Regulatory Diffusion

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REGULATORY DIFFUSION

Jennifer Nou & Julian Nyarko†

Abstract. Regulatory diffusion occurs when an agency adopts a substantially similar rule to that of another agency. Indeed, regulatory texts proliferate just like other forms of law like constitutions, statutes, and contracts do. While this insight has been explored across countries, this dynamic also occurs closer to home: American administrative agencies regularly borrow language from one another. By our measure, in recent years, agencies reused one out of every ten paragraphs of the Code of Federal Regulations from another rulemaking. These insights are timely given a recent Supreme Court decision calling for judges to engage in less deferential regulatory interpretation. As a result, there is newfound significance as to questions of how legislative rules are written and why.

This Article explores the descriptive and normative implications of regulatory diffusion. The empirical analysis reveals a fairly steady rate of text reuse, with a notable increase during the Trump Administration—perhaps the result of well-documented staffing problems and vacancies. More generally, both the number of borrowing and lending agencies has increased, with a relatively small number of agencies borrowing text from an increasingly larger group. In other words, regulatory text has diffused from more agencies. This behavior appears to vary by whether the agency is executive or independent in nature.

These findings raise important questions about whether such diffusion is desirable, as well as how to interpret the regulations that result. To assess the tradeoffs, we propose that rulewriters should be required to explain why they are emulating other regulatory texts to allow executive branch oversight over the practice. We also argue in favor of the in pari materia canon—the idea that similar regulations should be interpreted similarly by judges—and propose ways for judges to decide when and how to apply it.

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Introduction

Regulatory texts, like other forms of law, diffuse. They migrate across administrative agencies in substantially the same form. Agencies, in other words, borrow rules from one another. The broader phenomenon of legal diffusion is usually studied as a comparative, international matter. Laws are frequently “transplanted” to foreign arenas. Developing countries, this literature suggests, borrow laws from more developed countries to signal legitimacy, garner prestige, or preserve resources. Sometimes regulations are mimicked to promote harmonization between member states, such as within the European Union. Other times regulatory standards in one country are adopted abroad to indicate quality or safety to consumers.

Regulatory diffusion, it turns out, also occurs closer to home. American administrative agencies borrow the texts of rules from one another. Such behavior is not merely a cost-saving resort to boilerplate templates, which are commonly used when agencies draft responses to executive orders. Rather, agencies issuing separate regulations reuse substantive and procedural regulatory

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3 See, e.g., Jonathan M. Miller, A Typology of Legal Transplants: Using Sociology, Legal History and Argentinian Examples to Explain the Transplant Process, 51 AM. J. COMP. LAW 839, 846 (2003) (noting that “it is common for developing countries and smaller industrialized countries to borrow the environmental, health and safety legislation and regulatory standards of large developed countries” since it “is simply too expensive and a waste of resources for those countries to develop their own standards, so they turn to a country with prestige in the legislative field”).


provisions. One provision is promulgated by an agency, only to be later adopted in substantially the same form by another. The same provision can be mimicked over decades by dozens of disparate agencies.

Sometimes this practice is required by Congress or the President. Many times, however, it is not: Agencies, in their discretion, choose to import regulatory language from another agency’s rulemaking. Consider some examples:

- In 1980, the Department of Education (ED) promulgated Title IX regulations regarding nondiscrimination on the basis of sex. Two decades later, twenty-one agencies decided to substantially copy most of ED’s final regulations on Title IX. In their “common rule,” they cited several reasons for doing so, including “the history of public participation in the development and congressional approval of ED’s regulations”; ED’s “leadership role” in regulatory enforcement; the public’s pre-existing familiarity with the regulations; and an interest in maintaining regulatory consistency.

- In 2001, President George W. Bush issued Executive Order 13,199 calling for greater inclusion of faith-based organizations in federal

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7 See infra Part I.B.
8 Id.
9 See Keith Bradley, The Design of Agency Interactions, 111 COLUM. L. REV. 745, 751 (2011) (noting that the Securities and Exchange Act directs “agencies to make regulations that are ‘substantially similar’ to those of the SEC”). As a result, “all of these agencies have copied the SEC’s regulations, and when the SEC amends its regulations, the banking regulators usually follow.” For discussion of presidential coordination, see infra Part II.A.
10 ED was the successor agency to the Department of Health, Education and Welfare, which had originally promulgated the same regulations in 1975. Those regulations were later adopted by ED when it splintered off in 1980. See Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance. 65 FR 52,858-52,859 (Aug. 30, 2000). Title IX provides that “No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving Federal financial assistance,” with certain exceptions. 20 U.S.C. 1681(a).
12 Id. At the same time, the agencies took care to note that their regulations were “not identical to ED’s regulations” in every respect. See Nondiscrimination on the Basis of Sex in Education Programs and Activities Receiving Federal Financial Assistance, 64 FR 58569-58572 (emphasis added). For example, they noted, “the common rule includes modifications to be consistent with Supreme Court precedent and statutory changes that are not yet reflected in the Department of Education’s regulations. In addition . . . the participating agencies have made a few additional revisions to the common rule in response to public comments.” See Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 65 FR 52,858-52,859 (2000).
grants. The challenge was how to do so in light of competing Establishment Clause concerns. Over the following years, a number of agencies promulgated rules allowing grant funding, but not for “inherently religious activities such as religious worship, instruction or proselytization.”

In 2010, however, President Barack Obama’s Advisory Council on Faith-Based and Neighborhood Partnerships recommended that agencies replace the term “inherently religious” because the term was confusing and did not sufficiently indicate the boundaries of government subsidies. That same year, President Obama issued Executive Order 13,559 using the phrase “explicitly religious activities” though it did not specifically require any changes. Six years later, nine large federal agencies jointly changed their funding restrictions to now cover “explicitly religious activities,” as well as “proselytization” and “religious instruction.” Other agencies followed the next year, even after President Obama left office.

- In 2015, the Department of Commerce proposed revisions to its Export Administration Regulations (EAR) to “enhance clarity and consistency” with the terms of the International Traffic in Arms Regulation (ITAR), which is administered by the Department of Commerce.

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18 See, e.g., Revolving Loan Fund Program Changes and General Updates to PWEDA Regulations, 82 Fed. Reg. 57034, 57051 (Dec. 1, 2017) (noting the change was made “to be consistent with recent rulemakings by nine other Federal agencies.”).
The proposed rule imported the definitions of a number of terms from the ITAR.\textsuperscript{19} Because the two sets of regulations were issued pursuant to different statutes and administered by different agencies, the proposed rule noted that “each set of regulations” had “evolved separately over decades without much coordination between the two agencies regarding their structure and content.”\textsuperscript{20} As a result, they often used “different words, or the same words differently, to accomplish similar regulatory objectives.”\textsuperscript{21} So, to “facilitate enhanced compliance while reducing unnecessary regulatory burdens,” the EAR copied the ITAR definitions rather than rework definitions in concert with the other agency.\textsuperscript{22}

In this manner, regulations diffuse across different agencies, at different times, and through different channels. While one might expect this dynamic to occur only between agencies sharing statutory authorities, it occurs between agencies authorized under different statutes as well.

This phenomenon raises a host of questions, both descriptive and normative: What motivates the borrowing of regulatory texts? Do drafters simply seek to save time and resources? Or are these efforts to standardize regulatory language and reduce compliance costs? Through what mechanisms does diffusion occur: interagency working groups, staff migration, centralized coordination? Are some agencies more influential leaders in drafting regulatory texts than others? More broadly, what networks exist across agencies when writing rules? And what are the implications, if any, for regulatory process and interpretation?

