NORTH CAROLINA JOURNAL OF LAW & TECHNOLOGY
VOLUME 24, ISSUE 4: MAY 2023

EMERGING TECHNOLOGY GOVERNANCE IN THE SHADOW OF THE MAJOR QUESTIONS DOCTRINE

Jonas J. Monast [*]

OpenAI, an artificial intelligence ("AI") developer, captured the attention of technology companies, consumers, and policymakers when it released an updated version of its AI-enabled chatbot ChatGPT in December 2022. Weeks after the release, a Member of Congress introduced a non-binding resolution calling for a nimble and flexible government agency to oversee AI development to manage risks and ensure that benefits of AI are widely distributed.

AI raises many governance challenges that are common with emerging technologies. For example, AI is evolving rapidly and few policymakers understand the technology and its potential impacts. Stringent regulation during the technology's development may limit potential benefits, yet delaying government action may result in significant, and potentially irreversible, social and economic impacts.

This Article examines the conflicts between the type of flexible statutory authority required to govern an emerging technology like AI and the Major Questions Doctrine ("MQD")—a poorly defined and potentially boundless tool for a skeptical court to overturn agency actions. The Article begins with a summary of the challenges with emerging technology governance. Next, the Article describes the evolution of the MQD and explains how the doctrine frustrates efforts to govern emerging technologies. The Article concludes with

[*] Associate Professor and C. Boyden Gray Distinguished Fellow at UNC School of Law. I am grateful for Professor J.B. Ruhl's collaboration on a related MQD project, as well as valuable feedback from my colleagues at the University of North Carolina School of Law, participants in the Online Workshop for Environmental Scholarship, and Professor Bill Buzhee and the students in the 2022 Georgetown Law Environmental Research Workshop. I am particularly grateful for the tireless work of Lauren Corey, Jared Mark, Sarah Cheeley, Ellenor Brown, and the entire NC JOLT editing team.

reflections about emerging technology governance following the Supreme Court's decision in West Virginia v. EPA.

TABLE OF CONTENTS

I. INTRODUCTION

OpenAI, an artificial intelligence ("AI") developer, earned headlines across the world with an update to its AI chatbot, ChatGPT, in December 2022.[1] The remarkable advancements in AI capabilities captured the attention of technology companies, consumers, and lawmakers alike.[2] The following month,

[1] *ChatGPT—Release Notes*, OPENAI, https://help.openai.com/en/articles/6825453-chatgpt-release-notes [https://perma.cc/RAX9-QV9C] (last visited Mar. 18, 2023) (OpenAI released an updated version of ChatGPT while this article was in the editing process).

[2] *See, e.g.*, Mark Wilson, *ChatGPT Explained: Everything You Need to Know About the AI Chatbot*, TECHRADAR, https://www.techradar.com/news/chatgpt-explained [https://perma.cc/4SUZ-39R7] (last updated Mar. 15, 2023) (claiming that ChatGPT "has sparked an AI arms race"). *See also* Dan Milmo, *ChatGPT Reaches 100 Million Users Two Months After Launch*, GUARDIAN (Feb. 2, 2023), https://www.theguardian.com/technology/2023/feb/02/chatgpt-100-million-users-open-ai-fastest-growing-app [https://perma.cc/6WX7-CBN9] ("Unprecedented take-up may make AI chatbot the fastest-growing consumer internet app ever,

Congressman Ted Lieu introduced a congressional resolution calling for regulation of artificial intelligence.[3] Congressman Lieu's proposed resolution is noteworthy because it was drafted by ChatGPT and is the first legislation drafted by an AI to be introduced in Congress.[4] It also highlights the complex governance challenges presented by AI and other emerging technologies.[5]

AI is so new that few lawmakers, and few people generally, understand how it works, much less the many ways that the technology could affect society. The technology is increasingly prevalent in the economy and is poised to quickly become embedded throughout the economy. Predictions about future advances in AI range from tremendous social and economic benefits to a dystopian future with Terminator-like autonomous robots patrolling the streets.[6]

Congressman Lieu calls on his colleagues in Congress to act early with a law that "ensure[s] the development and deployment of AI is done is a way that is safe, ethical, and respects the rights and privacy of Americans, [and] ensure[s] that the benefits of AI are widely distributed and that the risks are minimized."[7] To achieve

---

analysts say."); Samantha Murphy Kelly, *ChatGPT Passes Exams from Law and Business Schools*, CNN (Jan. 26, 2023), https://www.cnn.com/2023/01/26/tech/chatgpt-passes-exams/index.html [https://perma.cc/BV9M-2SM2] (reporting on experiments applying ChatGPT to generate exam answers).

[3] Expressing Support for Congress to Focus on Artificial Intelligence, H.R. Res. 66, 118th Cong. (2023).

[4] Press Release, Ted Lieu, Representative, House of Representatives, Rep Lieu Introduces First Federal Legislation Ever Written by Artificial Intelligence (Jan. 26, 2023), https://lieu.house.gov/media-center/press-releases/rep-lieu-introduces-first-federal-legislation-ever-written-artificial [https://perma.cc/PR7Y-UUJV].

[5] Ted Lieu, *I'm a Congressman Who Codes. A.I. Freaks Me Out*, N.Y. TIMES (Jan. 23. 2023), https://www.nytimes.com/2023/01/23/opinion/ted-lieu-ai-chatgpt-congress.html [https://perma.cc/6ASY-QNLY].

[6] According to the resolution, AI "has the potential to greatly improve the lives of Americans and people around the world, by increasing productivity, improving health care, and helping to solve some of the world's most pressing problems." H.R. Res. 66, *supra* note 3. The first paragraph of Congressman Lieu's op-ed, also drafted by ChatGPT, warns that AI could lead to "autonomous weapons roam[ing] the streets[,] . . . perpetuat[ing] societal biases and . . . [causing] devastating cyberattacks." Lieu, *supra* note 5.

[7] H.R. Res. 66, *supra* note 3.

this balancing act, the congressman calls for a new agency that is nimble and has the flexibility to "reverse its decisions if it makes an error."[8] He points to the Food and Drug Administration ("FDA") as the type of flexible agency that can respond to complex and evolving circumstances, but federal agencies' ability to respond effectively to new challenges is under threat due to the recent prominence of the Major Questions Doctrine ("MQD") in Supreme Court decisions.[9]

Under the MQD, courts "expect Congress to speak clearly when authorizing an agency to exercise powers of 'vast economic and political significance.'"[10] As this quote demonstrates, courts applying the MQD do not focus solely on the statutory language. Instead, an agency may enjoy more or less discretion depending on a court's subjective interpretation of the economic and political significance of the regulation at hand. This doctrine, which appeared in only a handful of Supreme Court decisions prior to the Court's 2021–22 term, became a frequent tool for overturning agency actions after Justice Coney Barrett's confirmation gave the conservative justices a six-vote majority.[11]

This Article considers the MQD's impact on lawmakers' ability to design an adaptive governance regime nimble enough to manage risks as technologies evolve. The Article begins with a summary of two common challenges with emerging technology governance: designing governance regimes that are flexible enough to keep pace with changing technologies and ensuring that government agencies revise regulations to achieve statutory goals. Next, the Article describes the evolution of the MQD and explains how the doctrine frustrates efforts to govern emerging technologies. In particular, this Article identifies four issues that could undermine agency effectiveness: applying different standards of scrutiny based on a court's subjective assessment of the political and economic impacts of a regulation; limiting an agency's authority if a regulation has impacts beyond the agency's traditional domain; interpreting statutes more narrowly when a statute is old or when Congress has

---

[8] Lieu, *supra* note 5.
[9] *Id.*
[10] Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 324 (2014).
[11] *Infra* Part III.B.

subsequently debated, but not adopted, new provisions; and arbitrarily evaluating statutory context. The Article concludes with reflections about emerging technology governance under the MQD.

