⁵³ See Choi et al., *supra* note 133, at 12; MCKINSEY & Co., *supra* note 4.

users can train it further with additional data and prompts to “fine-tune” it to summarize a more limited corpus of data or to perform other specialized tasks.¹⁵⁴

ChatGPT does, however, have some important limitations. The most significant drawback to the bot is that it often makes up facts.¹⁵⁵ By design, the output might sound convincing, and may even be supported by citations to articles, but the underlying facts, as well as the supporting authorities, could be fabricated.¹⁵⁶ Indeed, in its “terms of use,” OpenAI indicates that the “use of our services may in some situations result in incorrect output that does not accurately reflect real people, places, or facts.”¹⁵⁷ Similarly, as noted above, the bot is designed in such a way that

¹⁵⁴ See *Fine-tuning*, OPENAI, <https://platform.openai.com/docs/guides/fine-tuning> [<https://perma.cc/7ZNT-YBU2>] (last visited Oct. 2, 2023); Marr, *supra* note 145; MCKINSEY & CO., *supra* note 4; Rana Ishaq, *How to Fine-Tune ChatGPT*, PC GUIDE (May 5, 2023), <https://www.pcguides.com/apps/how-to/how-to-fine-tune-chatgpt/> [<https://perma.cc/GKZ7-3BNT>]. When fine-tuning ChatGPT, “the model is trained on a smaller, task-specific dataset to improve its performance, . . . [which] allows the model to tailor its language generation capabilities to the specific needs of the chatbot.” See Subedi, *ChatGPT 101: Fine Tuning*, MEDIUM (Feb. 4, 2023), <https://subedi.medium.com/chatgpt-101-pre-training-56a98f04389> [<https://perma.cc/9CLD-CRWQ>]. One of my former students has fine tuned a GPT to field calls, summarize documents, and develop internal policies and external marketing materials. See Cedra Mayfield, “*It Can Be Trained on Case Law*”: *How a Lawyer is Using Generative AI Inspired by ChatGPT*, LAW.COM (May 11, 2023), <https://www.law.com/dailyreportonline/2023/05/11/it-can-be-trained-on-case-law-how-a-lawyer-is-using-generative-ai-inspired-by-chatgpt/> [<https://perma.cc/6MMP-TGUG>].

¹⁵⁵ See Choi et al., *supra* note 133, at 9; Metz, *supra* note 120. See also Matt Novak, *Lawyer Uses ChatGPT In Federal Court And It Goes Horribly Wrong*, FORBES (May 27, 2023, 6:11 PM), <https://www.forbes.com/sites/mattnovak/2023/05/27/lawyer-uses-chatgpt-in-federal-court-and-it-goes-horribly-wrong/?sh=166655e43494> [<https://perma.cc/XX7L-FL8S>].

¹⁵⁶ See John Burke, *Successful Generative AI Examples Worth Noting*, TECH TARGET (Apr. 19, 2023), <https://www.techtarget.com/searchenterpriseai/tip/Successful-generative-AI-examples-worth-noting> [<https://perma.cc/PGN4-H4NX>]; David Gewirtz, *How to Make ChatGPT Provide Sources and Citations*, ZDNET (May 12, 2023), <https://www.zdnet.com/article/how-to-make-chatgpt-provide-sources-and-citations/> [<https://perma.cc/HF4S-N9CE>] (recounting author’s experience that about half of the links provided by ChatGPT in response to prompts for URL sources were bad links); MCKINSEY & CO., *supra* note 4. As author Neil Gaiman notes, tools like AI provide “not information but information-shaped sentences”. See Burke, *supra* note 156. The chatbot also occasionally guesses about users’ intentions in unclear questions, rather than seeking clarification before responding. See *Introducing ChatGPT*, *supra* note 138.

¹⁵⁷ See *Terms of Use*, OPENAI (Mar. 14, 2023), <https://openai.com/policies/terms-of-use> [<https://perma.cc/7MAT-KSKZ>].

it may provide multiple different outputs when asked to perform the exact same task multiple times.¹⁵⁸ While one of the benefits of AI algorithms is supposed to be accuracy, critics of ChatGPT label it a “tool for misinformation.”¹⁵⁹ OpenAI, the creator of the bot, acknowledges that the model will provide “false negatives” and “false positives,”¹⁶⁰ but claims purport that the latest iteration is “40% more likely to produce factual responses” than earlier versions.¹⁶¹

In addition to those limitations, when the faculty at the University of Minnesota used ChatGPT to generate answers to its law school essay exams, the school concluded that it was not very effective at identifying issues on the exam or applying rules of law to the facts on the exam.¹⁶² The responses were especially weak when the exam questions required students to reason from specific cases, theories, or doctrines covered in the classes.¹⁶³ In many cases, the bot focused on topics and material that was not covered in the classes.¹⁶⁴ Those results should not be surprising, in light of the fact that ChatGPT was trained on a massive general purpose corpus and optimized for general purpose dialog, rather than fine-tuned to focus on the material covered in the specific classes.

ChatGPT suffers from a few other problems related to the corpus on which it was trained. First, since it was trained on a corpus that included a significant amount of material that included biased statements, ChatGPT frequently provides biased responses.¹⁶⁵ In addition, since it was trained on a corpus that included materials in existence through 2021, to the extent that users want ChatGPT to analyze material generated after 2021, they will need to input that material into the model.¹⁶⁶ As noted above, ChatGPT can be trained and fine-tuned, but that process requires expertise

¹⁵⁸ See *supra* note 137, and accompanying text.

¹⁵⁹ See Metz, *supra* note 120 (quoting Dr. Geoffrey Hinton, the “Godfather of A.I.”).

¹⁶⁰ See *Introducing ChatGPT*, *supra* note 138.

¹⁶¹ See *GPT-4 Launch*, *supra* note 132. When it released version 3.5, OpenAI similarly announced that the version included “substantial reductions in . . . untruthful outputs[.]” See *Introducing ChatGPT*, *supra* note 138.

¹⁶² See Choi et al., *supra* note 133, at 9–10.

¹⁶³ *Id.* at 5.

¹⁶⁴ *Id.* at 9–11.

¹⁶⁵ See *Introducing ChatGPT*, *supra* note 138; MCKINSEY & CO., *supra* note 4.

¹⁶⁶ See Scott Bordow, *ASU Professor’s Paper Examines Product’s Ability to Solve Math Word Problems*, ASU NEWS (Feb. 21, 2023), <https://news.asu.edu/20230221-discoveries-do-math-chatgpt-sometimes-cant-expert-says> [<https://perma.cc/P5J9-W6DE>]. However, in May 2023, OpenAI announced that it would upgrade the subscription version of ChatGPT to enable it to browse the web and access information created after 2021. See Terry Lane, *OpenAI to Update ChatGPT With Internet Access*, INVESTOPEDIA (May 17, 2023), <https://www.investopedia.com/openai-to-update-chatgpt-7499625> [<https://perma.cc/VY67-7UPX>].

as well as time and resources that may be beyond the reach of many users.¹⁶⁷

Armed with a background on the advantages and limitations of ChatGPT, we can now turn to the ways that it might be used by the public, organizations, and government agencies in the notice and comment rulemaking process.

V. POTENTIAL USE OF CHATGPT BY THE PUBLIC AND ORGANIZATIONS IN THE NOTICE AND COMMENT RULEMAKING PROCESS AND ATTENDANT CHALLENGES FOR AGENCIES

A. Drafting Comments

Perhaps the most obvious way that ChatGPT could potentially be used by the public or by interest groups would be as a tool to aid in the drafting of comments.¹⁶⁸ Members of the public could ask ChatGPT to

¹⁶⁷ See MCKINSEY & CO., *supra* note 4; CDO COUNCIL REPORT, *supra* note 95, at 38–39 (discussing the cost and resources needed to customize AI products, in general).