These inquiries lie at the intersection of a number of rich literatures. Comparative scholars, as mentioned, have long examined how and why laws are “transplanted” across different jurisdictions.\textsuperscript{23} Some of this work studies the migration of legal rules without regard to their form, whether case law, statutes,

\textsuperscript{20} \textit{Id.} The number imported definitions for terms including: “technology,” “required,” “peculiarly responsible,” “proscribed person,” “published,” results of “fundamental research,” “export,” “reexport,” “release,” “transfer,” and “transfer (incountry).” \textit{See id.}
\textsuperscript{21} \textit{Id.} at 31505-06.
\textsuperscript{22} \textit{Id.} at 31506.
\textsuperscript{23} \textit{Id.} at 31505; \textit{see also} Revisions to Definitions in the Export Administration Regulations, 81 Fed. Reg. 35586, 35587 (June 3, 2016) (to be codified at 15 C.F.R. pts. 734, 740, 750, 772).
\textsuperscript{24} \textit{See Watson, supra} note 2. One vein of this work, for example, compares civil and common law systems, with some finding that corporate laws disperse from core to periphery countries within those systems. \textit{See, e.g.,} Spamann, \textit{supra} note 1 at 1816 (empirically observing the “diffusion of law along legal family lines”).
or otherwise. Social scientists have also long studied the broader notion of “policy diffusion,” the “spread of [policy] innovations from one government to another. Work in this area has mainly focused on policy choices adopted by legislative bodies and how they spread, “while ignoring the equally important decisions made by executive agencies.” Relatively, some have focused more specifically on the extent to which state statutory texts are “reused” or copied verbatim by other state legislatures. Contract law scholars, for their part, have long studied the use of boilerplate and drafting templates—how copied contractual terms proliferate and through what channels.

These themes have yet to be explored in the context of U.S. administrative agencies. One reason may be the previous regime of strong judicial deference to agency regulatory interpretation. As a result, there was little need to consider how and why agencies draft regulations. That is no longer the case. We suspect

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25 See, e.g., id. at 1818 (“systematically trac[ing] visible foreign influence—citations, the involvement of foreign-trained lawyers, and evidence of outright copying of statutes—in the major corporate law treatises and the drafting histories of securities and corporate law statutes of thirty-two peripheral and semi-peripheral countries . . . .”).


27 See Charles R. Shippan & Craig Volden, Policy Diffusion: Seven Lessons for Scholars and Practitioners, 72 PUB. ADMIN. REV. 788, 793 (2012) (observing that “nearly all policy diffusion studies explore legislative adoption by state or national governments, while ignoring the equally important decisions made by executive agencies”).


30 See Bowles v. Seminole Rock & Sand Co., 325 U.S. 410, 414 (1945) (calling for judges to give “controlling weight” to an agency interpretation so long as it is not “plainly erroneous or inconsistent with the regulation.”); Auer v. Robbins, 519 U.S. 452, 461 (1997). (applying the same standard).

31 See infra Part III.B.
that another reason is the until-recent lack of access to machine-readable versions of the Federal Register. Earlier work on agency behavior used data drawn almost exclusively from the Unified Agenda — a semiannual publication of agencies’ planned activities. The Unified Agenda essentially consists of self-reported data on planned regulatory activities, which some research now suggests are incomplete. Agencies, however, are legally required to publish their final rules in the Federal Register. Data drawn from the Federal Register thus provide the most comprehensive portrait of agency rulemaking available.

At the same time, administrative law scholars have increasingly studied the ways in which agencies relate to each other. This work has documented that these interactions can be demanded and designed by the President or Congress. Other

32 See Ed O’Keefe, Federal Register Makes Itself More Web-Friendly, WASH. POST, (October 5, 1999), https://www.washingtonpost.com/wp-dyn/content/article/2009/10/04/AR2009100402533.html (announcing, in October 2009 that the Federal Register “will be available at Data.gov in a form known in the Web world as XML, which allows users to transport data from a Web site and store it, reorganize it or customize it elsewhere”).


36 5 U.S.C. § 553(d) (2000) (“The required publication or service of a substantive rule shall be made not less than 30 days before its effective date.”).

times, these interactions are “interagency,” that is, decisions by agencies themselves to coordinate or clash. Much of this nuanced scholarship illuminates through extended case studies and examples. In addition, it often focuses on formal legal mechanisms, such as statutes or executive orders, interagency memoranda, and jointly issued policy statements and guidelines.

While these approaches have yielded rich insights, they have granted less attention to patterns of agency interaction, informal relationships, and the ways in which inter-agency connections are structured. They underappreciate, in other words, the importance of agency networks. As a result, it may be more difficult to understand how agencies exercise power by virtue of their positions within networks and how cohesive those networks are. For example, some agencies are highly influential rule drafters: when they write a regulation, other agencies follow. Similarly, some agencies are central network players and interact with a great number of other agencies. Our analysis begins to shed light on some of these and related dynamics.

More broadly, this Article considers the phenomenon of regulatory diffusion as both a positive and normative matter. Part I analyzes twenty years of data drawn from the Federal Register using text and network analysis. These tools have long been staples of social science and public administration research, but

38 See Jason Marisam, Interagency Administration, 45 ARIZ. ST. L.J. 183, 184-85 (2013) (“Today, agencies routinely solicit input from other agencies, and agencies routinely offer their recommendations unsolicited when doing so is in their interests.”).
40 Freeman & Rossi, supra note 37, at 1161; see, e.g., Teresa M. Schwartz, Protecting Consumer Health and Safety: The Need for Coordinated Regulation Among Federal Agencies, 43. GEO. WASH. L. REV. 1031, 1033-41, 1054-62 (1975), Jason Marisam, Duplicative Delegations, 63 ADMIN. L. REV. 181, 190-98 (2011).
41 See John W. Patty and Elizabeth Maggie Penn, Network Theory and Political Science in THE OXFORD HANDBOOK OF POLITICAL NETWORKS (eds. Jennifer Nicoll Victor, Alexander H. Montgomery, and Mark Lubell 147 (2017) (“The fundamental allure of network theory is its ability to describe and analyze the structure of connections between units . . . in a rigorous but flexible way”).
42 See infra Part I.B.2.
43 Id.
have yet to be deployed robustly in the administrative law literature.45 Our findings suggest that the share of reused texts has increased over time, from less than 3% in 2000 to more than 10% by 2020—more than a threefold increase. Strikingly, as of 2020, one out of every ten new regulatory paragraphs was borrowed from a previously published regulation.

In addition, both the number of borrowing and lending agencies has increased. The rise in lending agencies is much steeper than the increase in borrowing agencies. This suggests that the network of diffusion has dispersed through the years, with a relatively small number of agencies borrowing text from an increasingly large group of agencies. In other words, regulatory text has diffused from more agencies over time. Some leaders—agencies whose texts are often copied by others—include the Department of Treasury and Office of Management and Budget. The agencies that follow, or borrow, the most include the Department of Homeland Security and the Department of Agriculture.

Moreover, this Article also reveals that independent agencies borrow disproportionately from other independent agencies, while executive agencies do not. Perhaps independent agencies “trust” texts from their counterparts as somehow more worthy of diffusion, more expert, and less subject to political change compared to executive agencies. After all, independent agencies are structured to be more isolated from presidential whim. Alternatively, independent agencies as a group may share more common regulatory problems or challenges relative to more disparate executive agencies.

Part II turns to potential explanations for some of these trends and findings. It considers possible reasons why drafting agencies would want to borrow texts from another agency—springboards for various hypotheses we hope to test in future work. For example, diffusion may occur because agencies have learned from other agencies about successful policies or drafting choices. Alternatively, perhaps regulatory drafters are driven by resource constraints, in which case one would expect to see variation with changes in budgets and staffing. Another possibility is that interest may play a central role in drafting and disseminating regulatory text—much as they do in the legislative arena. Drawing on interviews with government officials, we also consider some of the channels through which regulations diffuse. We identify informal methods of interaction between agencies and consider the behavior and incentives of regulatory drafters.

Finally, Part III considers some of the normative implications of diffusion on regulatory process and interpretation. In particular, it argues that agencies should be under a duty to explain why they borrowed a text from another agency’s rulemaking. This explanation should then be subject to judicial and political oversight to ensure that the text reuse occurred for desirable rather than

45 See, e.g., Verity Winship, Enforcement Networks, 37 Yale J. Reg. 274, 276 (2020). While network analysis is just beginning to make its way into administrative law scholarship, there has been some excellent recent work using text analysis on the Federal Register. See, e.g., Cary Coglianese, Gabe Scheffler and Daniel Walters, Unrules, 73 Stan. L. Rev. 885, 893 (2021).
undesirable reasons. Moreover, the question of how agencies draft regulations has newfound significance given a recent Supreme Court decision, which effectively calls for judges to interpret regulatory texts with less deference to the agency. As a result, judges will be increasingly faced with the question of whether to interpret similar regulations issued by different agencies in para materia, that is, by reference to one another. This Part argues that the canon is appropriate in the regulatory context and proposes some ways for judges to decide when and how to apply it. In addition, the analysis considers the tradeoffs between different mechanisms that agencies could use to update policies created under borrowed texts.