II. EMERGING TECHNOLOGY GOVERNANCE CHALLENGES

Rapidly evolving technologies pose many widely-recognized challenges for lawmakers.[12] There is generally a lag time between deployment of the technology and development of a robust understanding of their social, economic, public health, or ecological impacts, preventing lawmakers from making informed assessments of the risks presented by a new technology.[13] In the meantime, laws designed during a previous technological era apply to the new technologies, in some cases in perpetuity and in others until policymakers develop a better understanding of the technology's impacts.[14]

Lawmakers may be reluctant to act too soon and potentially limit the economic, social, or public health benefits of a new technology.[15]

---

[12] Lyria Bennett Moses, *Recurring Dilemmas: The Law's Race to Keep Up with Technological Change*, U. ILL. J.L. TECH. & POL'Y 239, 261–78 (2007).

[13] *See* Diana M. Bowman, *The Hare and the Tortoise: An Australian Perspective on Regulating New Technologies and Their Products and Processes*, INNOVATIVE GOVERNANCE MODELS FOR EMERGING TECHNOLOGIES 155–75 (Gary E. Marchant et al. eds., 2013); *see also* Gregory N. Mandel, *Regulating Emerging Technologies*, 1 L., INNOVATION, & TECH. 75 (2009) ("Historically, regulation has evolved reactively around relatively mature industries. Most regulation has proven remarkably unyielding to evolution, even in the face of recognition of its limits and flaws.").

[14] *See, e.g.,* PRESIDENTIAL COMM'N FOR THE STUDY OF BIOETHICAL ISSUES, NEW DIRECTIONS: THE ETHICS OF SYNTHETIC BIOLOGY AND EMERGING TECHNOLOGIES 80–102, 125–27 (Dec. 2010), https://bioethicsarchive.georgetown.edu/pcsbi/sites/default/files/PCSBI-Synthetic-Biology-Report-12.16.10_0.pdf [https://perma.cc/M9RK-GP26] (summarizing the existing legal framework for advances in synthetic biology and recommending new oversight measures).

[15] Gary E. Marchant et al., *What Does the History of Technology Regulation Teach Us About Nano Oversight?*, 37 J. L., MED. & ETHICS 724, 725–26 (2009). MIT professor Kenneth Oye describes this challenge in a discussion about synthetic biology: "On the one hand, synthetic biology has designed organisms to synthesize drugs and fuels, to detect and break down toxics, and to fix carbon for sequestration. On the other hand, these applications pose environmental risks associated with release of synthetic organisms. The standardization and

Conversely, delaying action may cause harm if existing laws cannot adequately address the risks posed by the new technology. Depending on the pace of change, a technology's evolution may exceed an agency's ability to adjust its approach even when there is statutory authority to update regulations to address new circumstances.[16]

Further complicating governance of emerging technologies, the legislative process is slow and, once enacted, major statutes tend to remain in place for decades without substantial revisions or updates.[17] Even when there are existing statutes that apply to an

---

modularization that are distinguishing features of synthetic biology also have dual implications. By lowering costs and skill levels required to practice biological engineering, synthetic biology may allow developing countries and small firms to derive greater benefit from synthetic biology than is typical for advanced emerging technologies. However, by lowering costs, reducing barriers to entry, and encouraging mass use, modularization and standardization may amplify any negative environmental and security externalities associated with this technology. Benefits and risks attributed to synthetic biology are typically two faces of the same coin." Kenneth A. Oye, *Proactive and Adaptive Governance of Emerging Risk: The Case of DNA Synthesis and Synthetic Biology*, MASS. INST. TECH. (June 2012), https://irgc.org/wp-content/uploads/2018/09/FINAL_Synthetic-Biology-case_K-Oye_2013.pdf [https://perma.cc/MM2X-X6TX].

[16] Daniel Gervais, *The Regulation of Inchoate Technologies*, 47 HOUS. L. REV. 665, 683 (2010).

[17] *See, e.g.,* Gary E. Marchant, *The Growing Gap Between Emerging Technologies and the Law*, *in* THE GROWING GAP BETWEEN EMERGING TECHNOLOGIES & LEGAL-ETHICAL OVERSIGHT: THE PACING PROBLEM 19, 23 (Gary E. Marchant et al. eds., 2011); Gary E. Marchant, *The Problems with Forbidding Science*, NAT'L LIBR. MED. (Apr. 7, 2007), https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7088679/ [https://perma.cc/UQ4P-NJH2] ("Once Congress has acted on an issue during the window of opportunity, it may be years or even decades before it revisits the issue, creating the risk of outdated legislation that remains in effect simply as a reflection of legislative inertia."); Marchant et al., *supra* note 15, at 726 ("For most issues, there is little chance of laws being updated except during infrequent policy 'windows' in which circumstances align to bring the issue to a brief moment of congressional action. Once Congress has acted, it may be years or even decades before the issue is revisited by Congress."); *see also* David Rejeski, *The Next Small Thing*, ENV'T F. (Mar. 2004) (asserting that the pace of "rapid improvements in products, processes, and organization" exceed the ability of existing regulatory frameworks to keep pace). Even when changes in technology are anticipated, technology neutral language may not be sufficient to ensure that

emerging technology, federal agencies may not have the proper incentives to use those authorities to address a technological advancement, particularly if an effective response calls for a new interpretation of an existing statute.[18] The theory of regulatory ossification suggests that the combination of the judicial "hard look doctrine" and the increasing obligations Congress places on agencies have caused the rulemaking process to become "increasingly rigid and burdensome."[19] Ossification, or "rulemaking ruts," may be even more prevalent when agencies consider updating existing regulations.[20]

The long-term effectiveness of a law intended to address emerging issues like AI, therefore, will often depend on its ability to simultaneously require an administrative agency to act and allow the agency to alter its application of the law over time. This process, which is consistent with Congressman Lieu's call for an agency that can reverse course, can allow a law to evolve over time by responding to new circumstances in a manner that most effectively achieves the statute's underlying goals.

III. THE EVOLUTION OF THE MAJOR QUESTIONS DOCTRINE

If Congressman Lieu and his colleagues successfully launch a nimble agency to oversee AI, agency leaders would very likely find themselves asking how they can achieve the mission Congress assigned them without running afoul of the MQD. The Supreme Court recently considered three cases testing federal agencies' ability to respond to complex and controversial issues that cut across

---

a statute or regulation remains effective in the face of technological change. Moses, *supra* note 12, at 239 ("Technology-neutral drafting might ensure proper treatment of existing technologies. However, it will not always be effective in a changing technological environment.").

[18] Lynn E. Blais & Wendy E. Wagner, *Emerging Science, Adaptive Regulation, and the Problem of Rulemaking Ruts*, 86 TEX. L. REV. 1701, 1703 (2008).

[19] Thomas O. McGarity, *Some Thoughts on "Deossifying" the Rulemaking Process*, 41 DUKE L.J. 1385, 1385 (1992).

[20] Blais & Wagner, *supra* note 18, at 1704 (finding that "the existing institutional structure governing administrative rulemaking is especially ill-suited for revisions of established science- or technology-based environmental and public health standards").

traditional regulatory domains.[21] Two of these cases involved challenges to early federal responses to the global Covid-19 pandemic, and the remaining case involved a rule limiting greenhouse gas emissions from power plants.[22] The holdings in these cases add a further layer of complication, if not an outright barrier, to Congressman Lieu's goal of a new agency with authority to oversee a rapidly evolving technology with profound social and economic implications.

In each of these MQD cases, the Supreme Court invoked the doctrine to find that the agencies exceeded their statutory authority. The MQD requires explicit grants of authority when federal rules implicate an issue of major political and economic consequence, and reserves for the courts the exclusive authority to determine if a statute is explicit enough to prevail under an MQD analysis.[23] According to the Court in *West Virginia v. Environmental Protection Agency* ("*West Virginia*"):

> In the ordinary case, that context has no great effect on the appropriate analysis. Nonetheless, our precedent teaches that there are "extraordinary cases" that call for a different approach—cases in which the "history and the breadth of the authority that [the agency] has asserted," and the "economic and political significance" of that assertion, provide a "reason to hesitate before concluding that Congress" meant to confer such authority.[24]

Although the MQD requires that Congress "speak clearly" in such instances, the Court has provided little specificity itself.[25] Most

---

[21] *See* Ala. Ass'n of Realtors v. Dep't of Health & Hum. Servs., 141 S. Ct. 2485 (2021); Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin., 142 S.Ct. 661 (2022); West Virginia v. EPA, 142 S.Ct. 2587 (2022).