¹⁶⁸ See Bridget C. E. Dooling & Mark Febrizio, *Robotic Rulemaking*, BROOKINGS (Apr. 4, 2023), <https://www.brookings.edu/research/robotic-rulemaking/> [<https://perma.cc/T4WK-4USQ>]; Mark Febrizio, *Will ChatGPT Break Notice and Comment for Regulations?*, GEO. WASH. REGUL. STUD. CTR. (Jan. 13, 2023), <https://regulatorystudies.columbian.gwu.edu/will-chatgpt-break-notice-and-comment-regulations> [<https://perma.cc/R3ED-Q8LS>]; ACUS REPORT, *supra* note 19, at 12. After thousands of computer-generated comments were automatically submitted by bots to the F.C.C. on its net neutrality rulemaking, an ACUS report considered whether agencies would be required by the APA, which establishes a right for “interested persons” to comment on rules, to consider computer-generated comments. See ACUS REPORT, *supra* note 19, at 2, 39–40. The authors of the report concluded that (1) “persons” is defined broadly under the APA and is not limited to natural persons; and (2) humans are responsible for initially setting computer generated comments in motion. *Id.* Although the authors noted that the issue had not been addressed by any court, they noted that agencies generally review all comments, regardless of their origin, and that computer-generated comments are unlikely to raise issues that are not raised by other commenters. *Id.* Indeed, courts have interpreted the APA to require agencies to respond to all significant comments. See, e.g., *Del. Dep’t. Of Nat. Res. & Env’t Control v. EPA*, 785 F.3d 1, 15 (D.C. Cir. 2015); *Cement Kiln Recycling Coal. v. EPA*, 493 F.3d 207, 225–26 (D.C. Cir. 2007).

It should be noted, too, that the concerns raised in the ACUS report addressed comments that were automatically generated and submitted by computers with no human involvement after the initiation of the computer program to generate and submit comments. In the scenario described in this article, persons are merely using technology to assist in the drafting of comments. The commenters still review and may even edit the comments drafted by ChatGPT. This use of technology seems little different than what happens today, when commenters cut and paste language from interest group materials into comments and submit them or sign on to comments drafted by others. Nothing in the APA or any other law prohibits persons from getting

draft a comment in support of, or in opposition to, a proposed rule. If they had previously identified specific concerns that they had with the rule, they could prompt ChatGPT to include those concerns in the comment.¹⁶⁹ If they wanted to know more about the rule before prompting ChatGPT to draft the comment, they could ask ChatGPT for information about the rule, including its background, purposes, and implications, and any legal issues that arise in connection with the rule.¹⁷⁰ With that information in hand, they could provide more specific direction to ChatGPT to refine their comment.

Even if members of the public did not utilize ChatGPT to draft comments, interest groups could use it to assist them in their mass comment campaigns. Instead of simply providing supporters with form letters or talking points to use in submitting comments, the groups could prepare a wider variety of customizable comment letters, based on supporters' interests, or provide a web interface for supporters to facilitate their creation of "personalized" comments. Whereas most of the comments in public interest organizations' mass comment campaigns previously expressed broad values or sentiment,¹⁷¹ organizations could leverage the use of ChatGPT to help supporters draft comments that provide more of the local knowledge that agencies are seeking.

There are several advantages to using ChatGPT in this manner. First, it helps reduce some of the barriers that persons face to writing and submitting comments on proposed rules, so it should increase the number of persons participating in the commenting process, as well as the diversity of persons participating in the process.¹⁷² More importantly, perhaps, it

assistance in preparing comments on rules, *see* Febrizio, *supra*, at 3, so the use of ChatGPT to assist persons in drafting comments should not violate any laws.

¹⁶⁹ *See* Dooling & Febrizio, *supra* note 168; Febrizio, *supra* note 168 (describing his use of ChatGPT to draft comments objecting to, and supporting, a proposed Department of Labor rule on classifying independent contractors).

¹⁷⁰ When asked how ChatGPT might be used to assist in drafting comments on proposed rules, it responded that it could provide research assistance on the proposal, legal analysis of the proposal, language suggestions, and guidance on the structure and organization of the comment. *See* "Could ChatGPT be used to help draft comments on proposed rules?" *prompt*, ChatGPT 3.5, May 3 Version, OPENAI (May 18, 2023), chat.openai.com. Significantly, it also noted that ChatGPT "should not replace human judgment, legal expertise and careful review. It's crucial to have human review and input to ensure accuracy, coherence, and compliance with all relevant requirements and guidelines for submitting comments on proposed rules." *Id.*

¹⁷¹ *See* Potter, *supra* note 60.

¹⁷² Specifically, it might make it easier for members of the public to understand some highly technical rules or some aspects of those rules and might reduce, to a small degree, the information overload on commenters. *See supra* notes 56–58. In doing so, it might enable persons who could not participate in the process effectively in the past to submit comments. In addition, while it might reduce, to some extent, the resources that persons need to understand and participate in the commenting process,

will enable members of the public to draft comments that are clear, concise and well written.¹⁷³ Such substantive comments are generally more effective than poorly drafted comments. ChatGPT might also help members of the public learn more about the rules, so that they could include information in the comments addressing the manner in which the rules directly affect them. As mentioned, comments that provide localized knowledge and identify direct impacts, rather than identifying values and sentiments, are more valuable to agencies and can help generate better rules.¹⁷⁴

To test ChatGPT's comment drafting abilities, I asked it to draft a comment on the Environmental Protection Agency's ("EPA") 2015 rule that redefined "Waters of the United States" under the Clean Water Act from the viewpoint of a farmer who opposed the proposed rule.¹⁷⁵ Since effective comments tend to include data and technical information, I asked the bot to provide data, with citations to studies, to support the comment.

ChatGPT produced the following comment in response to my prompt:

I am writing to express my opposition to the rule defining "waters of the United States" under the Clean Water Act. In my view, this rule goes too far in expanding the EPA's jurisdiction over water resources, and it will have a negative impact on farmers, ranchers, and other landowners. Studies have estimated that the rule could cost farmers and other landowners as much as \$4.8 billion in compliance costs over the next decade. (Source: American Farm Bureau Federation. "Waters of the United States" Rule: What Farmers and Ranchers Need to Know. September 2015.) Another study by the National Cattlemen's Beef Association found that the rule could result in a 24% reduction in net farm income for cattle producers. (Source: National Cattlemen's Beef Association. Economic Analysis of "Waters of the United States" Rule. June 2015.)

it will still likely be easier for organizations and more affluent and highly educated members of the public to take advantage of ChatGPT as a drafting tool. Further, even if ChatGPT were to increase effective public input in the commenting stage of notice and comment rulemaking, it would not affect the disparity in participation in the development of rules that occurs before and after the comment stage. *See supra* note 53, and accompanying text.

¹⁷³ *See* Dooling & Febrizio, *supra* note 168; ACUS REPORT, *supra* note 19, at 12.

¹⁷⁴ *See supra* notes 26–33, and accompanying text.

¹⁷⁵ *See* Clean Water Rule, 80 Fed. Reg. 37054 (June 29, 2015).

The rule defines “waters of the United States” to include ephemeral streams, isolated wetlands, and other bodies of water that are not directly connected to navigable waters. This expansion of federal jurisdiction over these resources will impose unnecessary and burdensome regulatory requirements on landowners, making it more difficult for them to manage their land and operate their businesses, including agriculture. Farmers, in particular, will be negatively impacted by the increased regulatory scrutiny of their agricultural activities.

Farmers rely on the ability to manage their land in a way that maximizes productivity and minimizes costs. However, the potential costs associated with the 2015 rule could result in significant economic losses for farmers and rural communities, due to the increased regulatory burden and uncertainty. This could hinder the ability of farmers to produce affordable and abundant food for consumers, as well as negatively impact rural economies.

Moreover, the lack of clarity in the rule on what types of water resources are subject to federal regulation will lead to confusion and uncertainty among farmers. This could result in legal disputes and costly litigation, further undermining the ability of farmers to manage their land and operate their businesses.

In summary, I urge the EPA to reconsider the 2015 rule defining “waters of the United States” under the Clean Water Act. This rule is unnecessary and will impose significant regulatory burdens and costs on farmers and other landowners, without providing clear environmental benefits. Thank you for considering my comments.¹⁷⁶

The comment drafted by ChatGPT, in response to my prompt, correctly identified some major concerns raised by farmers in response to EPA’s 2015 rule. The output is also clear, concise, and well organized. In addition, it includes data and citations to two studies that support the data. Thus, on its face, ChatGPT appears to be quite effective in assisting the public in drafting comments on proposed rules.

¹⁷⁶ See “Can you draft a comment to EPA from a farmer indicating opposition to the rule that defined “Waters of the United States” under the Clean Water Act that was finalized in 2015, including data regarding the costs of the rule for farmers and citing studies to support the data?” prompt, ChatGPT 3.5, Mar. 23 Version, OPENAI, (May 1, 2023), chat.openai.com.