I. Diffusion Trends

Regulatory diffusion, as understood here, refers to the use of substantially similar codified texts across agencies. With this focus, we are interested in two related phenomena: (1) the interagency spread of policy choices and (2) the reuse of regulatory language. Policy diffusion, of course, can occur even when agencies write their regulations differently. When agencies reuse regulatory texts from other agencies, however, they are often adopting the same policies reflected in them. In other words, regulatory texts serve as an “aggregate representation” of various dimensions including the “domain of the policy, the ideological position enacted by the policy, the level of specificity in the policy enactment, and several other salient features of policy that are communicated through the text.” To be sure, when the regulatory text is ambiguous, some of the policy choices contained therein are as well. What is important to appreciate, however is that the phenomenon we study here implicates both agency policy choices as well as their drafting decisions.

Regulatory diffusion, in turn, can occur in different forms: through joint, common, or what we will call “successive” rulemaking. Sometimes, agencies issue “joint” regulations, resulting in a single rule signed by the relevant agencies and codified in the same place in the Code of Federal Regulations (CFR). In

47 Id.
48 At issue is the operative text as codified in the CFR, not the preambles and analyses accompanying it.
50 Freeman’s & Rossi, supra note 37, at 1165-66 (describing “joint rules” as “typically [when] two or more agencies agree[] to adopt a single regulatory preamble and text”). “The agencies might produce either a single rule with a series of signature pages from the participating agencies, which is codified in one place in the Code of Federal Regulations (a “joint” rule).” Id. at 1166. Consider a 1995 rule issued by the Federal Reserve and the Department of Treasury, requiring enhanced recordkeeping related to certain wire transfers. Amendment to the Bank Secrecy Act Regulations
these instances, the regulatory text diffuses during the drafting process, culminating in a single rulemaking. Agencies also issue highly similar rules that are published in their respective sections of the CFR—often referred to as “common” rules. Like joint rules, the diffusion of drafting choices can occur prior to the issuance of the common rule.

Of most interest here, agencies can also reuse the texts of published rules from other agencies. In this “successive” context, agencies mirror the texts of other agencies months or years after they were first promulgated. In the Title IX rulemaking discussed above, for instance, recall that a group of agencies copied the Department of Education’s rules more than twenty years after they were first promulgated. This form of diffusion is perhaps the most striking, since it suggests channels of interagency interaction beyond the more familiar mechanisms of interagency working groups or centralized coordination through the Office of Information and Regulatory Affairs.

In this Part, we consider how to observe and measure similarity between regulatory texts. Using that measure, we then present an initial portrait of regulatory diffusion across agencies and over time. Our analysis suggests that the reuse of regulatory text is a phenomenon that has drastically increased in significance over time. Not only has the share of all reused text increased over time, but so have the number of agencies that participate in text reuse.

A. Measuring Diffusion

Until recently, empirical research on legal diffusion has relied on hand-coded datasets of limited scope. Specifically, a jurisdiction’s adoption of another’s policy was coded as evidence of diffusion. This approach is necessarily limited in scope, however, given inevitable limits on human capital and resources. By contrast, we take an automated, “text-as-data” approach to the analysis of regulatory text. This approach vastly increases the volume of data available, as well as the level of sophistication with which it can be analyzed.

Relating to Recordkeeping for Funds Transfers and Transmittals of Funds by Financial Institutions, 60 FR 220 (January 3, 1995). While, both agencies “jointly . . . adopted a final rule,” the text was only recorded in the Treasury’s portion of the CFR. Id.

51 An illustration is the previously-described Title IX common rule issued by twenty-one agencies and then codified in their respective sections of the CFR. See supra note 11 and accompanying text. Like much else in rulemaking, these terms—“joint” and “common” rules—are not standardized. Some agencies use them interchangeably. Consider a 1994 rule issued by HUD and the Department of Agriculture. 59 FR at 22220. Under the Action header in the Federal Registry entry, the agencies list “Final common rule.” Id. The very next line, in the summary section, then states “[t]his document is the joint final rule.” Id.

52 See supra notes 10-12and accompanying text.

The first section describes our dataset and methods for identifying diffusion between agencies. The next section then provides some broad trends in the data, while shedding light on the agencies that are the most influential in providing regulatory text.

1. Dataset

Regulations must be published in the Federal Register (FR) to have legal effect. The Federal Register is the government’s official daily publication for, among other things, proposed and final rules. Those final rules are then codified into the Code of Federal Regulations (CFR) on a quarterly rotating basis by CFR title. Both the FR and CFR are electronically available in XML format. Given its more organized structure, the CFR may initially seem like the best source for tracking regulatory diffusion. The CFR contains fifty titles according to broad subject-matter categories, divided into chapters, parts, and sections. As relevant here, the sections typically contain “[o]ne provision of program/function rules.” These sections, in turn, can be broken into paragraphs separated by paragraph breaks. Thus, one could just compare changes to the CFR over time.

The Federal Register, however, has many advantages for understanding regulatory diffusion. These advantages outweigh the drawbacks, including the more discretionary ways in which agencies publish regulatory amendments in it. First, unlike the CFR, the FR provides the precise date on which a rule was

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54 Federal Register Act § 1510.
56 Specifically, the updating occurs four times a year by CFR title. About the Code of Federal Regulations, GOVINFO, https://www.govinfo.gov/app/collection/cfr (archived __).
61 Specifically, agencies that amend the CFR typically reproduce the amended text of the regulation in the FR. The text that is reproduced in the FR is commonly limited to the
published. We are thus able to determine what day text borrowing occurs, and can explore temporal variation and trends over time. Second, the CFR does not clearly designate which agencies are associated with particular rules, whereas the FR does.62 Finally, the electronic version of the FR includes rich metadata in a structured format: For example, associated agencies and sub-agencies, statutory authorities, rule summaries, and much more.63 For all these reasons, our dataset was created from the electronic version of the FR, rather than the CFR.

Specifically, we scrape the regulatory text and associated metadata for every entry published in the Federal Register over a twenty-year period, between individual paragraph that has been amended. However, if an agency intends to make revisions to multiple paragraphs within a section, it lies in the agency’s discretion to instead revise the entire section and reproduce it in the FR. “For extensive changes, revise the text in full rather than prepare fragmentary amendments. This will reduce the likelihood of mistakes and the reader will then have the complete text of the amended unit.” See Document Drafting Handbook ch. 3.14, p.3-37. Although the handbook directs agencies to revise sections in full, we state that determining the unit of revision lies in the agencies’ discretion since they can determine whether the changes are “extensive” enough to warrant a full revision.

This implies that not every paragraph appearing in the FR was necessarily subject to a textual amendment. We note, however, that this does not affect our analysis of regulatory diffusion beyond the limitations discussed below, infra Part I.B.1 In addition, we note that, under exceptional circumstances, amendments to the CFR are not accompanied by a reproduction of the regulatory text in the FR at all. In particular, if the amendment is a minimal revision, agencies can fully detail their amendment in the amendatory instructions associated with each amendment. To give an illustrative example, in 2002, the Department of Health and Human Services amended § 419.66 using the following instructions: “In § 419.66, paragraph (c)(1) is amended by adding the phrase ‘or by any category previously in effect’ after ‘categories’ and before ‘and.’” Medicare Program; Changes to the Hospital Outpatient Prospective Payment System and Calendar Year 2003 Payment Rates; and Changes to Payment Suspension for Unfilled Cost Reports, 67 Fed. Reg. 66,717, 66,813 (Nov. 1, 2002), at https://www.govinfo.gov/app/details/FR-2002-11-01/02-27548 (download pdf, search pdf page 97). These examples, however, are exceedingly rare. Indeed, we confirm that 97.1% of amendments reproduce at least the amended paragraph in the FR.

62 Govinfo, Federal Register, 1936 to the present, https://www.govinfo.gov/help/fr (describing how the “Table of Contents and Preliminary Pages” section of the “Federal Register contains a comprehensive alphabetical listing by agency name of all documents in the issue.”).