[22] *Ala. Ass'n of Realtors,* 141 S. Ct. at 2485; *Nat'l Fed. of Indep. Bus.*, 142 S.Ct. at 661; *West Virginia*, 142 S.Ct. at 2587.

[23] King v. Burwell, 576 U.S. 473, 485–86 (2015) ("Whether [tax] credits are available on Federal [health insurance] Exchanges is . . . a question of deep 'economic and political significance' that is central to [the Affordable Care Act]; had Congress wished to assign that question to an agency, it surely would have done so expressly . . . . This is not a case for the IRS. It is instead our task to determine the correct reading of [the statute].").

[24] *West Virginia*, 142 S.Ct. at 2608 (citing FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 159 (2000)).

[25] Jonathan H. Adler, *West Virginia v. EPA: Some Answers About Major Questions*, 2021–2022 CATO SUP. CT. REV. 37, 38 (2022) ("While *West Virginia*

MQD cases provide only general statements to justify the application of the doctrine. Even the *West Virginia* decision, which includes the Court's most detailed discussion of the MQD to date, explicitly declines to identify any meaningful guidance for Congress or agencies regarding when and how the MQD may apply in future cases.[26]

The Court's lack of clarity reserves sweeping power for judges to substitute their views of the political and economic tradeoffs for those of the executive branch in any number of future controversial agency actions.[27] Furthermore, a doctrine that claims some issues are so important that only the courts can interpret a statute, without providing clear guidance regarding which issues fall within the court's exclusive domain, will likely create a chilling effect that discourages agencies from tailoring regulations to new circumstances. This is a direct contrast to the flexibility that is often required to effectively govern complex, dynamic problems.[28]

Because the Court's precedent simply provides a list of circumstances when the MQD has applied in the past, as opposed to defining a coherent test to explain when the doctrine does (or perhaps more importantly, does not) apply, familiarity with the key MQD cases is critical to understanding its implications for emerging technology governance. This Part begins with a summary of the MQD cases prior to 2021. It then focuses on the three cases decided during the 2021–22 term, highlighting the MQD's rapid shift to a prominent tool of statutory construction for the Court's conservative

---

v. EPA reaffirmed that courts should be wary of allowing agencies to pour new wine out of old bottles, it left substantial questions about the major questions doctrine unanswered. By skimping on statutory analysis and front-loading consideration of whether a case presents a major question, Chief Justice Roberts' opinion failed to provide much guidance for lower courts.").

[26] Lieu, *supra* note 5 (claiming that providing generally-applicable guidance would be "mere dicta").

[27] *See* Lisa Heinzerling, *The Supreme Court Is Making America Ungovernable*, ATLANTIC (July 26, 2022), https://www.theatlantic.com/ideas/archive/2022/07/supreme-court-major-questions-doctrine-congress/670618/ [https://perma.cc/LLB6-XJ3B] ("Many agencies will just avoid taking such actions in the first place, knowing the risk. The obvious result could be a federal government with little ability to tackle many of the biggest issues society faces.").

[28] *Id.*

majority. Part III builds upon this overview of the MQD's evolution to explore the doctrine's impacts on emerging technology governance.

A. The Early MQD Cases

Prior to the 2021–22 term, the MQD existed on the periphery of administrative law. Then, as now, it was a poorly defined and potentially boundless tool for a skeptical court to overturn agency actions. Yet, despite its potential to allow courts to dramatically shift power from the executive branch to the judiciary, it appeared only intermittently and unpredictably. Some early major questions cases treat the doctrine as a stand-alone means of statutory interpretation,[29] some treat it as a part of *Chevron* analysis,[30] and many cases involving issues of major political and economic consequence neglect to cite the doctrine at all.[31]

FDA v. Brown & Williamson Tobacco Corp. ("*Brown & Williamson*") established the framework that is commonly cited in MQD cases:[32]

> [O]ur inquiry into whether Congress has directly spoken to the precise question at issue is shaped, at least in some measure, by the nature of the question presented. Deference under *Chevron* to an agency's construction of a statute that it administers is premised on the theory that a statute's ambiguity constitutes an implicit delegation from Congress to the agency to fill in the statutory gaps. In extraordinary cases, however,

---

[29] *See, e.g.,* King v. Burwell, 576 U.S. 473, 486 (2015) (determining that it is the judiciary's role to determine the correct reading of the tax credit provisions of the Affordable Care Act).

[30] *See* Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 324 (2014) (considering whether the issue was a major question as part of Step 2 analysis).

[31] *See* Jonas J. Monast, *Major Questions About the Major Questions Doctrine*, 68 ADMIN. L. REV. 445, 465–69 (2016) (discussing three Clean Air Act cases that seemingly raised issues that could implicate the MQD but where the Court did not invoke the doctrine).

[32] FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 125, 132 (2000). Although *Brown & Williamson* established the framework for the MQD, the Court did not refer to the MQD as a recognized doctrine until 22 years later in West Virginia v. EPA, 142 S.Ct. 2587, 2609 (2022).

> there may be reason to hesitate before concluding that Congress has intended such an implicit delegation.[33]

There, the FDA sought to regulate tobacco based on its authority to regulate drugs and devices.[34] Several factors led the Court to conclude that the FDA had exceeded its statutory authority: the agency was relying on a new interpretation of an old statute; Congress had debated regulating tobacco but had not banned it; defining tobacco as a drug was inconsistent with overall statutory context; and, more generally, the Court's "common sense" judgement "as to the manner in which Congress is likely to delegate a policy decision of such economic and political magnitude to an administrative agency."[35]

The Court applied a similar rationale in *Gonzalez v. Oregon*[36] and *Utility Air Regulatory Group v. EPA* ("*UARG*").[37] *Gonzalez* rejected an interpretation of the Controlled Substances Act that would authorize the U.S. Attorney General to ban Oregon physicians from prescribing drugs for physician-assisted suicide.[38] Citing factors such as the ongoing political debate over physician-assisted suicide and the "oblique form of the claimed delegation," the Court concluded "that Congress could not have intended to delegate a decision of such economic and political significance to an agency in so cryptic a fashion."[39]

UARG involved one of the Environmental Protection Agency's ("EPA") initial steps to regulate greenhouse gas ("GHG") emissions following *Massachusetts v. EPA* ("*Massachusetts*").[40] Specifically, the regulation at issue subjected new sources of air pollution (or those undergoing major modifications) to Clean Air Act permitting

---

[33] *Brown & Williamsoon Tobacco Corp.*, 529 U.S. at 159 (internal citations omitted).

[34] *Id.*

[35] *Id.* at 138, 156.

[36] 546 U.S. 243, 248–49 (2006)

[37] 573 U.S. 302, 309 (2014).

[38] *Gonzalez,* 546 U.S. at 275.

[39] *Id.* at 267 (citing *Brown & Williamson Tobacco Corp.*, 529 U.S. 120 at 160).