B. Limitations in the Effectiveness of ChatGPT to Assist in Drafting Comments

1. Time-Frame

There are, however, several important limits on the effectiveness of ChatGPT as a tool to assist persons in drafting comments on proposed rules.¹⁷⁷ One of the most significant limits is that ChatGPT was trained on a corpus of data that ended in 2021.¹⁷⁸ Rules proposed after that time, as well as the documentation supporting the rules, will not be accessible to ChatGPT *unless* ChatGPT is fine-tuned to incorporate the materials or users include all of the materials in the prompt to ChatGPT, which is obviously unworkable.¹⁷⁹ To the extent that the proposed rule amends or repeals an existing rule or addresses issues in prior rules, some information relevant to the proposed rule and supporting documents will have been included in the material on which ChatGPT was trained.

While this may be a limitation to the tool, it is not necessarily insurmountable. Although members of the public will not generally have the expertise, time, resources or inclination to fine-tune ChatGPT to facilitate the drafting of comments, interest groups with sufficient resources might conclude that it is beneficial to do the fine-tuning and training of ChatGPT on a proposed rule and its supporting documentation to create a tool that could be used in their mass comment campaigns.¹⁸⁰

¹⁷⁷ In addition to the limitations discussed in the following sections, ChatGPT may be of limited use to members of the public because they may not be aware that it could be used to draft comments on proposed rules or may not know how to use it to draft comments on proposed rules. That limitation could be minimized to some extent if organizations or the government utilized ChatGPT to educate members of the public about rules and how to use the bot to aid in drafting comments on rules, as noted above. *See infra* Parts V.A. and B.

¹⁷⁸ *See supra* note 167, and accompanying text.

¹⁷⁹ When I asked ChatGPT to draft a comment on an EPA rule as an experiment, I chose a rule that EPA finalized in 2015, since ChatGPT was trained on data from that timeframe. *See supra* Part IV.A.

¹⁸⁰ ChatGPT provides a “retrieval plugin” that developers can access to customize ChatGPT to search a defined data library. *See ChatGPT Plugins*, OPENAI (Mar. 23, 2023), <https://openai.com/blog/chatgpt-plugins> [<https://perma.cc/R87V-X7YH>]. An organization might enable users to use the retrieval plug-in to extend their normal ChatGPT session and search the proposed rule, supporting documentation, and any other materials that the organization felt were relevant to assist users in learning about the rule and drafting comments on the rule. *Id.* *See also ChatGPT Retrieval Plug-In*, GITHUB (Mar. 28, 2023), <https://github.com/openai/chatgpt-retrieval-plugin> [<https://perma.cc/N2PB-T7SV>] (last visited May 30, 2023). Technically, enabling user access to a retrieval plug-in is more limited than “fine-tuning” ChatGPT, but organizations could also “fine tune” ChatGPT on the additional data. *See Fine-tuning, supra* note 154 (describing the fine-tuning process).

However, it will not be feasible for organizations to devote the time and resources to do that for every rule, so this is a limited solution to the problem.

Government agencies could fine-tune ChatGPT and train it on proposed rules and the supporting documentation when they prepare to publish a proposed rule for comment as an alternative solution.¹⁸¹ This will further be addressed in Part V.¹⁸² Since the fine-tuning and training is time consuming and resource intensive, though, it will not be feasible for agencies to do this for every rule. Nevertheless, agencies might choose to do training for a category of rules, such as “significant” rules or “economically significant” rules.¹⁸³

There is another possible solution to this limitation, though. In May 2023, OpenAI announced that it was modifying the subscription version of ChatGPT to facilitate web access for the bot.¹⁸⁴ Since proposed rules and supporting documentation for rules are uploaded by agencies to Regulations.gov, much of that material should then be accessible to ChatGPT through that interface, and accessible to persons who are willing and financially able to subscribe to the service.¹⁸⁵ When users prompt ChatGPT using OpenAI’s new web extension, ChatGPT retrieves information from the web using the AI extension, Microsoft Bing.¹⁸⁶ Although the web extension allows ChatGPT to find data posted on the web after 2021 to aid in responding to users’ prompts, that is more limited

¹⁸¹ See *infra* Parts V.A. and B.

¹⁸² See *id.*

¹⁸³ A “significant regulatory action” means “any regulatory action that is likely to result in a rule that may: (1) Have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or (4) Raise novel legal or policy issues arising out of legal mandates, the President’s priorities, or the principles set forth in this Executive order.” See Exec. Order 12866, *supra* note 30, § 3(f). An “economically significant” rule is a “significant” rule that will have “an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities.” *Id.* § 3(f)(1).

¹⁸⁴ See *supra* note 167.

¹⁸⁵ At this time, though, OpenAI has merely provided an extension to ChatGPT that allows it to search the web for responses to prompts. See Reece Rogers, *I Finally Bought A ChatGPT Plus Subscription - And It’s Worth It*, WIRED (May 19, 2023, 7:00 AM), <https://www.wired.com/story/chatgpt-plus-web-browsing-openai/> [<https://perma.cc/339B-MCWK>] (describing the manner in which ChatGPT searches the web for responses to a prompt).

¹⁸⁶ See *ChatGPT Plugins*, *supra* note 180.

than “training” ChatGPT on all of the web data posted since 2021,¹⁸⁷ or the fine-tuning discussed above that organizations or the government could do in order to facilitate the use of ChatGPT in commenting on proposed rules.

2. False Information

Perhaps the most significant limitation to ChatGPT’s effectiveness to assist persons in drafting comments on proposed rules, though, is that the tool often generates false information.¹⁸⁸ For instance, when I asked it to draft the comment on EPA’s 2015 “Waters of the United States” rule, it generated a comment that cited studies by the American Farm Bureau Federation and the National Cattlemen’s Beef Association to support claims that compliance with the rule could cost farmers \$4.8 billion in the decade after the rule was implemented and that the rule could result in a 24% reduction in net income for cattle producers.¹⁸⁹ Although the comment sounded authoritative, neither the American Farm Bureau Federation, the National Cattlemen’s Beef Association, or any other organization produced reports with the titles provided by ChatGPT or produced any reports making the statistical claims reported by ChatGPT.¹⁹⁰ Indeed, no organization or person asserted in a comment to EPA during the rulemaking that the rule would have the effects claimed in the comment generated by ChatGPT, or cited any reports with the names generated by ChatGPT.¹⁹¹ As noted above, ChatGPT is notorious for simply fabricating information.¹⁹² The notice and comment process will not be improved and government agencies will not receive more useful information to make better decisions if persons use ChatGPT to submit false information in comments.

¹⁸⁷ See *supra* notes 139–44, and accompanying text (describing the process for training ChatGPT).

¹⁸⁸ See *supra* notes 156–62, and accompanying text.

¹⁸⁹ See *supra* note 177, and accompanying text.

¹⁹⁰ I searched Lexis, the web, and the websites of the American Farm Bureau Federation and the National Cattlemen’s Beef Association and found no evidence of any reports with the titles provided by ChatGPT or making the findings that ChatGPT indicated were made in the reports.

¹⁹¹ I searched the comment database for EPA’s rule in Regulations.gov and could not find any reference to the reports generated by ChatGPT or the findings asserted by ChatGPT in those reports. See *Definition of ‘Waters of the United States’ Under the Clean Water Act*, REGULATIONS.GOV: U.S. EPA RULEMAKING DOCKET, *accessible at*: <https://www.regulations.gov/docket/EPA-HQ-OW-2011-0880/comments> [<https://perma.cc/RKB3-RKKH>] (last visited May 30, 2023).

¹⁹² See *supra* notes 154–60, and accompanying text.

If organizations use ChatGPT to prepare customizable comment letters for supporters to submit to agencies,¹⁹³ presumably the organizations would be aware of ChatGPT's limitations and verify the accuracy of information that they provide to users to submit as comments.¹⁹⁴ Federal law prohibits knowingly or willfully making materially false, fictitious, or fraudulent statements to government agencies.¹⁹⁵ However, if organizations simply provided an interface to supporters to facilitate the creation of personalized comments or provided a tool that supporters could use to learn about rules,¹⁹⁶ the organization would not be knowingly or willfully making false statements to the government when supporters used such tools to prepare and submit comments. In addition, if a member of the public at large relied on those tools provided by an organization or if they used ChatGPT on their own to generate a comment on a proposed rule, they might not understand that data or facts generated in the comment were false, so a prohibition on knowingly or willfully submitting false information to government would not necessarily deter them from submitting a comment that included such misinformation.