63 In addition to the text of the paragraph, we collect additional information. This data includes (1) the part, title and section number of the amended text; (2) the number of words of the regulatory text; (3) the names of all the participating agencies and subagencies; (3) the statutory authority; (4) the subject; (5) the amendatory instructions (a brief description summarizing amendments); (6) the summary description; (7) the publication date; and (8) the heading where available. Based on the number of participating agencies, we further determine whether (9) the amendment occurred as part of a joint rulemaking. Based on the summary text, we determine whether (10) the amendment to the CFR is a republication of a previously existing rule. We do this simply by looking for the string “republish” in the lowercased summary text.
January 1, 2000 and December 31, 2020. We isolate those final rules that amend regulatory text in the CFR, which yielded a total of 36,042 final rules during our period of observation. However, the appropriate unit of analysis is not necessarily the entire rule itself, which can vary greatly in length and scope. When two rules exhibit text reuse, only certain portions are usually copied from the other. So, by splitting the rule into paragraphs, a practice consistent with previous work in the literature, we are able to specify a finer level of granularity at which to identify text reuse. Using larger units of analysis such as the section or part, by contrast, would risk missing meaningful examples of diffusion.

Note that this measure does not capture all instances of regulatory borrowing, since an agency could simply cross-reference another agency’s regulation rather than incorporate the text into its own. However, this practice of cross-referencing is explicitly prohibited by regulation, except for a few

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64 Every entry in the Federal Register API includes a url referring to the associated xml file. We wrote a scraper to automatically extract the text and other information from these xml files. We obtain the metadata through the Federal Register API, available here: https://www.federalregister.gov/developers/documentation/api/v1.

65 We first started with all of the entries under the “Rule” designation. In total, this process yields 77,944 entries. However, not every entry designated as a “Rule” enters or amends the regulatory text in the CFR, such as interpretive rules. In addition, many amendments to the CFR are limited to a change in the statutory authority and not the actual regulatory text.


68 Inter-agency cross-referencing is distinct from the phenomenon known as “incorporation by reference.” See Emily S. Bremer, Incorporation by Reference in an Open-Government Age, 36 HARV. J.L. & PUB. POL’Y 131, 133 (2013) (defining “incorporation by reference [as] . . . the practice of codifying material published elsewhere by simply referring to it in the text of a regulation.”). Sidney A. Shapiro, Outsourcing Government Regulation, 53 DUKE L.J. 389, 401-02 (2003) (noting agency incorporation by reference of codes and standards created by private organizations). This phrase generally refers to a practice in which agencies adopt standards written by private standard development organizations (SDOs). Bremer, supra at 150. These SDOs are often made up of industry participants. The most influential SDOs include the American Society for Testing and Materials, the American National Standards Institute and the American Society of Mechanical Engineers (ASME). Id. The practice has come under fire because agencies do not publish the actual texts of these standards in the CFR due to readability and copyright concerns. See, e.g., Peter L. Strauss, Private Standards Organizations and Public Law, 22 WM. & MARY BILL RTS. J. 497, 506-07 (2013). Rather, they only codify references to material published elsewhere. Id. at 507. As a result, this form of regulatory diffusion unfortunately does not appear in our dataset, which only picks up the actual texts themselves—all the more reason to support reforms designed to increase the transparency of such rules.
narrow exceptions. As the Administrative Committee of the Federal Register explained when promulgating the rule, cross-references make the Federal Register “difficult to use” since readers would have to constantly refer to different sources. They also frustrate the purpose of the Federal Register Act, which is to furnish “the orderly giving of notice” regarding regulatory requirements. Moreover, cross-references also create “procedural problems for an agency” since it would require the referencing agency to surrender control to the referenced agency over future amendments to the regulation. As a result, cross-references in the Code of Federal Regulations could become irrelevant or obsolete.

With this limitation in mind, we collect the text of every CFR amendment contained in the FR at the paragraph level. This results in 1,578,332 paragraphs. Some paragraphs, however, do not contain content relevant to our study: For example, the text may consist of framing, structural or otherwise boilerplate language—that is, language we cannot be confident reflects a conscious decision to specify the nature of legal obligations. More generally, we assume that a regulatory paragraph is significant only if it contains a substantive or procedural policy choice. So, we seek to exclude paragraphs like the following: “[F]or

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69 See 1 C.F.R. § 21.21 (“Each agency shall publish its own regulations in full text. Cross-references to the regulations of another agency may not be used as a substitute for publication in full text” unless they fall into a number of narrow exceptions). These exceptions are for when the reference is (1) “required by court order, statute, Executive order or reorganization plan”; (2) “to regulations promulgated by an agency with the exclusive legal authority”; (3) “informational”; (4) “to test methods or consensus standards”; and (5) “to the Department level from a subagency.” Id.


71 Id.

72 Id. at 12463.

73 Id.

74 Overall, our initial dataset contains 1,753,458 paragraphs. However, not all paragraphs represent meaningful text. For instance, in order to indicate that a paragraph in a series of paragraphs has not been revised agencies at times simply use the symbols “***” instead of reproducing the full text. Other revised paragraphs may consist simply of tables. We isolate paragraphs containing regulatory text by dropping from the dataset all observations for which the text contains fewer than 20 characters (including spaces) and the proportion of special characters to letters is less or equal to 30%. After this process, we are left with 1,578,332 paragraphs.


76 Our motivation for distinguishing texts stems from our study’s objective, which is to better understand the dynamics underlying the diffusion of regulatory text. It is difficult to assume intentionality or coordination when a great number of agencies adopts the same boilerplate text. It is more likely that the text reflects a standardization of necessary, structural
purposes of this section the following definitions apply,” or “the following terms used in this part are defined as follows.” Our efforts on this front are consistent with the broader diffusion literature.77

To be sure, the lines between those paragraphs we consider significant and those we do not will not always be clear; there will be borderline cases. A human cannot feasibly read and code the more than one million paragraphs in our dataset within a reasonable period of time. We thus employ a supervised machine-learning classification approach,78 which automates and disciplines the identification of significant paragraphs. We begin by hand-labeling a sample of 400 paragraphs for whether they meet our definition of significance or not. After balancing the labeled data,79 we divide it into a training set and a test set.80 We

information. Even more importantly, we are normatively interested in the spread of policy choices across agencies. We thus must exclude observations that arguably do not express a policy choice, whether a substantive or procedural legal obligation.

77 We are not the first to attempt to distinguish between different variations of relevant and irrelevant text (where “relevance” is defined relative to the purpose of the study). For instance, in a study of policy diffusion, researchers examine text reuse in bills introduced by U.S. state legislatures. Fridolin Linder et al., Text as Policy: Measuring Policy Similarity through Bill Text Reuse, 48 POLICY STUDIES JOURNAL 546, 574 (2020). In order to isolate and omit “boilerplate,” they create a formula that turns to the breadth of use across documents. Intuitively, the authors assume that text appearing in a great number of bills is indicative of boilerplate, whereas text that appears in relatively few bills suggests policy relevance. Id. at 556. They then specify a cutoff, dropping text that is used too broadly. Id. at 553. In our view, however, this approach is not suited in this specific application for two primary reasons. First, while the breadth in use likely characterizes many of our non-substantive terms, it does not fully map onto our definition of “significant” paragraphs. Second, the approach proposed by Linder et al. lacks verification. Although it might be suitable to identify some types of non-substantive text, we simply do not know whether this is the case without coding a large, random sample of paragraphs by hand and comparing the automated approach against the hand labels. At the same time, if one is willing to create a hand labeled dataset, these hand labels can be used more efficiently than to verify a rules-based classification scheme. And indeed, this is the approach we take.


79 Since we have significantly fewer substantive than non-substantive labels, the training data can be considered “imbalanced.” Imbalanced datasets can lower the classifier’s performance for the minority class, here substantive labels. We thus use the popular oversampling algorithm SMOTE to create a dataset with balanced labels. See N. V. Chawla et al., SMOTE: Synthetic Minority Over-sampling Technique, 16 J. ARTIFIC. INTELL. RES. 321, 326-31, 352 (2002).