[40] *Util. Air Regul. Grp.*, 573 U.S. 302, 312–13 (2014); Massachusetts. v. EPA, 549 U.S. 497, 528–29 (2007) (holding that the Clean Air Act applies to greenhouse gas emissions).

requirements.[41] The relevant section of the statute applies to stationary sources—for example, power plants, refineries, and factories—that emit over 100 or 250 tons per year of a regulated pollutant.[42] However, regulating stationary sources emitting 250 tons per year of GHG emissions would have covered tens of thousands of small emitters, such as retail stores or office buildings, that are otherwise not subject to this provision of the Clean Air Act.[43] To avoid this result, the EPA limited the permitting requirements to new sources with annual GHG emissions of 100,000 tons and to sources undergoing major modifications that would increase annual GHG emissions by 75,000 tons.[44]

The Court overruled the EPA's exemption for small emitters because the practice conflicted with clear statutory requirements.[45] Next, because there would no longer be an exemption for smaller sources, the Court held that the regulation presented a major question: whether Congress intended for the EPA to promulgate a regulation that would so dramatically expand the permitting requirements.[46] Using this line of reasoning, the Court concluded that the EPA had discovered new, expansive authority in a "long-extant" statute, which ran afoul of Congress' intent.[47]

King v. Burwell is an outlier in MQD precedent, as it remains the only Court decision relying on major questions precedent to uphold an agency action.[48] The case considered an Internal Revenue Service ("IRS") interpretation of the Patient Protection and Affordable Care Act ("ACA") that granted federal tax credits to individuals purchasing insurance through a federal healthcare exchange, despite the fact that the language of the ACA provided that tax credits "shall be allowed" for taxpayers who purchase their

---

[41] *Util. Air Regul. Grp.*, 573 U.S. at 317.
[42] *Id.* at 328.
[43] *Id.*
[44] *Id.* at 313.
[45] *Id.* at 315.
[46] *Id.*
[47] Util. Air Regul. Grp. v. EPA, 573 U.S. 302, 315 (2014).
[48] 576 U.S. 473, 485 (2015).

plans through "an Exchange established by the State."[49] Petitioners, residents of Virginia where a state exchange was unavailable, challenged their eligibility for federal tax credits.[50]

Writing for the Court, Chief Justice Roberts characterized the provision of tax credits as a central feature of the ACA.[51] Without tax credits, fewer citizens could afford health insurance and would hold off until they need it, reducing the number of customers paying into the insurance pool and raising costs for everyone.[52] The majority opinion relied on "the context and structure" of the ACA to reach this conclusion, rather than limiting its analysis to the specific language regarding the provision of tax credits.[53] Quoting *Brown & Williamson,* the Court stated:

> [O]ftentimes the "meaning—or ambiguity—of certain words or phrases may only become evident when placed in context." . . . So when deciding whether the language is plain, we must read the words "in their context and with a view to their place in the overall statutory scheme." Our duty, after all, is "to construe statutes, not isolated provisions."[54]

Although *Burwell* is the only case in the Court's MQD precedent to uphold an agency action, it is consistent with the other cases in an important respect: After concluding that the issue was one of deep "economic and political significance," the Court reserved for itself the sole authority to interpret Congress's intent.[55]

B. The 2021–22 MQD Cases

The infrequent reference to major questions as a means of statutory construction shifted abruptly during the Court's 2021–22 term, when the Court cited the MQD to overturn three major agency

---

[49] *Id.* (citing FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 159 (2000)) (concluding that the issue of tax credits and the Affordable Care Act is an "extraordinary case"); 42 U.S.C. § 18031.

[50] *Id.*; *Burwell*, 576 U.S. at 483–84.

[51] *Burwell*, 576 U.S. at 485.

[52] *Id*. at 480 ("As premiums role higher and higher, and the number of people buying insurance sank lower and lower, insurers began to leave the market entirely. As a result, the number of people without insurance increased dramatically.").

[53] King v. Burwell, 576 U.S. 473, 497 (2015).

[54] *Id.* at 474.

[55] *Id.* at 486.

actions.[56] The first of the pandemic-related cases—*Alabama Association of Realtors v. Dep't of Health & Hum. Servs.* ("*Alabama Realtors*")—concerned a nationwide moratorium on evictions.[57] Congress had enacted a temporary moratorium through the 2020 CARES Act.[58] When that moratorium expired in 2021, the Centers for Disease Control and Prevention ("CDC") implemented a new moratorium based on the Public Health Service Act ("PHSA").[59] Section 361 of the PHSA authorizes the CDC Director "to make and enforce such regulations as in his judgment are necessary to prevent the introduction, transmission, or spread of communicable diseases from foreign countries into the States or possessions, or from one State or possession into any other State or possession."[60]

Here, the Court's decision ignored the CDC's arguments regarding Covid-19 transmission and the link between public health and housing during the pandemic. The Court also avoided any attempt to define what Congress intended when it adopted the PHSA. Instead, the Court's opinion listed a series of hypotheticals to challenge the CDC's expansive interpretation: "Could the CDC, for example, mandate free grocery delivery to the homes of the sick or vulnerable? Require manufacturers to provide free computers to enable people to work from home? Order telecommunications companies to provide free high-speed Internet service to facilitate remote work?"[61]

Defining the PHSA narrowly and characterizing the CDC's position as unreasonable allowed the Court to conclude that the agency's reading of the statute "strain[ed] credulity."[62] The majority opinion cited the age of the statute and past CDC regulations addressing discrete public health issues as evidence of the agency's

---

[56] *See* Alabama Ass'n of Realtors v. Dep't of Health & Hum. Servs., 141 S. Ct. 2485 (2021); Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety and Health Admin., 142 S. Ct. 661 (2022); West Virginia. v. EPA, 142 S.Ct. 2587 (2022).

[57] *Alabama Ass'n of Realtors*, 141 S. Ct. at 2485.

[58] Coronavirus Aid, Relief, and Economic Security Act, Pub. L No. 116-136, 134 Stat. 281 (2020).

[59] *Alabama Ass'n of Realtors*, 141 S. Ct. at 2487.

[60] 42 U.S.C. § 264(a).

[61] *Alabama Ass'n of Realtors*, 141 S. Ct. at 2489.

[62] *Id.* at 2486.

overreach, refusing to believe that a "decades-old statute that authorizes [the CDC] to implement measures like fumigation and pest extermination" would include authority to address evictions.[63]

The second pandemic case—*National Federation of Independent Business v. OSHA* ("*NFIB*")—similarly limited an agency's ability to respond to evolving issues. In that case, the NFIB challenged the Occupational Safety and Health Administration's ("OSHA") mask and vaccine requirements for large employers.[64] There, OSHA had based the rules on its authority to establish Emergency Temporary Standards to address "grave danger from exposure to substances or agents determined to be toxic or physically harmful or from new hazards . . . [when] such emergency standard is necessary to protect employees from such danger."[65]

The Court in *NFIB*, like in *Alabama Realtors*, found that OSHA had used an unlawfully broad interpretation of its statutory authority.[66] The Court focused on OSHA's role as overseeing "*occupational* safety" and enacting standards "reasonably necessary or appropriate to provide safe or healthful *employment*."[67] The opinion interpreted these terms as limiting OSHA's authority to risks that are directly related to the workplace and not risks facing society generally.[68]

Prior to reaching that conclusion, the Court cited numerous factors to determine that the regulations were subject to the MQD.[69] The mandate applied to "roughly 84 million workers, covering virtually all employers with at least 100 employees," which includes "much of the nation's workforce."[70] Employers were responsible for enforcement.[71] "The only exception [was] for workers who

---

[63] *Id.* at 2487 (citing 42 U.S.C. § 264(a)).

[64] Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., Occupational Safety & Health Admin., 142 S. Ct. 661, 665 (2022); 29 U.S.C. § 655(c)(1).

[65] *Nat'l Fed'n of Indep. Bus.*, 142 S. Ct. at 665.

[66] *Id.*

[67] *Id.* (emphasis in original).

[68] *Id.*

[69] *Id.* at 662.

[70] *Id.*

[71] *Nat'l Fed'n of Indep. Bus.*, 142 S. Ct. at 665. Gorsuch's concurrence invoked the MQD. *Id.* at 667.