There are a few steps that agencies could take to reduce the likelihood that persons using ChatGPT to generate comments might submit false information to the agency in comments. First, agencies could alert commenters more prominently, when they submit comments, that it is illegal to make a materially false, fictitious, or fraudulent statement in a comment. Currently, persons submitting comments through Regulations.gov are only alerted to the prohibition if they choose to click on the “terms of participation”¹⁹⁷ link on the page where they submit comments.¹⁹⁸ At a minimum, commenters could be *required* to click on

¹⁹³ See *supra* Part IV.A.

¹⁹⁴ The risk that persons and organizations may not be aware of ChatGPT's limitations and unknowingly submit false information presented as true is, however, still present. See Novak, *supra* note 155, at 27.

¹⁹⁵ See 18 U.S.C. § 1001 (2006). See also Steven J. Balla et al., *Responding to Mass, Computer-Generated, and Malattributed Comments*, 74 ADMIN. L. REV. 95, 130–32 (2022). This is, however, a limited deterrent, in that the prohibition only applies if the persons knowingly or willfully make false statements and if the statements are statements of material facts. See 18 U.S.C. § 1001 (2006).

¹⁹⁶ See *supra* Part IV.A.

¹⁹⁷ See *User Notice*, REGULATIONS.GOV, <https://www.regulations.gov/user-notice> [<https://perma.cc/N94Z-V7JU>] (last visited Oct. 2, 2023).

¹⁹⁸ See, e.g., Bureau of Land Management, *Conservation and Landscape Health, Comment Page for Proposed Rule*, REGULATIONS.GOV, <https://www.regulations.gov/document/BLM-2023-0001-0001> [<https://perma.cc/K374-ZLWV>] (last visited Oct 2, 2023). Commenters are also asked to confirm, through the reCAPTCHA system, that they are not “bots” that are automatically submitting comments. *Id.*; see also ACUS Recommendation 2021-1, *supra* note 19, at 4–5. A 2019 Senate report recommended the use of the technology

that link before submitting comments.¹⁹⁹ That alone, however, might not prevent commenters from submitting false information that they do not know is false. For that reason, it might be useful to ask commenters, when they submit a comment, (1) to indicate whether they used ChatGPT or any other generative AI tool to prepare their comment and (2) to verify that they have read and reviewed the comment and are affirming it as their own comment. Users could be informed that the use of ChatGPT or other generative AI products is appropriate, but that it will facilitate the government's review and processing of comments to know whether comments are prepared with ChatGPT. This would not eliminate the submission of false information, but it could flag the comments that might be more likely to contain potentially false information for the government's review.

3. Sentiment, Value and Preference Comments

Even if ChatGPT did not generate false information in response to users' prompts for assistance in drafting comments on proposed rules, it still might not be a very useful tool for creating effective public comments, because it is more likely to draft comments containing expressions of sentiment, preference and value than to draft the more effective comments that include data and studies or identify the unique way that proposed rules will impact individuals or groups of persons (i.e. situational or localized knowledge). It is unlikely to draft such comments for several reasons.

First, if members of the public use ChatGPT on their own to draft comments on proposed rules, individuals are unlikely to know what type of comments are more effective, even though agencies often specifically identify portions of proposed rules for which they are seeking more detailed input and even though agencies often provide guides to effective commenting.²⁰⁰ Most commenters are likely to simply ask ChatGPT to prepare a comment that indicates support or opposition to a proposed

after finding that the failure of agencies to use reCAPTCHA or a similar system “[left] the commenting process more vulnerable to abuse by malicious actors.” See Senate Committee Report, *supra* note 33, at 3–4. Professor Russell Weaver raises the concern, however, that authentication technology might exclude computer-generated or other comments that raise unique significant issues. See Weaver, *supra* note 19, at 569.

¹⁹⁹ Many websites require users to acknowledge that they have read the terms and conditions of use for the site before taking some action on the site. See Christine Hennel, “*Agree to Terms and Conditions*” *Checkbox Examples & How-to-Add Guide*, TERMLY (Sept. 14, 2021), termly.io/resources/articles/agree-to-terms-and-conditions-checkbox/ [https://perma.cc/E2ML-ZZVZ].

²⁰⁰ See *supra* notes 98–99 and accompanying text (noting that the quality of public comments has not changed significantly despite efforts to educate the public about “effective commenting”).

rule,²⁰¹ although some more sophisticated commenters might ask it to indicate support or opposition to a specific *portion* of a proposed rule. They also might even provide ChatGPT with a specific concern about that portion of the rule that they would like ChatGPT to address in the comment.²⁰² If organizations used ChatGPT in any of the ways described above to transform a mass comment campaign,²⁰³ the organizations could take further steps by assisting supporters to create comments and encourage commenters to include data, studies, or unique situational knowledge in comments if they have any to share. However, many supporters will not have that data or unique knowledge and will simply submit model comments provided by the organizations.²⁰⁴ If so, those comments will likely be expressions of values, sentiment, and preferences.²⁰⁵

There are other reasons why ChatGPT may not be useful in drafting effective comments for agencies. Even if users of ChatGPT, whether members of the public or organizations, recognize that comments including data and studies may be more effective and they prompt ChatGPT to draft a comment that includes data and citations to supporting studies for that data, there is no guarantee that the data itself will be accurate.²⁰⁶

In addition, it is unlikely that ChatGPT will generate comments that include the unique situational knowledge that agencies seek because of the way that ChatGPT generates content. An algorithm that anticipates what words will usually be used after other words based on public information on which it was trained prior to 2021 and supplemented by information that is accessible on the web through a browser extension is unlikely to

²⁰¹ See, e.g., Febrizio, *supra* note 168 (prompting ChatGPT to draft comments in support of, and in opposition to, a Department of Labor rule).

²⁰² See *supra* note 177 and accompanying text.

²⁰³ See *supra* Part IV.A. (discussing the possibility that organizations might draft customizable comment letters using ChatGPT for supporters to use or provide a web interface to facilitate supporters' use of ChatGPT to draft comments).

²⁰⁴ See Steven J. Balla et al., *Lost in the Flood? The Efficacy of Mass Comment Campaigns in Agency Rulemaking*, (Geo. Wash. Regul. Stud. Ctr., Working Paper, Oct. 2019), https://regulatorystudies.columbian.gwu.edu/sites/g/files/zaxdzs4751/files/download_s/WorkingPapers/GW%20Reg%20Studies%20-%20Lost%20in%20the%20Flood%20-%20SBalla%2C%20ABeck%2C%20EMeehan%2C%20APrasad.pdf [https://perma.cc/KZS6-R2MG] (outlining the normal process for mass comment campaigns).

²⁰⁵ See Potter, *supra* note 60.

²⁰⁶ See *supra* Part IV.B.2.

anticipate unique information that is not publicly available but is tied to a person's individual experiences.²⁰⁷

C. Challenges for Agencies Raised By the Use of ChatGPT to Assist in Drafting Comments

If members of the public or organizations used ChatGPT to meaningfully aid in drafting comments on proposed rules, it could create several challenges for agencies: (1) significantly increase the volume of comments that need to be analyzed independently by agencies; (2) increase the volume of comments that merely provide expressions of sentiment, values or preferences; and (3) increase the volume of comments that provide false information to agencies.

1. Increasing the Volume of Comments that Need to Be Analyzed Independently By Agencies

One of the major challenges agencies have faced in light of the transition to e-rulemaking has been the increase in the number of comments submitted on some high profile rulemakings.²⁰⁸ As noted above, technology has enabled persons (or bots) to submit thousands or even millions of comments on some rules.²⁰⁹ While agencies do not have to reply to each comment individually, they are required to consider and rationally respond to all of the significant comments raised during the comment period.²¹⁰ The rulemakings that attract significant numbers of comments are usually dominated by mass comment campaigns, where hundreds or thousands of persons submit identical or nearly identical comments prepared by the organizer of the campaign.²¹¹ If agencies can identify the comments that are identical or nearly identical, they can respond to all of those comments at once. Over time, many agencies have

²⁰⁷ ChatGPT does not “have access to personal information about individuals unless it has been shared with [ChatGPT] in the course of [its] conversation [with an individual].” See “*What am I thinking about?*” prompt, *ChatGPT 3.5, May 3 Version*, OPENAI (May 22, 2023), chat.openai.com. Professor Bridget Dooling and Mark Febrizio also raise the concern that ChatGPT might generate false “situational knowledge” by creating personal stories to include in comments in response to users’ prompts. See Dooling & Febrizio, *supra* note 168.

²⁰⁸ See *supra* notes 101–02 and accompanying text.