80 The training set consists of 80% of the labeled paragraphs, while the test set consists of 20% of the labeled paragraphs.
use the training set to train and compare four popular machine learning classifiers, the details of which are included in the appendix.\textsuperscript{81}

With the trained classifiers, we predict whether paragraphs contained in the test set are significant. In a last step, we compare the labels created by the classifiers to the labels created by the human annotator. We repeat the entire process five times and compare the performance of the classifiers across iterations.\textsuperscript{82} Importantly, because the classifiers have never encountered the paragraphs in the test set during training, the process yields an unbiased assessment of the classifiers’ performance.\textsuperscript{83} Our best-performing classifier correctly predicts 83% of all texts,\textsuperscript{84} which we then use to identify all significant texts in the FR.

To further distinguish between regulatory paragraphs imposing a procedural or a substantive policy choice, we repeat the above process with a separate dataset of 699 paragraphs, hand-labeled for the existence of procedural policy choices. The classifiers trained on this latter set are even more precise, correctly predicting 93% of all texts. This process leaves us with 651,164 paragraphs, of which 63,540 (or about 10%) are procedural. More than 90% of our dataset, in other words, consists of texts regarding substantive policy choices.

\textsuperscript{81} Intuitively, each classifier can be viewed as an algorithm that automatically “reads” the text of a document and assesses how predictive certain words (or patterns of words or phrases) are for the label applied by the annotator. A naïve Bayes classifier using a multivariate Bernoulli distribution (“Bernoulli NB”), a naïve Bayes classifier using a multinomial distribution (“Multinomial NB”), an Adaptive Boosting algorithm (“ADA Boosting”), and a Gradient Boosting algorithm (“Gradient Boosting”). The details of the individual classifiers are complex and do not need to be laid out in detail. However, given that we can verify the performance of the classifiers without probing their mechanics, readers should not be deterred if the algorithms appear to be a “black box” to them.

\textsuperscript{82} More precisely, we implement a 5-fold cross validation procedure. This means that we split the labeled data into five subsets, \{\textit{subset}_1, \textit{subset}_2, \textit{subset}_3, \textit{subset}_4, \textit{subset}_5\}. We then use four of these subsets to train the classifier and one to test its performance. We repeat the step five times, each time holding back a different subset. For instance, in iteration 1, we may use \{\textit{subset}_1, \textit{subset}_2, \textit{subset}_3, \textit{subset}_4\} to train and \{\textit{subset}_5\} to test. Then, in iteration 2, we use \{\textit{subset}_1, \textit{subset}_2, \textit{subset}_3, \textit{subset}_5\} to train and \{\textit{subset}_4\} to test, and so on. The overall performance of a classifier is the performance averaged across all five iterations. We employ 5-fold cross validation to minimize the risk that the assessed performance is the consequence of a particularly unusual split of our data into a training and a test set.

\textsuperscript{83} Without a test set, machine learning classifiers often overfit. “Overfitting” means that the classifier’s predictions are influenced by random noise. For instance, if the word “labor” appears only once in a significant paragraph and never appears in an insignificant paragraph, the classifier may incorrectly assume that the word “labor” is predictive of significance, when in fact, the observed pattern was merely the result of chance.

\textsuperscript{84} We note that this performance is close to the theoretical limit, given that even two humans reading the same texts often differ on the correct label. This is also called the “Accuracy” or “Correct Classification Rate.” Other performance metrics popular in the literature on information sciences are the AUC (0.86) and the \textit{F}_1 score (0.83). Our best performing classifier is the Gradient Boosting classifier.
Table 1 below contains more information on the final dataset. The Appendix further breaks down the amount of regulatory activity by agency. Doing so reveals significant heterogeneity in activity levels, with the Environmental Protection Agency and the Department of the Treasury drafting the most regulatory paragraphs by a significant margin.\textsuperscript{85}

Table 1. Frequencies in the Federal Register Dataset

<table>
<thead>
<tr>
<th>Unit</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rules</td>
<td>27,714</td>
</tr>
<tr>
<td>Sections</td>
<td>108,365</td>
</tr>
<tr>
<td>Paragraphs</td>
<td>651,164</td>
</tr>
<tr>
<td>Agencies</td>
<td>134</td>
</tr>
<tr>
<td>Subagencies</td>
<td>179</td>
</tr>
</tbody>
</table>

2. Identifying Text Reuse

The next methodological challenge is to measure regulatory paragraph reuse between different agencies. We must have a way of assessing how alike two texts are, what is known as a “similarity measure.” Among the measures that exist in the literature, we choose the “Jaccard similarity,” which is an established measure that is computationally feasible given our large dataset as well as amenable to a number of other techniques designed to locate matching pairs efficiently.\textsuperscript{86} We begin by splitting each paragraph into sequences of five consecutive words (or “5-gram shingles”). To illustrate, consider the sentence:

\textit{The quick brown fox jumps over the lazy dog}

This sentence can be split into the following five-word sequences:

\textsuperscript{85} The EPA promulgated 84,284 paragraphs and the Department of Treasury 84,172 paragraphs. After that, the Department of Agriculture promulgated 55,934 paragraphs.

\textsuperscript{86} See the appendix for more details. Although the Smith-Waterman local alignment algorithm is particularly popular in the literature on text reuse, see, for example, John Wilkerson, David Smith & Nicholas Stramp, \textit{Tracing the Flow of Policy Ideas in Legislatures: A Text Reuse Approach}, 59 Am. J. Polit. Sci. 947 (2015); and Linder et al., \textit{supra} note 48, at 550-51., it is not conceptually compatible with very large corpora, and thus should not be used in our context.
1. the quick brown fox jumps
2. quick brown fox jumps over
3. brown fox jumps over the
4. fox jumps over the lazy
5. jumps over the lazy dog

Our similarity measure computes how many of these five-word sequences overlap between two paragraphs and divides that by the number of unique five-word sequences in these paragraphs. For instance, if eight out of ten sequences are identical, then their Jaccard similarity is 0.8. In effect, our approach assigns two paragraphs a high similarity score if they use the same words in the same word order. In contrast, the similarity score is lower if the consecutive number of similar words is smaller.87

Having scored pairs of regulatory paragraphs in this way, we must now ask what level of similarity between the paragraphs should count as an instance of diffusion. On one end of the spectrum is a similarity score of 1 representing exact copying-and-pasting between two agencies. At this level, the two paragraphs between agencies are indistinguishable. Following the lead of one of our interview subjects, it might be useful to refer to this approach as indicating that an agency used a previous rule as an exact “template.” In these cases, a rule drafter took a preexisting rule and simply copied it verbatim into a new rulemaking.88

Below this threshold, however, are a number of instances where it is almost certain that the drafter used a previous rule, if not as a template, then certainly as a “model.”89 While the paragraph may not be an exact copy, it is sufficiently similar as to reflect one agency’s clear use of another agency’s rule as the basis of its own. There may be very slight word variations, but the relationship between the two pairs is virtually unmistakable. There is still a substantial amount of text reuse and thus “copying” in a broader sense. Because our normative concerns are matters of degree, that is, they become stronger the more text diffuses, we aim to include pairs that reflect agency behavior looking to previous rules as both models and templates.

Upon manual inspection of paragraphs across the range of similarity scores, we determine that a similarity score of 0.5 and greater makes it almost impossible to assume that the agency did not model its paragraph after an existing text. In contrast, for similarity scores below 0.5, although some portions of text may overlap, it is increasingly difficult to assume that one paragraph served as a

87 Because computing the Jaccard similarity explicitly for every pair of two paragraphs would require making 212 billion comparisons and because this is computationally infeasible, we further employ techniques from big data analysis to only compute the Jaccard similarity for those pairs of contracts that are likely similar. Details on this process are included in the appendix.
88 Interview with Daniel Cohen, Assistant General Counsel for Regulation, U.S. Department of Transportation (Feb. 3, 2021) (notes on file with author).
89 Id.
model for the other. Consequently, we define as our threshold for text reuse a similarity score of 0.5. To illustrate the textual difference at this threshold, consider the below example in which we underline all discrepancies between the paragraphs:

**Sample Paragraph 1:** The disclosure must contribute to the understanding of a reasonably broad audience of persons interested in the subject, as opposed to the individual understanding of the requester. A requester’s expertise in the subject area as well as his or her ability and intention to effectively convey information to the public will be considered. It will ordinarily be presumed that a representative of the news media satisfies this consideration.\(^90\)

**Sample Paragraph 2:** The disclosure must contribute to the understanding of a reasonably broad audience of persons interested in the subject, as opposed to the individual understanding of the requester. A requester’s expertise in the subject area as well as the requester’s ability and intention to effectively convey information to the public must be considered. **TVA will presume** that a representative of the news media will satisfy this consideration.\(^91\)

It is fairly clear that the agency drafting Sample Paragraph 2 looked to Sample Paragraph 1 as a model. There is a substantial amount of copied text along with only minor and non-substantive word discrepancies.