[obtained] a medical test each week at their own expense and on their own time, and also [wore] a mask each workday."[72] The regulations were a departure from past CDC practice and differed from any specific workforce mandate enacted by Congress.[73] And Congress "declined to enact any measure similar" to the rule in question.[74]

Later in the opinion, the Court pointed to another particularly problematic factor in MQD precedent: political statements by the President or agency leaders. President Biden had argued that the OSHA rule was part of "a new plan to require more Americans to be vaccinated."[75] According to the President, the administration's goal was to "increase vaccination rates at 'businesses all across America.'"[76] While this indicates what the President had in mind, it tells nothing about what Congress intended when it enacted the Occupational Safety and Health Act. Nevertheless, the Court did provide some limited guidance about OSHA regulations that would survive MQD analysis, recognizing that "targeted regulations are plainly permissible … [w]here the virus poses a special danger because of the particular features of an employee's job or workplace."[77]

Despite the MQD's long history and the references to major questions in the recent pandemic cases, *West Virginia* is the Court's first majority opinion to explicitly cite the MQD as an established doctrine.[78] This doctrine, according to Chief Justice Roberts, arises from many of the cases described above, which establish "an identifiable body of law that has developed over a series of significant cases" to address the problem of "agencies asserting highly consequential power beyond what Congress could reasonably be understood to have granted."[79]

---

[72] *Id.*
[73] *Id.*
[74] Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., 142 S. Ct. 661, 662–63 (2022).
[75] *Id.* at 663.
[76] *Id.*
[77] *Id.* at 665–66.
[78] West Virginia v. EPA, 142 S. Ct. 2587, 2609 (2022).
[79] *Id.*

In *West Virginia*, the Court considered a Clean Air Act rule targeting GHG emissions following *Massachusetts.*[80] However, the majority opinion makes no reference to *Massachusetts* or the resulting obligation to reduce GHG emissions.[81] Excluding this critical precedent allowed the Court to focus narrowly on the statutory language and the scope of the regulation, without considering how those factors fit within the broader context of the Clean Air Act and the EPA's duty to address pollutants that endanger public health.

The holding in *West Virginia* turned on the interpretation of the phrase "best system of emission reduction" found in Section 111 of the Clean Air Act.[82] The EPA sets a performance standard (often a specific pollution limit) that "reflects the emission limitation achievable by the best system of emission reduction."[83] In other words, the pollution limit is directly linked to the EPA's determination of the "best system."[84] The standards are tailored to the different characteristics of pollutants and different types of polluting facilities.[85] While the statute grants broad discretion to the EPA, the discretion is not unbounded. The EPA must consider cost, "non-air quality health and environmental impact[s] and energy requirements," and whether the "best system" has been "adequately demonstrated."[86] Section 111 typically applies to performance standards for new sources of pollution, such as power plants or industrial facilities, or those undergoing a major modification.[87]

Performance standards are also required for *existing* stationary sources in the rare circumstance when the pollutant is regulated under Section 111, the existing source is similar to a new or modified source that is subject to the Section 111 regulation, and the

---

[80] The rule at issue in *West Virginia* was the Clean Power Plan, a Clean Air Act regulation to limit carbon dioxide emissions from existing coal and natural gas-fired power plants. 80 Fed. Reg. 64667 (Oct. 23, 2015).

[81] In contrast, the dissent cites *Massachusetts* in the first sentence. *West Virginia*, 142 S. Ct. at 2626 (Kagan, J., dissenting).

[82] *Id.* at 2607.

[83] 42 U.S.C. § 7411(a)(1).

[84] *Id.*

[85] *Id.* § 7411 (b), (d).

[86] *Id.* § 7411 (a).

[87] West Virginia v. EPA, 142 S. Ct. 2587, 2601 (2022).

pollutant is not also regulated elsewhere in the Clean Air Act.[88] In that case, the EPA determines the emission limit using the best system of emission reduction, then the states develop plans for the covered facilities within their respective borders to comply with the limit.[89] Carbon dioxide ("CO_2") is not regulated under either of these regimes, so the EPA was required to issue existing source standards once the EPA issued CO_2 performance standards for new gas and coal plants.

These standards were challenged in *West Virginia*.[90] Because there are few cost-effective options for reducing GHG emissions from existing coal and natural gas-fired powerplants, the EPA departed from its past practice of interpreting the "best system" language to only include measures under the direct control of covered sources.[91] The regulation, referred to as the Clean Power Plan, defined the "best system of emission reductions" as a suite of measures for reducing emissions from the electric power sector.[92] The Court rejected this interpretation.

The Court invoked the full panoply of reasons an agency action may run afoul of the MQD to reject EPA's CO_2 regulation. The Court concluded that the EPA had discovered expansive new authority in a vague and long-extant statutory provision, in large part because the majority characterized the existing source provision in Section 111 as a "backwater" provision that is a mere gap filler.[93] The majority also concluded the Clean Power Plan was the EPA's attempt to accomplish what Congress could not, citing the ongoing congressional debate about climate change and Congress's failure to pass a major climate bill in 2010.[94] In addition, the opinion

---

[88] Specifically, the pollutant is not regulated under the National Ambient Air Quality Standards ("NAAQS") program or as a hazardous air pollutant. 42 U.S.C. § 7411(d).

[89] *Id.*

[90] *See West Virginia*, 142 S. Ct. at 2602–06.

[91] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 79 Fed. Reg. 34829 (June 18, 2014).

[92] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662 (Oct. 23, 2015).

[93] West Virginia v. EPA, 142 S. Ct. 2587, 2610–13 (2022).

[94] *Id.* at 2614 ("Congress, however, has consistently rejected proposals to amend the Clean Air Act to create such a program.").

interpreted the Clean Power Plan as the EPA regulating beyond its statutory jurisdiction, pointing to the agency's political sales pitch about the benefits of generation switching to conclude that the EPA was attempting to redesign the electricity system rather than regulating pollution.[95]

NFIB, *Alabama Realtors*, and *West Virginia* may only be the tip of the iceberg. There is a wave of MQD cases in lower courts, and MQD arguments are prominent in *cert* petitions and arguments before the Court.[96] In the meantime, agencies must navigate the unpredictable and unbounded nature of the MQD.

IV. THE MQD'S IMPLICATIONS FOR EMERGING TECHNOLOGY GOVERNANCE

To the extent that there are identifiable themes to guide a court's MQD analysis, they do not bode well for flexible delegations of authority allowing agencies to adapt as technologies evolve. By definition, addressing a complex, dynamic, rapidly evolving policy issue is likely to have far-reaching political and economic impacts. Without specific guidance about which types of responses are likely to trigger MQD analysis, agencies start the regulatory process unclear about the scope of their authority to address the policy concern.

Many aspects of statutory design that allow agencies to tailor regulations to new circumstances are precisely the factors that have triggered MQD scrutiny. This Part identifies four MQD hurdles that

---

[95] *Id.* at 2604.

[96] *See, e.g., Brown v. U.S. Dep't of Educ.*, No. 4:22-CV-0908-P, 2022 WL 16858525, at *14 (N.D. Tex. Nov. 10, 2022), *cert. granted before judgment sub nom. Dep't of Educ. v. Brown*, 143 S. Ct. 541 (2022) (invoking the MQD to conclude that the U.S. Department of Education "lacks 'clear congressional authorization' for the Program under the HEROES Act"); *Louisiana v. Becerra*, No. 3:21-CV-04370, 2022 WL 4370448, at *11 (W.D. La. Sept. 21, 2022) (invoking the MQD to find that the Department of Health and Human Services exceeded its statutory authority with interim rule requiring COVID-19 vaccinations and masking for Head Start programs); *BST Holdings, L.L.C. v. OSHA*, 17 F.4th 604, 617 (5th Cir. 2021) (finding that $3 billion in compliance costs was enough to trigger the major questions doctrine); *Louisiana v. Biden*, 585 F. Supp. 3d 840 (W.D. La. Feb. 11, 2022) (enjoining the Biden administration's use of the social cost of carbon).

can significantly limit the effectiveness of the type of nimble agency Congressman Lieu imagines for AI, as well as undermine the many agencies tasked with overseeing dynamic technologies and their impacts:[97] (1) the subjectivity regarding when the MQD applies, (2) the expectation that regulations do not have impacts beyond an agency's traditional domain, (3) skepticism about new interpretations of older statutes, and (4) arbitrary interpretations of statutory context.

A. Subjective Judicial Scrutiny

The MQD cases create three distinct subjective inquiries for a reviewing court. The first is a court's assessment of the degree of political and economic consequence presented by the issue. Under the first prong of the MQD, the agency's specific regulatory choices are secondary to the question of whether the issue is political enough that Congress must be more specific. One judge may view a political issue as less controversial and another as more, leading to different levels of scrutiny of the agency's action.[98] For example, from one vantage point, the Clean Power Plan may appear as an administrative agency tackling a long-standing politically contentious issue using statutory language not designed for the issue. From another viewpoint, the Clean Power Plan was a pragmatic response to a statutory mandate. Because political and economic impacts are threshold questions under the MQD, the doctrine invites explicit political judgements from the judiciary, and the outcome of the case will likely turn on those judgements.