²⁰⁹ *Id.* Although the high volume of comments in some agency rulemakings has been caused, in part, by the automated submission of computer-generated comments by bots, this article does not focus on that issue. Indeed, in response to those abuses, agencies are using the reCAPTCHA system on Regulations.gov and other technological tools to minimize the automated submission of comments by bots. See Febrizio, *supra* note 168, at 3–4; Dooling & Febrizio, *supra* note 168.

²¹⁰ See *supra* notes 12–16 and accompanying text.

²¹¹ See *supra* note 103. See also ACUS REPORT, *supra* note 19, at 24.

developed or acquired fairly robust “de-duplication” software that analyzes comments submitted on a rule and groups identical or nearly identical comments together.²¹²

If members of the public and organizations utilize ChatGPT more frequently to aid in the drafting of comments, it could undermine the ability of agencies to identify similar comments using existing de-duplication software.²¹³ By using ChatGPT, commenters could make identical or nearly identical arguments using very different language.²¹⁴ As noted above, ChatGPT may often generate several different responses to the same prompt due to the randomness built into its algorithm.²¹⁵ It would not be apparent, on the face of comments, that they were generated using ChatGPT.²¹⁶ If it becomes more difficult for agencies to identify identical or nearly identical comments, they will have to spend significantly more time and resources analyzing and responding to comments, which will lead to delays in rulemaking.²¹⁷ In addition, as agencies must respond to more comments individually, it becomes more likely that agencies may fail to respond to a significant comment, in which case it becomes more likely that their rules may be challenged and invalidated.

At this point, it is not clear how agencies could efficiently respond to a significant increase in the volume of comments drafted using ChatGPT.²¹⁸ Software has already been developed that fairly accurately

²¹² See ACUS Recommendation 2021-1, *supra* note 19, at 5; ACUS REPORT, *supra* note 19, at 24–26. De-duplication software scans each comment and compares it to every other comment, identifying the degree of similarity between the comments. *See id.* at 24. Most agencies identify comments as identical or nearly identical if there is a 90% overlap between the words in the comments. *Id.* at 26. ACUS recommended that the General Service Administration’s e-Rulemaking Program should provide a common de-duplication tool for agencies. *See* ACUS Recommendation 2021-1, *supra* note 19, at 6. Today, most agencies use some de-duplication tool, and there is a tool built into the Federal Docket Management System. *See* ACUS REPORT, *supra* note 19, at 26.

²¹³ Even if comments are not drafted using ChatGPT, if commenters modify a model comment provided by an organization to change many of the words to synonyms, existing de-duplication software would not identify the comments as similar. *See* ACUS REPORT, *supra* note 19, at 25.

²¹⁴ *See supra* Part IV.A. *See also* Dooling & Febrizio, *supra* note 168; Febrizio, *supra* note 168, at 3 (noting ChatGPT’s assertion that it could “generate an almost limitless number of unique and distinct comments” on a proposed rule).

²¹⁵ *See supra* notes 137–38, and accompanying text.

²¹⁶ *See* ACUS REPORT, *supra* note 19, at 12; ACUS Recommendation 2021-1, *supra* note 19, at 3; Febrizio, *supra* note 168, at 3.

²¹⁷ *See supra* note 112.

²¹⁸ In 2021, ACUS recommended that agencies flag rulemaking comments that they identify as computer-generated or store them separately from other comments and note those actions on the docket for the rule. *See* ACUS Recommendation 2021-1, *supra* note 19, at 7. In the recommendation, ACUS was responding to the problem

predicts whether content has been generated using ChatGPT.²¹⁹ Thus, agencies could use that software to identify comments generated using ChatGPT. In addition, as noted above, they could also ask commenters, when submitting a comment, to identify whether the comment was drafted with the assistance of ChatGPT.²²⁰

In either case, it is not clear that the agency's job gets any easier because it can identify the comments that are generated with the assistance of ChatGPT. Agencies need to respond to all significant comments submitted on proposed rules, regardless of what level of support commenters receive in drafting comments.²²¹ While agencies would still

created by the automated creation and submission of comments by bots, rather than the creation of comments with the assistance of generative AI. *Id.* The report concluded that it was difficult to determine whether a comment was computer-generated simply by reading it, but that artificial intelligence tools could identify comments that expressed similar sentiments or were drafted in a manner that was likely to be computer-generated. ACUS REPORT, *supra* note 19, at 41–42. In addition, the report also concluded that it was possible to identify many of the computer-generated comments by the identity of the email addresses or the timing of submission of the comments. *Id.* at 42.

²¹⁹ See Emma Bowman, *A College Student Created an App that Can Tell Whether AI Wrote an Essay*, NPR (Jan. 9, 2023, 5:01 AM), <https://www.npr.org/2023/01/09/1147549845/gptzero-ai-chatgpt-edward-tian-plagiarism> [<https://perma.cc/E9K4-3NDH>]. Months after ChatGPT released version 3.5, Edward Tian, a Princeton University student, created an app, GPT Zero, to determine whether text is written by ChatGPT. *Id.* The app measures the complexity of the text and the “burstiness” of the text (variations of sentences). *Id.* If the text is highly complex and has greater burstiness, it is more likely to be written by a human. *Id.* More than 30,000 people tried GPT Zero in the first week it was released. *Id.* Shortly after Tian released his app, OpenAI released its own web-based tool designed to help persons determine whether text was generated using artificial intelligence. See Ina Friend, *OpenAI Releases Tool to Detect Machine-written Text*, AIOS (Jan. 31, 2023), <https://www.axios.com/2023/01/31/openai-chatgpt-detector-tool-machine-written-text> [<https://perma.cc/RM2B-XGWZ>]. OpenAI's tool ranks text on a five point scale of results: Very unlikely to have been AI-generated; Unlikely; Unclear; Possible; or Likely. *Id.*

²²⁰ See *supra* Part IV.B.2.

²²¹ See Febrizio, *supra* note 168; ACUS REPORT, *supra* note 19, at 43. Government agency staff surveyed for ACUS' 2021 report on abuses of the commenting process noted that the substance of comments matters, rather than the identity of the commenter or volume of comments, and that the generation of comments by computers is not “an important attribute of submissions.” See ACUS REPORT, *supra* note 19, at 43. When addressing a related issue of comments automatically created and submitted by bots, ACUS recommended that agencies identify, in the final rule, whether they relied on any comments that were computer-generated. See ACUS Recommendation 2021-1, *supra* note 19, at 7. ACUS also recommended that agencies identify whether they removed computer-generated comments from the docket for rules, although ACUS did *not* recommend that agencies should remove such comments. *Id.* ACUS' recommendation focused on identifying efficient and transparent ways to process mass comments, computer-generated

be required to respond to all comments that they identified as generated with the assistance of ChatGPT, agencies might decide that they need to use technologies other than the existing de-duplication software to process the comments generated with ChatGPT. To that end, agencies are experimenting with other AI tools to organize and group similar comments together and, when they are sufficiently developed, they could be deployed to efficiently identify similar comments, even if they were generated with the aid of ChatGPT.²²²

2. Increasing the Volume of Sentiment, Value and Preference Comments

If agencies were to receive significantly more comments that included scientific, economic, or technical data or situational or localized knowledge as persons used ChatGPT more frequently to draft comments, the increase in comments would provide agencies with useful information that could help them develop better rules. However, for the reasons identified above, a large percentage of the new comments that will be submitted through the assistance of ChatGPT are likely to merely express the sentiment, values, and preferences of commenters.²²³

On the one hand, it will be fairly easy for agencies to respond to comments that merely express sentiments, values, or preferences. After all, agencies are not required to consider individual preferences or the level of support or opposition to rules or certain included provisions when deciding how to finalize rules.²²⁴ The agencies can satisfy their legal obligation to respond to such comments by indicating that the agency thanks the commenter for their views and that the agency is choosing either to finalize the rule in a way that is consistent with those views or is inconsistent with those views.

Although it will be easy to author responses to such comments, as noted in Section IV.C.1, it may be difficult to identify which comments are identical or nearly identical, so that they can be addressed together.²²⁵ Thus, unless technological tools stronger than the current de-duplication tools can be developed to organize and synthesize comments, agencies will need to expend significant resources responding to the increased volume

comments and falsely attributed comments. *Id.* at 4. In the 2021 ACUS report on the abuses of the commenting process, government agency staff surveyed generally indicated that they would not exclude computer-generated comments simply because they were computer-generated. *See ACUS REPORT, supra* note 19, at 43.

²²² *See infra* Part V.C.

²²³ *See supra* note 206 and accompanying text.

²²⁴ *See supra* note 36. Even if they were, the level of support or opposition to a rule expressed in public comments is not necessarily an accurate representation of the true level of public support or opposition for the rule. *See supra* note 35.