Although some may be skeptical about the subjectivity of our decision, the choice of the exact threshold has little consequence in practice. Consider Figure 1 below, which plots the distribution of similarity scores across all pairs that we analyze.\(^92\) Observe that the plurality of paragraph pairs in our dataset have a similarity of exactly 1.\(^93\) In addition, there are no remarkable features of the distribution around our threshold of 0.5. Hence, whether we set the specific threshold a bit above or below 0.5 should not significantly affect our results. That said, we have also tested the robustness of our main findings to alternative thresholds.\(^94\)

\(^90\) https://www.federalregister.gov/documents/full_text/xml/2014/02/19/2014-03549.xml

\(^91\) https://www.federalregister.gov/documents/full_text/xml/2017/10/05/2017-21204.xml

\(^92\) We plot the range of similarity scores from 0.45 to 1. To understand why, recall that we employ a probabilistic process that captures pairs with a similarity of 0.5 with a probability of 1, but pairs with a smaller similarity at lower probability. Hence, it would be misleading to plot the entire range of similarity scores from 0 to 1, because low frequencies at small similarity scores could simply be the result of our probabilistic procedure and not the fact that they are indeed uncommon. At 0.45, the probability for a pair to make it into our dataset is 0.98.

\(^93\) More precisely, 46\% of pairs have a similarity of 1.

\(^94\) The general patterns we detail in Figure 3 and surrounding text are substantively similar for all thresholds between 0.5 and 1.
Finally, a few other features of our dataset also require brief consideration to isolate our phenomenon of interest. First, we assume that each paragraph can be borrowed only once per agency pair. If an agency borrows from another agency twice, we assume that the second time is a case of reusing its own
language rather than that of another. Next, as previously mentioned, agencies can issue “joint” or “common” regulations resulting in a single rule signed by the relevant agencies. The nature of these rulemakings makes it unclear how much text reuse there is between agencies as opposed to consensus drafting or top-down direction by a coordinating official. Relatedly, because the rule results in a single, unified text, it is difficult to ascertain which agencies are leaders or followers. For these reasons, if the pair of paragraphs includes at least one text published by a number of agencies at the same time, we include one observation for each agency that participated in the rulemaking process.

Regulatory diffusion also occurs between bureaus and offices within agencies over time. For instance, Immigration and Customs Enforcement (ICE) could reuse regulatory text from the Transportation Security Administration (TSA)—both are sub-agencies within the Department of Homeland Security (DHS). While this dynamic is interesting, it is arguably much easier to explain than inter-agency diffusion, which is the topic of focus: Many agencies, for example, have central, coordinating offices that can diffuse regulatory text across sub-agencies or otherwise keep templates on file. In addition, our dataset is missing the subagency identity for many entries. For these reasons, we exclude all instances of diffusion that occur within the same agency, focusing instead on inter-agency diffusion.

95 For instance, it might happen that agency $A_2$ publishes regulatory language in the FR that resembles that of $A_1$ twice, once in 2010 and again in 2015. In this case, we would only include the pair $\{A_1, A_2\}^{2010}$. not $\{A_1, A_2\}^{2015}$. Again, our rationale is that once $A_2$ has reused the regulatory text of $A_1$ in 2010, it is sensible to assume that any future reuse is $A_2$ borrowing from what is now its own regulatory language, rather than using the regulation of $A_1$ as a model for a second time.

96 For instance, if an agency $A_3$ borrows text from a joint rule enacted by agencies $A_2$, $A_3$ and $A_4$ collectively, then our dataset includes three observations: $\{A_1, A_2\}$, $\{A_1, A_3\}$ and $\{A_1, A_4\}$. At the same time, we do not count pairs of text reuse that occur between two agencies that both were part of the same joint rulemaking process. For instance, in our example above, we do not include $\{A_2, A_3\}$, $\{A_2, A_4\}$ and $\{A_3, A_4\}$ into our dataset. From an empirical perspective, we note that pairs in which both agencies are part of the same rule outnumber pairs where each agency is part of a different rule by a factor of 8. Thus, if we were to add these pairs to our dataset, our analysis would also largely reduce to a study of joint and common rulemakings, which are not the only dynamics we are interested in. See, e.g., Freeman & Rossi, supra note 37, at 1166–73.


98 Some instances of text reuse between agencies occurs because Congress has created a new agency that assumes the functions of pre-existing agencies. DHS, for example, incorporated many of the tasks of the U.S. Coast Guard (previously within the Department of Transportation), U.S. Customs and the U.S. Secret Service (both within the Department of Treasury), and Immigration and Naturalization Service (within Department of Justice), among others. When DHS started operations in 2013, it simply republished many of the rules of these predecessor agencies. We exclude these instances for reasons similar to excluding intra-agency diffusion: They can, in some sense, be viewed as instances of agencies copying from themselves. When republication occurs, the new agency’s subunits are copying texts from previous subunits that had been housed in a different agency. For this reason, we exclude

Electronic copy available at: https://ssrn.com/abstract=4027009
After omitting the above categories, we end up with 36,146 observations, where each observation is a pair of two texts that have been published in the FR by different agencies. These observations form our core dataset.

B. Analysis

To generate systematic insights into patterns of text reuse, it is helpful to conceive of drafting agencies as a network. In that network, agencies can be thought of as nodes, or vertices, and instances of text reuse can be thought of as edges, or links, that connect these nodes. These links represent relationships between agencies that arise because of their shared regulatory paragraphs. On the one hand, this lens allows for observations about the structure of connections between agencies. These sustained interactions suggest synergies between agencies that may otherwise be unexpected. On the other hand, it also allows for more in-depth analyses between clusters of agencies or between those at the center and the periphery. To help visualize this, Figure 2 below plots two such networks. The left panel depicts text reuse between all agencies in the year 2005. The right panel depicts text reuse in the year 2020.

**Figure 2: Network Plots of Regulatory Diffusion, 2005 and 2020**

First observe that the diffusion network in the right panel contains many more edges than the network on the left. Specifically, the number of edges increased from 145 to 734. Second, there are many more agencies that are connected to other agencies by at least one edge. Together, these findings suggest that the prevalence of text reuse, as well as the number of agencies and agency-republished paragraphs from the dataset by dropping those rules with summaries indicating that the rule has been republished. Of course, if an agency has not specified that the rule has been republished (even though it has), we are unable to drop it.


100 A useful analogy may be the network analysis of judicial citation practices to understand what sources judges were drawing from when making decisions. *Id.* at 548-51.

101 *Id.* at 543.
relationships affected by text reuse, has increased markedly over the past fifteen years.

While network plots help in uncovering these overall, systematic trends, they also raise many additional questions: How significant is the phenomenon of text reuse to the entire system of rulemaking? How did patterns change year-to-year in our dataset? And who are the most influential agencies in the network? In the following Subpart, we attempt to shed light on these and other questions.

1. Scope

To examine how significant the phenomenon of regulatory text reuse is and how its significance has changed over time, we begin by considering how much of the language in the CFR is original to the agency and how much of it is simply a version of pre-existing regulatory text. We thus compute the number of paragraphs in the CFR that have been reused as a fraction of all paragraphs appearing in the CFR over time.\(^{102}\)

**Figure 3: Reused text as a fraction of all paragraphs, 2000 to 2020**

![Figure 3](https://ssrn.com/abstract=4027009)

Figure 3 plots the yearly number of shared paragraphs over time. A blue dashed regression line indicates linear time trends, with the grey-shaded area surrounding it representing 95% confidence intervals of the linear trend. Note that the share of reused paragraphs increases over time, from less than 3% in the year 2000 to more 10% by 2020: a relative increase of more than 300%. Put differently, as of 2020, one out of every ten new paragraphs in the CFR has been borrowed from pre-existing text.