Notably, none of the MQD cases cite evidence about the views of Congress at the time it adopted the statute in question. Instead, the reviewing court treats Congress as a timeless body that has always shared the perspective of political and economic controversy as that of the current Congress at the time of the challenge to an agency action. Issues that may not have been controversial when Congress adopted a statute, such as granting broad authority to protect public health in the workplace or to limit pollution from large

---

[97] Lieu, *supra* note 5.

[98] *Compare* West Virginia v. EPA, 142 S. Ct. 2587, 2592–616 (2022) (majority opinion), *with West Virginia*, 142 S. Ct. at 2626–44 (Kagan, J., dissenting).

sources, may be the source of intense national debates by the time a rule reaches the Court.[99] This creates a catch-22 for administrative agencies if courts ignore congressional records and other evidence of congressional intent at the time a statute was enacted, but then interpret the statutory language in light of the current political and economic consequence.

The second subjective inquiry for a court is whether the regulation represents an extraordinary case given the court's view of the political and economic issues involved. When determining whether a case qualifies as extraordinary, a court considers the "history and the breadth of the authority that [the agency] has asserted" and the "'economic and political significance' of that assertion."[100] Here, for example, courts may consider factors such as whether an agency has stayed in its respective lane, departed from past practice, or relied on rarely-invoked statutory provisions.[101]

The debate in *West Virginia* between the majority opinion, concurrence, and dissent regarding the MQD's role in statutory construction shows the arbitrariness and unpredictability of the "extraordinary" inquiry. Chief Justice Roberts' majority opinion emphasizes the extraordinary aspects of the MQD cases, arguing that the MQD applies in rare circumstances.[102] Justice Gorsuch's concurrence, on the other hand, argues that the MQD is embedded in run-of-the-mill statutory interpretation.[103] Justice Kagan's dissent challenges the extraordinariness of the cases, as well as questions the existence of the MQD as a doctrine at all.[104] According to Kagan, the MQD cases involve normal statutory interpretation, asking whether an agency was "operating far outside its traditional lane, so that it had no viable claim of expertise or experience. And second, the action, if allowed, would have conflicted with, or even wreaked havoc on, Congress's broader design."[105]

---

[99] *See supra* Section III.B.

[100] *West Virginia*, 142 S. Ct. at 2595 (quoting FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 159–160 (2000)).

[101] *Id.* at 2633 (Kagan, J., dissenting).

[102] *Id.* at 2608.

[103] *Id.* at 2617 (Gorsuch, J., concurring).

[104] *Id.* at 2634 (Kagan, J., dissenting).

[105] *Id.* at 2633 (Kagan, J., dissenting).

Only after weighing in on the politics and extraordinariness of the regulation does the court reach the third subjective inquiry: interpreting the statutory language itself.[106] In practice, this creates a higher standard of review for some agency rules based on subjective assessments by reviewing courts. If the court finds that the MQD applies and that Congress has not spoken clearly enough regarding the agency's authority to craft a rule with major political and economic consequence, the regulation will fail.

B. Narrowing Agency Jurisdiction

Invoking the MQD in those circumstances when an agency does not stay in its respective lane necessarily restricts the ability to address cross-cutting issues. Like AI, there are many new technologies that may not fit neatly within traditional regulatory silos. For example, the advent of 3-D printers reaches numerous fields of law, transforming the application of gun laws,[107] copyright laws,[108] and medical treatment.[109] Nanotechnology may "improve, even revolutionize, many technology and industry sectors: information technology, homeland security, medicine, transportation, energy, food safety, and environmental science,

[106] West Virginia v. EPA, 142 S. Ct. 2587, 2609 (requiring an agency to "point to 'clear congressional authorization' for the power it claims" in extraordinary cases).

[107] *See, e.g.,* Keith Wagstaff, *Despite Plastic Gun Ban, 3-D Printed Firearms Still Have a Future*, NBC NEWS (Dec. 9, 2013, 8:02 PM), http://www.nbcnews.com/technology/despite-congressional-ban-3-d-printed-guns-still-have-future-2D11718212 [https://perma.cc/U7QB-KL4W].

[108] *See, e.g.*, Steven Henn, *As 3-D Printing Becomes More Accessible, Copyright Questions Arise*, NAT'L PUBLIC RADIO (Feb. 19. 2013, 3:01 AM), http://www.npr.org/blogs/alltechconsidered/2013/02/19/171912826/as-3-d-printing-become-more-accessible-copyright-questions-arise [https://perma.cc/3HXZ-XGEP].

[109] *See, e.g.*, U.S. FDA, PAVING THE WAY FOR PERSONALIZED MEDICINE: FDA'S ROLE IN A NEW ERA OF MEDICAL PRODUCT DEVELOPMENT 9 (Oct. 2013), https://www.fdanews.com/ext/resources/files/10/10-28-13-Personalized-Medicine.pdf [https://perma.cc/Y5L8-GDCF] (describing a 3D printed tracheal splint).

among many others."[110] CRISPR and other advances in genetic engineering are already leading to dramatic advances in health care, agriculture, and invasive species management, while also creating the real prospect of designer babies.[111] Any attempt to regulate one of these technologies will very likely impact issues that fall within another agency's jurisdiction.

As a case in point, influencing the nation's energy mix is not outside the EPA's proverbial lane at all. The Clean Air Act has consistently served as one of the nation's most impactful energy laws.[112] Pollution control requirements directly impact energy production and consumption, and the agency regularly evaluates the economic and energy system impacts of its rules.[113] Justices Kagan, Sotomayor, and Thomas each noted this fact during the *West Virginia* oral argument.[114] Nonetheless, the Court's decision characterized the Clean Power Plan as a policy intended to redesign the electricity grid rather than address pollution, and thus beyond the scope of the EPA's delegated authority.[115]

---

[110] *Applications of Nanotechnology*, NAT'L NANOTECHNOLOGY INITIATIVE, https://www.nano.gov/about-nanotechnology/applications-nanotechnology [https://perma.cc/6HUD-PE9D] (last visited Dec. 15, 2013).

[111] *See, e.g.,* Gregory N. Mandel, *Emerging Technology Governance*, *in* INNOVATIVE GOVERNANCE MODELS FOR EMERGING TECHNOLOGIES, 44–62 (Gary E. Marchant et al. eds., 2013).

[112] Karen Clay et al., *Impacts of the Clean Air Act on the Power Sector from 1938–1994:*
Anticipation and Adaptation, NAT'L BUREAU OF ECON. RSCH: WORKING PAPERS (last revised Dec. 2022) https://www.nber.org/system/files/working_papers/w28962/w28962.pdf [https://perma.cc/MX5T-Q8X6].

[113] West Virginia v. EPA, 142 S. Ct. 2587, 2630 (2022) (Kagan, J., dissenting).

[114] Transcript of Oral Argument at 4142, 4145, 4149–51, West Virginia v. EPA, 142 S. Ct. 2587 (2022) (No. 20-1530).

[115] *West Virginia*, 142 S. Ct. at 2611. Here, the Court focused on the EPA's claim that the Clean Power Plan would "improve the overall power system" without including the full context of the final rule which clarifies that the EPA's goals were emission reductions, grid reliability, and cost-effectiveness, and that "[t]hese opportunities exist in the utility power sector in ways that were not relevant or available for other industries for which the EPA has established CAA section 111(d) emission guidelines." *Id.*; Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,703 (Oct. 23, 2015).

C. Limiting Effective Governance over Time

Considering the age of a statute in MQD analysis creates a bias against statutes designed to be durable over time and allows courts to shrink a statute's scope as the law ages. For example, lawmakers may be able to specify risks that agencies should manage but may not be able to state with specificity how an agency should manage the prospective risks without limiting potential benefits. Responding to emerging technologies will often call for a new regulatory response, yet an agency may run afoul of the MQD if it breaks from a past regulatory approach, adopts a new interpretation of statutory language, or utilizes a statutory provision that Congress designed to apply in rare circumstances. Even if one accepts that agency actions such as those in *Brown & Williamson* or *UARG* represent dramatic changes in long-standing agency interpretation and that these dramatic changes to the respective agency's own interpretations suggest that Congress has not delegated the authority to make the change, the Court's reasoning does little to guide agencies with future rulemakings based on statutes granting discretion to agencies.