²²⁵ *See supra* note 35.

of “unique” comments.²²⁶ Worse yet, the comments will provide very little useful substance to the agency to aid its rulemaking efforts.

Another concern exists with the increase in sentiment, values, and preference comments. To the extent that ChatGPT leads more people to get involved commenting on rules, there is an increased likelihood that newcomers to the process who do not realize that rulemaking is not a plebiscite will feel “disenfranchised” when agencies finalize rules in a way that appears to contradict a majority of the commenters.²²⁷ That sentiment could further diminish public confidence in agencies.²²⁸

3. Increasing the Volume of Comments That Provide False Information to Agencies

If members of the public and organizations increasingly use ChatGPT to aid in the creation of public comments, it is possible that there could be a significant increase in the number of comments submitted to agencies that contain false information. To some extent, that is likely to happen because members of the public may not be aware of the limitations of ChatGPT when they use it to develop comments.²²⁹ It might also happen because an individual purposefully asks ChatGPT to make up information that can be included in a comment or an organization uses it to create a broader disinformation campaign.²³⁰ This seems much more likely in light of the current climate of misinformation, culminating in events like January 6, 2021 and claims like “the big lie.”²³¹

An increase in the number of comments that provide false information to agencies would create much greater problems than an

²²⁶ See *supra* note 221.

²²⁷ See *supra* note 38.

²²⁸ *Id.*; see also ACUS REPORT, *supra* note 19, at 17.

²²⁹ See *supra* Part IV.B.2.

²³⁰ See Dooling & Febrizio, *supra* note 168. Commenters can submit false information in comments without using ChatGPT. *Id.* However, ChatGPT makes it easier to create false information and make it sound unique and authentic, so that the volume of commenters making the same false statements could increase and they may be making the statements in subtly different ways that evade quick categorization. See ACUS REPORT, *supra* note 19. A 2019 Senate Committee report recommended that Congress amend the E-Government Act of 2002 to clarify that agencies should not accept comments submitted under a false identity, abusive, profane or threatening comments, or irrelevant comments. See Senate Committee Report, *supra* note 33, at 3.

²³¹ See Tovia Smith, *Why is the ‘Big Lie’ Proving so Hard to Dispel?*, NPR (Jan. 4, 2022, 4:24 PM), <https://www.npr.org/2022/01/04/1070337968/why-is-the-big-lie-proving-so-hard-to-dispel> [<https://perma.cc/D8Z2-6ABD>]; Zachary B. Wolf, *The 5 Key Elements of Trump’s Big Lie and How it came to be*, CNN (May 19, 2021, 7:17 PM), <https://www.cnn.com/2021/05/19/politics/donald-trump-big-lie-explainer/index.html> [<https://perma.cc/3P9L-VLYP>].

increase in the number of comments that provide expressions of sentiment, values, and preferences. Overall, the information provided to agencies in the comment period would be far less reliable and agencies would have to work far harder to identify the accurate and useful information.²³² After all, comments generated with the aid of ChatGPT will sound authoritative and be hard to distinguish from other comments.²³³ In the best case scenario, agencies would need to devote significantly more time and resources to verify information provided to them in comments, but would acknowledge and respond to those comments rationally.²³⁴ In a less optimistic scenario, agencies will lack the time and resources to adequately verify all of the misinformation provided to them in comments and may rely on false information in developing final rules.²³⁵ In this scenario, the quality of agencies' rules will decrease and public confidence in agencies will decrease.²³⁶

In order to address the increased likelihood that comments generated with ChatGPT may contain false information, agencies may choose to utilize technology to identify which comments are created with the assistance of ChatGPT. In addition, agencies could ask commenters to identify whether they used ChatGPT to aid in creating their comments and to indicate that they have read and are affirming the comments they are submitting.²³⁷ Agencies could then review those comments more critically than other comments. In the past, agency officials have not been overly concerned about the likelihood that comments could include misinformation.²³⁸ As the authors of an Administrative Conference of the United States ("ACUS") report on abuses of the notice and comment process noted, the lack of concern could be due to the fact that agencies are repositories of significant expertise and because "broad participation is a prophylactic against misinformation," in that false submissions to agencies are often countered by several accurate submissions.²³⁹ Hopefully, agencies will be able to continue to rely on the wealth of expertise and the prophylactic nature of broad participation to identify

²³² See Dooling & Febrizio, *supra* note 168.

²³³ *Id.*

²³⁴ See *id.*

²³⁵ See ACUS REPORT, *supra* note 19, at 15. Critics also worry that mass comments that include misinformation could create confusion on legitimate issues and prompt agencies to ignore legitimate comments. *Id.* at 16.

²³⁶ *Id.* at 15–16.

²³⁷ See *supra* Part IV.B.2. Agencies could also require commenters to provide citations to studies or authorities to support factual assertions, to the extent that such sources are available.

²³⁸ See ACUS REPORT, *supra* note 19, at 15–16.

²³⁹ *Id.*

false information as more commenters rely on ChatGPT to aid in preparing comments.²⁴⁰

VI. POTENTIAL USE OF CHATGPT BY GOVERNMENT AGENCIES IN THE NOTICE AND COMMENT RULEMAKING PROCESS

While the use of ChatGPT by members of the public and organizations to aid in drafting comments may create some challenges for agencies, there are several ways that agencies might constructively use ChatGPT and other artificial intelligence tools in the notice and comment rulemaking process, including (1) educating the public about proposed rules and the information supporting the rules; (2) educating the public about the rulemaking process and how to prepare effective public comments; and (3) organizing and synthesizing comments received during the rulemaking process.

A. Use of ChatGPT to Educate the Public About Rules

As agencies have migrated rulemaking online, they have begun to take advantage of technology, social media, and the web to educate the public about proposed rules, the issues surrounding the rules, and the supporting documents for the rules.²⁴¹ ChatGPT could provide an additional educational tool for agencies. While ChatGPT has many limits, it is very effective in summarizing material and presenting factual information in a clear and organized format with few grammatical errors.²⁴² In addition, due to the randomizing manner in which it responds to prompts, it can generate a variety of ideas that facilitate creativity and brainstorming by users.²⁴³ In light of those strengths, agencies could use it to create “plain English” summaries of rules, portions of rules, issues arising in rules, and the documents supporting rules. They could also use it to create FAQ documents, infographics, or videos that provide similar information to potential commenters. Although ChatGPT tends to fabricate information, agencies could use it to generate the first draft of those educational materials and edit them to eliminate any inaccuracies generated by ChatGPT. Since ChatGPT will provide a variety of options for each type of document if prompted several times, agencies will be able to choose the best elements from all of the options to generate creative and

²⁴⁰ The authors of the ACUS report cautioned that “in the years ahead, it will be important to monitor whether the technologies that enable mass . . . comments threaten to undermine the . . . ability of agency officials to make sense of and consider comments thoughtfully.” *Id.* at 43.

²⁴¹ See *supra* notes 88–92 and accompanying text.

²⁴² See *supra* notes 146–47 and accompanying text.

²⁴³ See *supra* note 152.

informative educational materials. All of those documents could be provided to potential commenters on agencies' websites or through Regulations.gov.

Agencies might also use ChatGPT to create an interactive chatbot that could respond to user's questions about proposed rules, issues surrounding rules, and documents supporting rules. While members of the public already have opportunities to ask agency officials questions at public meetings or hearings, by phone, email, text, or chat, agencies may have limited resources to respond to all of those requests for information. A chatbot could supplement, rather than replace, those opportunities. Some members of the public may even prefer to direct their questions to a chatbot if they are able to get timely answers. However, an important caveat is that a ChatGPT chatbot could only be an effective educational tool if it provides accurate information in response to users' questions. In light of its propensity for fabricating information, ChatGPT might not be an optimal vehicle for responding to requests for information from the public. Before it could be used in that manner, agencies would need to spend a significant amount of time training the bot on proposed rules, the issues surrounding the rules, and supporting documentation for the rules.²⁴⁴ Agencies might also want to assign employees to monitor the accuracy of the responses that the chatbot provides.

If agencies use ChatGPT to educate the public about rules in these ways, it could open the process to broader and more diverse participation by reducing some of the barriers to citizen participation in the rule making process, such as information overload and the technical nature of rules.²⁴⁵ It could also improve the quality of comments provided to agencies, which could lead to better rules.²⁴⁶

There are some important limitations to the use of ChatGPT as an educational tool. First, as noted earlier, ChatGPT was only trained on information through 2021, although it has web access to material posted online after this time.²⁴⁷ Realistically, in order to utilize ChatGPT as an educational tool, agencies will need to fine tune it or train it on a universe of documents and information relevant to each rule for which the agencies plan to use it to create educational materials. In light of the time and resource demands associated with the training, agencies will need to limit

²⁴⁴ See *supra* notes 167–68 and accompanying text.