\(^{102}\) Technically, only paragraphs that appear in full text in the FR are included in our analysis.
As Figure 3 suggests, the rate of text reuse was particularly high in 2017—the first year of the Trump Administration. Manual inspection reveals that this spike reflects a particularly high count of reused paragraphs103 combined with a decrease in overall regulatory activity.104 In other words, the rate was higher in that year because agencies were both borrowing more texts while promulgating a smaller number of new regulatory paragraphs. This finding is consistent with two documented observations about the start of the Trump Administration: first, the slow-down in regulatory activity and, second, the short staffing in agencies.105 The slowdown likely explains the decrease in new regulatory paragraphs, while the decrease in administrative capacity may have precipitated more borrowing from pre-existing rules.

The general upwards trend in Figure 3, in turn, may reflect a number of different explanations, which are difficult to disentangle. First, it could reflect the choices of the Trump Administration, as just discussed. The magnitude of the increases in borrowing rates during those years could increase the average rates over time. Alternatively, the trend could also reflect a genuine overall change in agency behavior over time, that is, a decision to borrow regulatory texts at a higher rate. With the historical decrease in agency budgets,106 agencies may increasingly turn to the strategy of text reuse as a way to maintain regulatory activity.

Another set of potential explanations arises from the necessarily increasing stock of regulatory paragraphs over time. As the years pass, the amount of regulatory language in the CFR necessarily increases. Thus, the trend could merely be a function of the increasing stock of text available for agencies to

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103 The absolute number of copied significant paragraphs increased from 2,800 in 2016 to 4,000 in 2017.
104 The absolute number of new significant paragraphs decreased from almost 47,000 in 2016 to 20,000 in 2017.
105 See Patrick A. McLaughlin, Regulatory Data—Trump’s First Year, available at https://www.quantgov.org/trumpfirstyear (“During President Trump’s first year, federal regulations grew by about 0.65 percent, less than the growth rate of any other president’s first year in office since our data begin in 1970. This rate of growth is also less than one-third of the long-term annual growth rate for federal regulations, which, from 1970 to 2016, was about 2.1 percent.”); see also Lisa Rein, How Trump’s first year has decimated federal bureaucracy, INDEPENDENT (Dec. 30, 2017) https://www.independent.co.uk/news/world/americas/president-donald-trump-white-house-first-year-inauguration-federal-bureaucracy-barack-obama-a8135921.html (“By the end of September, all Cabinet agencies except Homeland Security, Veterans Affairs and Interior had fewer permanent staff than when Trump took office in January – with most shedding many hundreds of employees.”).
106 See Jonathan Remy Nash, J.B. Ruhl, and James Salzman, The Production Function of the Regulatory State: How Much Do Agency Budgets Matter? 102 MINN L. REV. 695, 697 (2017) (providing data that suggest that “budget-cutting initiatives, whether aimed at specific agencies or the regulatory state in general, have gone far beyond rhetoric to impose real impacts on agency resources”).
borrow. Moreover, because our dataset begins in 2000, this limitation can also mechanically create the perception of an increase.\footnote{\textsuperscript{107}}

To address these concerns, we now assess reuse patterns while omitting any pair in which more than five years lie between the publication dates of the two paragraphs. The idea behind this approach is that it discounts reuse if the text that is borrowed from is “old” in some sense. Starting in 2005, it thus mitigates the concern that observed diffusion practices are merely dictated by an ever-growing body of regulatory text to borrow from. The result is depicted as a green, dotted line in Figure 3. Although the five-year restriction naturally lowers the amount of text reuse each year, it remains comparatively high, with 8\% of all paragraphs copied by the year 2020.

Under this more conservative measure, the rate of borrowing now appears steadier over time between 2000 and 2016, with a marked increase shortly before 2017. The observed increase in text reuse, that is, is now driven almost entirely by an increase in text reuse under the Trump administration. On the one hand, this five-year constraint suggests that the previously observed trend, at least before 2017, may have been a function of the increasing stock of regulatory texts, rather than any changes in agency behavior. On the other hand, the five-year constraint also dispenses with actual cases of copying by the agency, which may not be ascribable to the stock alone. As a result, it is unclear which approach best describes the underlying reality: each presents methodological tradeoffs. What we can say is that both of these measures do suggest a change in agency behavior, especially under the Trump Administration, rather than a mechanical result of the dataset.\footnote{\textsuperscript{108}}

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To add additional context, Figure 4 now examines the number of agencies over time that participate in text reuse. We denote as “borrowing” agencies those agencies that reuse regulatory paragraphs and as “lending” agencies those from whom regulatory paragraphs are reused.\footnote{\textsuperscript{109}} As Figure 4 below indicates, both the number of borrowing and the number of lending agencies increases over time.

\textsuperscript{107} Specifically, if a regulation is borrowed from the pre-2000 CFR for the first time, we treat it as an instance of original rulemaking. Only when it is borrowed subsequent times do we capture it as an instance of text borrowing. This means that we undercount instances of text reuse in early years. However, because we do track text reuse of pre-2000 rules after the first instance of borrowing, and because agency proclivity to borrow from old rules decreases over time, the potential bias induced should be most pronounced in early years, and then quickly decrease.


\textsuperscript{109} As before, we consider two paragraphs being “reused” if their similarity is at or above our threshold of 0.5.
However, the increase in the number of lending agencies is much steeper than
the increase in the number of borrowing agencies. This suggests that the network
of paragraph reuse disperses more over time, with a relatively small number of
agencies borrowing text from an increasingly large group. In other words,
regulatory paragraphs diffuse from more agencies over time. The trend persists
if we constrain instances of text reuse to a five-year window, although as before,
much of the observed increase is recent.

Overall, our analysis suggests that the reuse of regulatory paragraphs is a
phenomenon that has potentially increased in significance. Not only has the share
of all reused text increased over time—recall that a more conservative analysis
suggests that most of the increase is concentrated in recent years—but so have
the number of agencies that participate in the practice.

2. Leaders and Followers

These aggregate observations, however, do not tell us much about
relationships between particular agencies or the extent to which those agencies
dominate the trends, whether as leaders or followers. A natural follow-up
question therefore is which specific agencies are influencing the regulatory
process through their outsized roles. To gain insights, we compute “leadership”
and “follower” scores for each agency. To motive our analysis, note that agencies
can either lend or borrow regulatory language. An agency that frequently lends
its regulatory language to other agencies likely has a significant influence on
regulatory drafting. An agency that primarily borrows regulatory language
without lending it is likely to have little relevance beyond the confines of its own
jurisdiction.

There are at least two different ways in which an agency could be considered
a “leader” in regulatory drafting: The first focuses on the agency’s overall
influence on the Code of Federal Regulations, while the second looks at the
number of other agencies that copy from it. In other words, an agency could be
considered a leader for (1) its depth of influence on published regulatory text as
a whole or (2) for its breadth of influence on a number of different agencies.
These two measures highlight different aspects of drafting leadership.

Along the first dimension regarding depth of influence, we use a weighted
count of the number of times an agency’s original regulatory paragraphs have
appeared in the CFR. The weights are necessary to account for situations where
an agency’s text has been reused by multiple agencies over time. In these
situations, the leadership attribution must be split among agencies that previously
reused the text since a borrowing agency could have looked to any of these
agencies for leadership. The Appendix explains this approach in more depth.
Using this measure, Table 2 below ranks the top five agency leaders in terms of
their absolute impact on the CFR. Again, the leadership score in the righthand
column reflects the weighted number of drafted paragraphs that have been copied
by others.
Table 2: Top Five Agencies by Leadership Score

<table>
<thead>
<tr>
<th>Agency</th>
<th>Weighted Leadership Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of the Treasury</td>
<td>1332</td>
</tr>
<tr>
<td>Office of Management &amp; Budget</td>
<td>842</td>
</tr>
<tr>
<td>Federal Deposit Insurance Corporation</td>
<td>763</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>733</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>715</td>
</tr>
</tbody>
</table>

One might argue here that these results should be normalized in some sense by the agency’s drafting activity level. The idea would be that a leadership score could potentially be indicative of the quality of the regulations written by an agency; thus, that score should be adjusted by the number of regulations drafted.\textsuperscript{110} Such a normalized measure, however, is likely to be misleading for a number of reasons. First, highly specialized agencies are more likely to regulate in narrow issue areas, thus producing text that may not be reused by other agencies for lack of relevance. So a lower fraction of copied paragraphs may reflect congressional choices about an agency’s jurisdiction rather than the agency’s drafting prowess.