Similarly, the fact that Congress subsequently debated a politically and economically significant issue but failed to pass new legislation offers even less insight into the intent of Congress at the time lawmakers enacted a statute. While the Court cited this as evidence that an agency regulation exceeded the delegated authority in *West Virginia*,[116] *NFIB*,[117] and *Brown & Williamson*,[118] debating but not adopting a proposed law does not clarify whether Congress decided that existing authority was sufficient to authorize agency action or whether Congress did not intend to delegate the agency's claimed authority. Furthermore, the Court's passing references to congressional debates do not explain how much of a debate is enough to assist with statutory interpretation. For example, is it enough for members to introduce bills? Must there be some level of debate? Even so, granting a congressional minority the ability to alter a statute's meaning by simply debating a bill would radically undermine the constitutional system for adopting laws.

---

[116] *West Virginia*, 142 S. Ct. at 2596.
[117] Nat'l Fed'n of Indep. Bus. v. Dep't of Lab., 142 S. Ct. 661, 662–63 (2022).
[118] FDA v. Brown & Williamson Tobacco Corp., 529 U.S. 120, 153–56 (2000).

Using past agency actions to interpret congressional intent similarly restricts agencies' ability to tailor regulations to complex issues as they evolve. For example, the *NFIB* Court critiques the agency because it had never issued such a sweeping regulation. But OSHA had also never faced the challenge of ensuring a safe workplace during a global pandemic. Ironically, this MQD criterion defers to a past agency interpretation to overturn a current one.

D. Arbitrarily Evaluating Statutory Context

West Virginia is an instructive example of the arbitrariness of the Court's use of context to interpret congressional intent. The Clean Air Act includes many of the characteristics that should allow agencies to tailor regulatory responses to changing circumstances. Congress designed the law to adapt to new information and to new technologies.[119] The Act includes many non-discretionary duties, including the duties to: reduce air pollutants that harm public health or the environment, regularly review new data to assess air pollutants and their impacts, review regulations on a specified timeline to ensure that they effectively protect public health in light of the new data, and update regulations as necessary.[120] These non-discretionary duties are often coupled with broad grants of discretion to the EPA and state governments to design regulations.[121] Applying this general context to the more specific issue of regulating GHG emissions from fossil fuel-fired power plants, the Clean Air Act requires the EPA to act because the pollutants harm public health and the environment, grants EPA the discretion to design regulations tailored to the regulated pollutants and the types of sources, and requires the EPA to consider cost when picking the "best system of emission reduction."[122] Taken together, these characteristics should address a court's concerns that an agency is discovering new powers in a long-extant statute, refusing to stay in its lane, or otherwise acting beyond the scope of its authority.

---

[119] Massachusetts v. EPA, 549 U.S. 497, 532 (2007).

[120] 42 U.S.C. §§ 7408, 7411, 7412, 7521.

[121] 42 U.S.C. §§ 7410, 7411(d).

[122] Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66496, 66497 (2009).

Particularly important for assessing whether the EPA's Clean Power Plan fell within the scope of the MQD, although entirely absent from the majority opinion, the Supreme Court has already concluded that Congress answered the most major of the major questions regarding GHGs and the Clean Air Act.[123] *Massachusetts* required the EPA to determine whether GHG emissions endanger public health.[124] Once the agency made the endangerment finding in 2009, there was an obligation to regulate.[125] Although this is not a free pass for implementing any GHG rules the EPA may desire, it is certainly an important factor when interpreting the Agency's authority to address the problem. Ignoring this critical precedent allowed the Court to view the "vague language" in Section 111 without a broader contextual grounding.[126]

As the Chief Justice explained in *West Virginia*, the Clean Air Act includes three main sections that apply to stationary sources.[127] One of these options covers hazardous air pollutants, which does not apply to GHGs.[128] Another of the options—the National Ambient Air Quality Standards ("NAAQS") program—focuses on ambient concentrations of certain air pollutants.[129] The NAAQS provisions require the EPA to determine the pollution limit and grants to states the authority to develop plans that meet the EPA requirements.[130] This section currently covers six pollutants, with a focus on local and regional impacts.[131] It is not a natural fit for GHG emissions because individual states are unable to reduce the atmospheric concentration of GHGs on their own.[132] The EPA determined that

---

[123] *Massachusetts*, 549 U.S. at 535.

[124] Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. at 66,499.

[125] 42 U.S.C. § 7521 (requiring the EPA Administrator to regulate "the emission of any air pollutant from . . . new motor vehicles or new motor vehicle engines, which . . . cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare").

[126] *See* West Virginia v. EPA, 142 S. Ct. 2587, 2610 (2022).

[127] *Id.* at 2600.

[128] *Id.*

[129] *Id.*

[130] *Id.*

[131] *See West Virginia*, 142 S. Ct. at 2610.

[132] *Id.*

the remaining option—Section 111—was the best choice for regulating GHGs because the section allows the agency to focus on different categories of polluting facilities and includes flexible language allowing the EPA to tailor regulations to specific types of sources and pollutants.[133]

As noted previously, this flexible language is not unbounded. For example, limiting the "best system" to those that are "adequately demonstrated" prevents the EPA from issuing unachievable standards, or standards for which the costs and impacts are speculative or unknown.[134] Requiring the EPA to consider cost, non-air quality health and environmental impacts, and energy requirements similarly limits the agency's discretion.

Coal-fired electricity generation is the largest source of GHG emissions from the electricity sector.[135] Identifying a best system for reducing emissions that is cost-effective, adequately demonstrated, and achieves meaningful emission reductions left the EPA with a few choices. The agency determined that there were few options that met these criteria if the best system was limited to actions that power plant operators could implement at their facilities.[136] EPA officials had to choose between two interpretations: (1) limiting "best system of emission reductions" to only apply at covered facilities and achieving minimal (if any) emission reductions at coal-fired power plants or (2) defining "system" to include cost-effective emission reduction opportunities within the broader electricity sector.[137] The EPA chose the latter, as the policy could achieve significant

---

[133] *Id.* at 2601.

[134] 42 U.S.C § 7411(a).

[135] *Sources of Greenhouse Gas Emissions*, U.S. ENV'T PROT. AGENCY (Aug. 5, 2022), https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions#electricity [https://perma.cc/J6BD-29EY] (finding that coal-fired electricity generation was responsible for approximately 54% of CO_2 emissions in 2020 but represented only 20% of electricity generation).

[136] Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64661, 64665 (Oct. 23, 2015) (explaining the elements of the best system of emission reduction).

[137] *Id.*

emission reductions at a reasonable cost and take advantage of trends already underway in the electricity sector.[138]

While the Court was correct that Section 111(d)—the section covering existing sources of pollution that was the foundation for the Clean Power Plan—is a "gap filler" that has rarely been invoked,[139] that is by design. Congress restricted that part of the statute to a narrow set of circumstances, but these circumstances give rise to the Clean Power Plan. Although new sources and those undergoing major modifications are the primary focus of Section 111, lawmakers also addressed the rare situations where a pollutant from existing sources may otherwise escape regulation because it is not subject to NAAQS or Hazardous Air Pollutants ("HAPs") provisions.[140] This is precisely the scenario that led to the Clean Power Plan: GHG emissions are not covered by NAAQS or HAPs, bringing existing GHG sources within the scope of Section 111(d).[141]

In sum, the Clean Air Act's broad definition of air pollutant,[142] the endangerment finding for GHG emissions,[143] the definition of performance standards for stationary sources as "the degree of emission limitation achievable by the best system of emission

---

[138] *Id.*

[139] West Virginia v. EPA, 142 S. Ct. 2587, 2595 (2022).