²⁴⁵ See *supra* notes 57–59, and accompanying text.

²⁴⁶ See *supra* note 92. As with other educational tools, agencies must be vigilant to ensure that they are using the tools to promote information gathering, as opposed to information contouring, which is cultivating the submission of information that supports an outcome desired by the agency. See Johnson, *#BetterRules*, *supra* note 15, at 1392–94.

²⁴⁷ See *supra* notes 167, 179.

their use of ChatGPT to a few high-profile rules.²⁴⁸ If agencies do not spend the time and resources necessary to fine-tune or train ChatGPT for more targeted use, some of the information generated will likely be inaccurate, especially if it is used to create a chatbot. Even though persons who rely on the inaccurate information will have limited recourse against the government, as estoppel against the government generally only lies where there is affirmative misconduct,²⁴⁹ the quality of information provided to the government will suffer if members of the public submit comments based on inaccurate information.²⁵⁰ In addition, public confidence in agencies will diminish if agencies routinely provide inaccurate information.²⁵¹

ChatGPT also may be of limited utility to agencies in preparing educational materials for persons with limited English proficiency. Although ChatGPT can support 95 languages,²⁵² it was trained on a corpus that primarily included English language materials, and it is not as effective in generating content in other languages.²⁵³ Thus, it may be less

²⁴⁸ Agencies may need to devote less time and resources to fine tune and train ChatGPT if they only plan to use it to create first drafts of educational materials that will be edited and refined by agency employees, as opposed to creating a chatbot to respond to user questions. If so, agencies may be able to use ChatGPT on a broader universe of rules. *See e.g.*, CDO COUNCIL REPORT, *supra* note 95.

²⁴⁹ *See Schweiker v. Hansen*, 450 U.S. 785, 788 (1981) (holding erroneous statement and neglect of Claims Manual by Social Security Administration field representative did not estop Secretary of Health and Human Services from denying retroactive benefits to respondent); *Fed. Crop Ins. Corp. v. Merrill*, 332 U.S. 380, 384 (1947) (finding Federal Crop Insurance Corporation [FCIC] not liable for farmer's loss, even though omission on application for insurance was fault of FCIC's agent, not farmer).

²⁵⁰ In addition, a challenger might be able to convince a court that an agency has acted arbitrarily and capriciously under the "hard look" application of the arbitrary and capricious standard when the agency forecloses consideration of relevant factors by providing inaccurate information to the public in support of a proposed rule. *See, e.g.*, *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29 (1983); *Citizens to Preserve Overton Park, Inc. v. Volpe*, 401 U.S. 402, 416 (1971) (describing application of the "hard look" analysis); *Connecticut Light and Power Co. v. Nuclear Regul. Comm'n*, 673 F.2d 525, 531 (D.C. Cir. 1982), *cert. denied*, 459 U.S. 835 (1982) (agency has a duty to disclose studies relied upon in preparing a rule); *United States v. Nova Scotia Food Prod. Corp.*, 568 F.2d 240, 251 (2d Cir. 1976) (if the failure of the agency to notify interested persons of the scientific research on which the agency was relying in proposing its rule prevented the submission of relevant comment, the agency may be held to have not considered all "the relevant factors").

²⁵¹ *See Johnson, Internet Changes Everything*, *supra* note 19, at 302.

²⁵² *See Alexander Christensen, How Many Languages Does ChatGPT Support?*, SEO.AI (Feb. 3, 2023), <https://seo.ai/blog/how-many-languages-does-chatgpt-support> [<https://perma.cc/D8CQ-TKEK>].

²⁵³ *See, e.g.*, Mohamed L. Seghier, *ChatGPT: Not All Languages are Equal*, NATURE (Mar. 7, 2023), <https://www.nature.com/articles/d41586-023-00680-3> [<https://perma.cc/G7N4-226Z>]; Viet Dac Lai et al., *ChatGPT Beyond English:*

effective when prompted by agencies to create educational materials in languages other than English. Since language barriers are a traditional impediment to public participation,²⁵⁴ use of ChatGPT to produce educational materials that are inaccessible to persons with limited English proficiency may further exacerbate inequalities in public participation.

B. Use of ChatGPT to Educate the Public About the Rulemaking Process and Effective Commenting

Agencies could also use ChatGPT as a tool to educate members of the public on the rulemaking process and the type of comments that are most effective in the process.²⁵⁵ They could create the same types of educational materials that they might create to educate members of the public about specific rules—summaries, FAQs, infographics, and videos—but targeted at the rulemaking process, rather than a specific rule.²⁵⁶ Since the guidance would apply generically to all rulemaking proceedings, the resource demands for creating the tools would be significantly less than those required to generate tools for multiple detailed and technical rules. In addition, the corpus of information on which ChatGPT would need to be trained or fine-tuned in order to generate the educational materials is much smaller than the corpus that would be required for any individual rule. Since the corpus is so small, it may even be feasible to create a chatbot that provides accurate advice to persons about the types of information to put in comments and the manner in which to structure comments. These resources could be made available on Regulations.gov, so persons could access them for any rule on which they wanted to comment.

Towards a Comprehensive Evaluation of Large Language Models in Multilingual Learning, RESEARCHGATE (Apr. 12, 2023), <https://www.researchgate.net/publication/369974979> [https://perma.cc/Z8H4-CMR9]; Devin Coldeway, *Why ChatGPT Lies More in Some Languages Than in Others*, TECHCRUNCH (Apr. 26, 2023, 3:50 PM), <https://techcrunch.com/2023/04/26/why-chatgpt-lies-in-some-languages-more-than-others/> [https://perma.cc/VAK9-UPMZ].

²⁵⁴ See, e.g., Peter L. Reich, *Greening the Ghetto: A Theory of Environmental Race Discrimination*, 41 KAN. L. REV. 272 (1992).

²⁵⁵ See *supra* notes 88–92 and accompanying text.

²⁵⁶ In 2021, ACUS recommended that agencies “should consider providing publicly available materials that explain to prospective commenters what types of responses they anticipate would be most useful.” See ACUS Recommendation 2021-1, *supra* note 19, at 8. ACUS suggested that “[t]hese materials could be presented in various formats—such as videos or FAQs—to reach different audiences.” *Id.* Further, ACUS recommended that the agency materials could include statements “to explain the purpose of the comment period and explain that agencies seriously consider any relevant public comment from a person or organization.” *Id.*

Generative AI tools other than ChatGPT could also be used to educate the public about rulemaking and rules in order to increase public participation in the process. For instance, the authors of a 2021 report to the ACUS suggested that artificial intelligence tools might be used to identify rules that an individual might have an interest in, based on their social media posts, internet search history, purchasing history, and other data.²⁵⁷ The individual could then be alerted that an agency had published a proposed rule on a topic that appeared to be of interest to them and the individual could be directed to the website for the rule.²⁵⁸ The authors recognized that the use of technology in that manner would raise important privacy, operational and other issues, but suggested that it could help overcome some of the collective action problems that inhibit public participation in rulemaking.²⁵⁹

C. Use of Artificial Intelligence Other Than ChatGPT to Organize and Synthesize Comments

Since more than a million comments have been submitted in a few rulemaking proceedings in the e-rulemaking era, it has become increasingly important for agencies to utilize technology to sort and categorize the comments for review and response.²⁶⁰ Although agencies have not utilized ChatGPT for that purpose, they are examining and utilizing other AI tools to assist in that process.²⁶¹ If they work effectively, the tools could decrease the time and staff resources required to review and respond to comments, saving agencies money and reducing the time

²⁵⁷ See ACUS REPORT, *supra* note 19, at 12–13. See also Bridget C.E. Dooling & Michael Livermore, *Bot-Generated Comments on Government Proposals Could Be Useful Someday*, SLATE (June 21, 2021, 11:00 AM), <https://slate.com/technology/2021/06/bot-generated-comments-on-regulatory-proposals-could-be-useful.html> [<https://perma.cc/24K4-88GY>].