[140] 42 U.S.C. § 4211; *West Virginia*, 142 S. Ct. at 2601 ("[T]he thrust of Section 111 focuses on emissions limits for *new* and *modified* sources") (emphasis in original). Section 111(d) "ensured that there would be 'no gaps in control activities pertaining to stationary source emissions that pose any significant danger to public health or welfare.'" Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64,662, 64,701 (Oct. 23, 2015).

[141] 42 U.S.C. § 7411(d)(1); *see* West Virginia v. EPA, 142 S. Ct. 2587, 2602 (2022) (stating that "[c]arbon dioxide is not subject to a NAAQS and has not been listed as a hazardous pollutant.").

[142] 42 U.S.C. § 7602(g) defines air pollutant as: "any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term 'air pollutant' is used."

[143] § 7521(a)(1). *See also* § 7408(a)(1)(A).

reductions,"[144] the requirement to consider cost and other regulatory impacts, and the limitation that the "best system" must be "adequately demonstrated" grant the EPA with broad, but bounded, discretion. Read with the full statutory context in mind, the Clean Power Plan has far more in common with the IRS rules upheld in *King v. Burwell* ("*Burwell*") than to the remainder of the MQD cases that overturned agency actions. In *Burwell*, Chief Justice Roberts' majority opinion acknowledged that the statute was ambiguous and could be read to exclude tax subsidies for federal healthcare exchanges.[145]

In fact, *West Virginia* should have been an easier case for the Court. Unlike *Burwell*, the Clean Power Plan did not ask the Court to overlook statutory language that seemingly contradicted the agency's interpretation.[146] *Burwell* is a consequentialist decision, with the Court starting with Congress's intended outcome, and working backwards to interpret the statute in that light.[147] In contrast, the Clean Power Plan did not ask the Court to overlook statutory language that seemingly contradicted the agency's interpretation.[148]

Despite the justifications for the EPA's interpretation, the *West Virginia* Court ignored the Clean Air Act's structure and purpose. In essence, the majority accepted that Congress designed the Clean Air Act to tackle globally mixing pollutants that are pervasive throughout the global economy and used broad terms when defining the EPA's authority to tackle these pollutants, but then restricted the EPA's ability to design regulations that effectively balance the statutory goals of emission reductions and cost effectiveness. Justice Roberts' opinion pointed to the Trump administration's replacement

---

[144] § 7411(a).

[145] King v. Burwell, 576 U.S. 473, 488 (2015).

[146] West Virginia v. EPA, 142 S. Ct. 2587, 2609 (2022) (acknowledging the textual basis for the Clean Power Plan).

[147] *See Burwell*, 576 U.S. at 488 ("[T]he Act may not always use the phrase 'established by the State' in its most natural sense. Thus, the meaning of that phrase may not be as clear as it appears when read out of context.").

[148] Justice Scalia's dissent took the *Burwell* majority to task for its use of statutory context to reinterpret the ACA's explicit authorization of tax credits for plans offered on state, but not federal, exchanges. *Id*. at 2497 (Scalia, J., dissenting) (stating that context is "a tool for understanding the terms of the law, not an excuse for rewriting them").

rule—the Affordable Clean Energy ("ACE") rule—as an acceptable agency action without noting that the ACE rule would have resulted in negligible emission reductions from the electric power sector.[149] The record also included analysis projecting that coal-fired generation could increase under the ACE rule, thereby producing higher GHG emissions than with no Clean Air Act regulation—a result that is unquestionably at odds with a "best system of *emission reduction*."

V. EMERGING TECHNOLOGY GOVERNANCE AFTER *WEST VIRGINIA*

The MQD cases only tell part of the story about the scope of an agency's authority. The Supreme Court has not held that Congress *may not* authorize federal agencies to promulgate the challenged regulations, only that Congress *did not* do so with the existing statutes in question.

There are several ways Congress can respond to some of the MQD issues identified in past cases. For example, preambles could explicitly recognize the major questions involved and clearly state the intent to delegate flexible authority to agencies. The preamble could also include the expectation that agencies will design regulations appropriate to the circumstances at the time, even if the new action departs from past practice. Similarly, individual statutory provisions can include language explaining how those respective provisions fit within the broader statutory context. Congress can continue requiring agencies to gather information and specifying the steps an agency must take in response to the information, similar to the endangerment finding that followed the Supreme Court's *Massachusetts* holding that the Clean Air Act applies to GHGs. The statute could specify limiting principles to demonstrate the intent to delegate authority while also preventing agency overreach. Congress could also define the agency's "lane" broadly and include processes for multi-agency cooperation.

Although these strategies may be enough to respond to the past MQD cases, the lack of a coherent test defining the scope of the MQD leaves lawmakers and agencies in the dark about the Court's

[149] *West Virginia*, 142 S. Ct. at 2605.

next use of the doctrine. This uncertainty puts lawmakers and agency officials in an obvious bind if they hope to design laws or tailor regulations that respond to technological advancements. The most likely result of the MQD will be agencies doing less than a statute calls for or sticking with past approaches, even when doing so would be less effective than designing regulations to respond to the new information.

Furthermore, these cautious responses to the MQD may do more to frustrate the will of Congress than to enforce the separation of powers if the purpose of a statute is to allow agencies to apply different regulatory approaches to different problems as they evolve over time.[150] There is no reason to believe that this gets closer to congressional intent, particularly when a statute (such as the Clean Air Act) is designed to collect and address new information.

One obvious response is that Congress can always clarify its intent with subsequent legislation if a court misinterprets a statute. While this may be reasonable in the abstract, it could also undermine congressional intent if the purpose of a statute is to ensure that an agency keeps pace with rapidly evolving technologies. Waiting for courts to state whether the MQD applies and, if so, whether Congress spoke clearly, could mean a multiyear delay before an agency can exercise the full scope of its authority.[151] In the meantime, there may be no effective enforcement mechanism mitigating the new technology's risks. By the time there is statutory certainty, it may be too late for an agency to effectively intervene.

---

[150] In many circumstances, agencies will also continue justifying many rules in the same way they have in the past, perhaps with more emphasis on the clear statements and statutory context in existing laws that demonstrate Congress's intent to grant discretion. Agencies will also likely be more cautious about their political messaging about a controversial rule, emphasizing the statutory purposes and not suggesting that the executive branch is acting because Congress did not.

[151] For example, the EPA promulgated the Clean Power Plan—the rule at issue in *West Virginia*—in 2015. Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units, 80 Fed. Reg. 64, 661 (Oct. 23, 2015). It was not until June 2022 when the Court held that the agency's interpretation of "best system" was inconsistent with congressional intent. *West Virginia*, 142 S. Ct. 2587. Even then the Court refused to the define the scope of EPA's authority, instead limiting its ruling to the EPA's interpretation in the Clean Power Plan. *Id.*

Even if lawmakers do enact new legislation in response to an MQD case, the subjective scrutiny allowed under the MQD means that lawmakers may not know what language to include in a statute to clearly signal its intent to courts.

VI. CONCLUSION

The implications of the MQD are profound. Governing complex, dynamic technologies requires statutory authority that is broad enough to address the next, potentially unforeseen, developments rather than the specific issues known to Congress when writing a statute. If statutes must specify exactly how an agency must respond to a particular set of facts, Congress is far more likely to respond to a problem that occurred in the past than prepare for the problem that is likely to occur in the future. Furthermore, if the age of a statute, the fact that Congress has debated a particular issue but not adopted a new law, or the fact that an agency's regulation departs from past practice are enough to invoke the MQD, any number of federal regulations are potentially at risk. Without clear limitations on the doctrine and the circumstances when it applies, the MQD could prevent Congress and agencies from addressing many of the most pressing challenges facing society, almost all of which will presumably have significant political or economic implications.

Importantly, the MQD precedent does not say that Congress cannot delegate broad authority to agencies. The holdings only find that in each instance Congress *had not done so* through existing statutes. The question remains: If Congress does indeed intend to authorize future agency action to respond to unforeseen circumstances, how can it "speak clearly" enough to ensure that the intent to grant discretion to agencies survives judicial review? Until courts provide clarity, it will be far more difficult for the federal government to protect the public from risks created by complex, dynamic challenges.