²⁵⁸ See ACUS REPORT, *supra* note 19, at 12–13; Dooling & Livermore, *supra* note 257. For instance, Professor Bridget Dooling imagines a scenario where a person who enjoys birding in national parks and posts photos of birds to social media with geotags is alerted to a proposed rule that would limit hours at the park where the person regularly birds. See Dooling & Livermore, *supra* note 257. That person might submit a comment addressing the value of being able to observe specific birds at a specific time that the agency was not aware of. *Id.* That is an example of the situational or localized knowledge that agencies often seek, but rarely find, in public comments.

²⁵⁹ See ACUS REPORT, *supra* note 19, at 12–13. See also Dooling & Livermore, *supra* note 257. In a separate article, one of the authors of the ACUS report, Bridget Dooling, addressed the privacy concerns to some extent by suggesting that users could affirmatively choose to opt-in to the system that would identify rules for you. See *id.*

²⁶⁰ See ACUS REPORT, *supra* note 19, at 6, 44; GOVERNMENT BY ALGORITHM, *supra* note 95, at 59; CDO COUNCIL REPORT, *supra* note 95.

²⁶¹ See GOVERNMENT BY ALGORITHM, *supra* note 95, at 60; CDO COUNCIL REPORT, *supra* note 95, at 8 (identifying efforts of USDA and EPA).

needed to finalize rules.²⁶² However, if they don't work effectively, or if agencies attempt to rely on them without involving humans to double-check them,²⁶³ agencies may fail to identify and respond to significant comments, increasing the risk that their rules will later be invalidated in court.²⁶⁴

There are several types of AI tools being developed or refined that show promise for reviewing and organizing rulemaking comments, including topic modeling, semantic similarity analysis, and sentiment analysis.

Topic modeling is a form of natural language processing that analyzes text in a corpus of documents, identifies patterns, generates a list of topics, and characterizes each document in the corpus within those topic categories.²⁶⁵ Ideally it could group comments that raise similar issues together, so that agency staff could review them together, consider the views expressed in them holistically, and respond to them collectively or individually.²⁶⁶

Semantic similarity analysis achieves the same goal as traditional de-duplication analysis but is more sophisticated. This natural language processing tool can analyze text in a corpus of documents and group together documents that are either identical or semantically similar, in that a document may paraphrase language in another document or replace language in a document with synonyms.²⁶⁷ By grouping the identical or semantically similar documents together, agency staff can review the documents simultaneously and respond to them collectively.²⁶⁸

²⁶² See ACUS REPORT, *supra* note 19, at 44; *GOVERNMENT BY ALGORITHM*, *supra* note 95, at 60; CDO COUNCIL REPORT, *supra* note 95, at 1; Mortazavi, *supra* note 20, at 202, 207.

²⁶³ The authors of the 2021 report to ACUS on abuses in commenting stressed the importance of human oversight of natural language processing models. See ACUS REPORT, *supra* note 19, at 46.

²⁶⁴ See Mortazavi, *supra* note 20, at 208–09. Some critics also suggest that it may be inappropriate for agencies to delegate the analysis of comments in any way, whether by contracting with third parties to assist in organizing the comments for review, or by utilizing artificial intelligence to accomplish the same task. See Dooling & Febrizio, *supra* note 168.

²⁶⁵ See ACUS REPORT, *supra* note 19, at 45; CDO COUNCIL REPORT, *supra* note 95, at 6. Prior to the evolution of natural language processing, some academics experimented with “relatedness analysis” as a tool to categorize public comments in rulemaking based on the section of the rule to which the comments applied. See Gloria T. Lau, Kincho H. Law, & Gio Wiederhold, *A Relatedness Analysis Tool for Comparing Drafted Regulations and Associated Public Comments*, 1 I/S: J.L. & POL'Y FOR INFO. SOC'Y 95 (Winter 2004/2005).

²⁶⁶ See CDO COUNCIL REPORT, *supra* note 95, at 6–7; Dooling & Febrizio, *supra* note 168.

²⁶⁷ See CDO COUNCIL REPORT, *supra* note 95, at 1, 6.

²⁶⁸ See *id.* at 1.

Sentiment analysis, another natural language processing tool, identifies the positive or negative sentiment expressed in a corpus of documents and categorizes the documents based on those sentiments.²⁶⁹ Although use of this tool can provide agencies with a sense of public support or opposition to rules, agencies do not need to consider the level of support or opposition to rules when finalizing them, although they may be interested in knowing the level of support for other reasons.²⁷⁰

While the authors of a 2020 report to the ACUS concluded that these tools were still in “the prototype stage,”²⁷¹ a year later, the Federal Chief Data Officer Council (“CDO Council”) identified existing topic modeling and semantic similarity tools that it felt could be used by federal government agencies to improve their comment analysis process.²⁷² The CDO Council estimated that the topic modeling tool it identified could save agencies eighty hours of work for every 1000 comments reviewed, while the semantic similarity tool could save them forty-five hours for every 1000 comments.²⁷³

In addition, a tool like ChatGPT might be used to prepare an initial summary of comments on a proposed rule or an agency’s responses to comments that could be edited for inclusion in the preamble for the final rule.²⁷⁴ Although agencies have not relied heavily on these tools to analyze

²⁶⁹ See *GOVERNMENT BY ALGORITHM*, *supra* note 95, at 60–61; Mortazavi, *supra* note 20, at 208. Critics note, though, that many comments include expressions of both positive and negative sentiment or perhaps neither sentiment. See *id.*; *GOVERNMENT BY ALGORITHM*, *supra* note 95, at 60.

²⁷⁰ See *supra* notes 34–41 and accompanying text.

²⁷¹ See *GOVERNMENT BY ALGORITHM*, *supra* note 95, at 60.

²⁷² See CDO COUNCIL REPORT, *supra* note 95, at 1. The CDO Council reached that conclusion based on a pilot project that it conducted with 7 federal agencies that examined the use of various natural language processing models to review rulemaking comments. *Id.* at 12. The models were fine-tuned and use on a sample of around 500 comments for each rule from the various agencies. *Id.* at 2. The CDO Council identified the “Big Bird” semantic similarity model and the Hierarchical Latent Dirichlet Allocation (HDLA) model for topic modeling as the open-source, state of the art models that could be used by agencies “as is” or customized further. *Id.* at 1. Although the GSA had concluded, in 2020, that natural language processing models were not mature enough to be used in analyzing public comments, the Council noted that several of the models that it examined in the pilot project were not in existence at the time that the GSA reached its conclusion. *Id.* at 10.

²⁷³ *Id.* at 1.

²⁷⁴ See Dooling & Febrizio, *supra* note 168. In response to a question from the author, ChatGPT claimed that it could also assist in analyzing comments in notice and comment rulemaking by using sentiment analysis, topic modeling and text classification “to identify the main themes and arguments presented in the comments, as well as the overall sentiment expressed by the commenters.” See “*Can ChatGPT help to analyze public comments submitted in the notice and comment rulemaking process?*” *prompt*, ChatGPT 3.5, Mar. 23 Version, OPENAI (Apr. 16, 2023), chat.openai.com.

and process comments yet, they may gain popularity in the future if the tools become more sophisticated and agencies are faced with increasing numbers of rulemaking proceedings that generate unmanageable numbers of comments.

VII. CONCLUSION

Technological innovations since the turn of the century have created opportunities to increase public participation in notice and comment rulemaking, increase the efficiency of the process, and increase the quality of the rules adopted by agencies. For some rules, online rulemaking, social media, and Web2.0 tools have facilitated increased public participation but have not necessarily facilitated improvements in the *quality* of public participation or the quality of those rules. In addition, the unprecedented volume of comments submitted on some rules has created challenges for agencies, reducing the efficiency of the process and delaying the publication of final rules.

AI and ChatGPT are the latest tech trends to create opportunities to transform notice and comment rulemaking. If ChatGPT is only used by members of the public and organizations as a tool to draft comments, it is unlikely to improve the quality of public comments or the quality of rules. Additionally, these tools could create challenges for agencies by flooding agencies with significantly greater numbers of comments, most of which merely express sentiment, values, or preferences, and many of which may include false information.

There is, however, an alternative path forward for ChatGPT and AI in notice and comment rulemaking. If agencies use ChatGPT to help members of the public understand proposed rules, the issues surrounding the rules, the information supporting the rules, the rulemaking process and the types of comments that are effective, agencies may receive more useful comments from the public, which can provide agencies with better information to consider in finalizing rules. In addition, agencies may be able to use other AI tools to make it easier for them to process comments and to notify members of the public about proposed rules that might be of interest to them. Embracing this alternative use of AI and ChatGPT could *generate* some of the gains in public participation that other technological tools have promised but have yet to deliver.