In addition, agencies that engage in very little rulemaking may score artificially high when they draft regulations under cross-cutting statutes like the Freedom of Information Act. Because their denominators are already low, agencies with even a few copied paragraphs (which they may not have even originated) could have scores that inflate their perceived influence. For all these reasons, we continue our analysis with a score that is unadjusted for the amount of drafting activity. That said, for the sake of completeness, we provide a table listing adjusted leadership scores in the Appendix.\textsuperscript{111} As expected, the results are

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\textsuperscript{110} The argument would be that some agencies have their regulations copied more only because they promulgate more regulations in the first place. As a result, it is important to adjust the number of regulatory paragraphs copied by the number promulgated. Perhaps doing so would result in some measure of drafting quality, a sense of what fraction of an agency’s drafted rules are copied. The higher this fraction, the better the agency’s drafting prowess, as evidenced by emulation by others.

\textsuperscript{111} Table A.3. More broadly, there is a correlation of 0.58 between an agency’s rank based on our leadership scores and that agency’s rank as measured by regulatory activity.
largely driven by the aforementioned exogenous factors and are therefore
difficult to interpret.\textsuperscript{112}

Returning then to our absolute measure of CFR influence, Table 2 shows
that the Department of Treasury has the most copied paragraphs, followed by the
Office of Management and Budget. Perhaps not coincidentally, both of these
agencies have leadership roles when it comes to the rulemaking process. The
Treasury Secretary chairs the Financial Stability and Oversight Council (FSOC),
which Congress established in 2010 to address sources of systemic financial
risk.\textsuperscript{113} More broadly, the Council’s mandate is to identify potential bank failures,
respond to emerging financial threats, and coordinate among the member
agencies.\textsuperscript{114} The group consists of several prominent banking-related agencies
under Treasury’s leadership.\textsuperscript{115} As the chair, the Treasury Secretary calls
meetings, testifies to Congress on behalf of FSOC, and can effectively veto the
systemic designation of various firms.\textsuperscript{116} It would thus be natural for member
agencies to perceive Treasury as a leader in other rulemaking realms as well.

Indeed, we find that FSOC agencies are the main driver of Treasury’s
leadership score: 65\% of its leadership score are the consequence of borrowing
by FSOC agencies. More revealingly, 86\% of that borrowing occurred after the
FSOC’s creation in 2010. By contrast, for non-FSOC agencies, the majority of
copying (53\%) occurred prior to the creation of the FSOC. In other words, only
FSOC agencies increased the frequency with which they copied from the
Department of Treasury after 2010—and drastically so. Together, these findings
lend support to the suggestion that it was the creation of the FSOC in 2010, and
Treasury’s leadership role within it, that significantly increased the department’s
influence.

\textsuperscript{112} The agencies with the highest leadership scores are simply the agencies with very little
regulatory activity. For instance, the Defense Nuclear Facilities Safety Board has the highest
relative score, but only promulgated 89 regulatory paragraphs during our period of
observation. In contrast, the EPA as the most active agency promulgated 84,284 paragraphs,
but receives the third lowest relative leadership score among all agencies.

\textsuperscript{113} See Jeffrey M. Stupak, Cong. Reseach Serv., R45052, Financial Stability

\textsuperscript{114} See Jacob E. Gersen, Administrative Law Goes to Wall Street: The New Administrative
Process, 65 Admin. L. Rev. 689, 693-94 (2013); Richard L. Revesz, Cost-Benefit Analysis
and the Structure of the Administrative State: The Case of Financial Services Regulation, 34

\textsuperscript{115} They include the Federal Reserve; Bureau of Consumer Financial Protection; Securities
and Exchange Commission; the Federal Deposit Insurance Corporation; Commodity Futures
Trading Commission; Federal Housing Finance Agency, and National Credit Union
Administration. See About FSOC, Financial Stability Oversight Council
https://home.treasury.gov/policy-issues/financial-markets-financial-institutions-and-fiscal-

\textsuperscript{116} Stupak, supra note 113, at 3.
Moreover, Treasury also has a long history and culture of quasi-independence, which likely contributes to a flair of drafting originality.\textsuperscript{117} Over the years, the agency “has created for itself an ambit of discretion beyond the reach of the judiciary, and only somewhat within the bounds of congressional oversight.”\textsuperscript{118} For example, it often issues rules without notices of proposed rulemaking, especially on tax-related matters.\textsuperscript{119} Truncating administrative procedure in this way inevitably allows for more drafting discretion.\textsuperscript{120}

Generally speaking, Treasury also has a more cooperative rather than litigious and antagonistic relationship with its regulated entities.\textsuperscript{121} As a result, it may develop rules, particularly procedural rules, which benefit from close input from those required to comply with them. This cooperative dynamic could result in more detailed rules worthy of emulation. Indeed, the Office of the Comptroller of the Currency (OCC) is the unit within Treasury that has the most copied regulations. The OCC supervises federally-chartered banks and thrifts, deploying examiners to regulated banks to closely monitor them.\textsuperscript{122} Consequently, OCC may write regulations with a more nuanced appreciation of its regulated entities.

The Office of Management and Budget (OMB), in turn, contains the Office of Information and Regulatory Affairs (OIRA), which is charged by executive order with reviewing significant rules from executive agencies.\textsuperscript{123} During this process, OIRA evaluates the rule’s adherence to presidential policies and cost-benefit principles, and can effectively reverse the rules on these grounds.\textsuperscript{124} OMB’s influence is reinforced by its Resource Management Offices (RMOs),

\textsuperscript{117} See David Zaring, Administration by Treasury, 95 Minn. L. Rev. 187, 190 (2010) (“Treasury has marched to the beat of its own drum since the founding of the current administrative state in the aftermath of World War II.”).

\textsuperscript{118} Id.

\textsuperscript{119} Id. at 200, 202.


\textsuperscript{121} Id. at 207-10 (“As a regulator, Treasury embodies a cooperative approach, where its leaders speak on the phone with the institutions they oversee more than do senior officials at other agencies, perhaps more than any other agency in the government”).

\textsuperscript{122} Id. at 207-208.

\textsuperscript{123} See Exec. Order No. 12,866 § 6(b)(1) (“OIRA may review only actions identified by the agency or by OIRA as significant regulatory actions under subsection (a)(3)(A) of this section”).

\textsuperscript{124} See Jennifer Nou, Agency Self-Insulation Under Presidential Review, 126 HARV. L. REV. 1755, 1769 (2013) (discussing difference between “political review (those issues raised as part of the President’s agenda and priorities) and analytical review (how agencies evaluate the costs and benefits of regulatory options, justify the choices among them, and consider a host of other technical issues”); id. at 1778 (describing how “OIRA can effectively reverse an agency action on behalf of the President and”).

Electronic copy available at: https://ssrn.com/abstract=4027009
which implements policy choices through various budgetary levers. RMOS can also sometimes play a role in OIRA regulatory review itself. As a result, OMB’s institutional impact on the rulemaking process is pervasive. The drafting choices of OMB’s components may thus have particular weight with other agencies. For example, OMB contains the Office of Federal Procurement Policy (OFPP), which is responsible for coordinating and “provid[ing] overall direction” for regulations related to government acquisition. It often uses this role to promulgate “model rules,” which are then emulated by other agencies.

An alternative way to conceptualize leadership within a network is by looking at the number of agencies that have copied from another agency. These nodes have the most edges connected to other agencies. Instead of focusing on an agency’s influence on published regulations as a whole, in other words, this measure looks instead at how many other agencies have used its language. How many spokes, that is, are in the most active hubs within the network?

Table 3 below presents the top five leader agencies according to this alternate metric, for agencies with a minimum of five copied paragraphs (those with fewer paragraphs are likely outliers). The numbers in the righthand column represent the number of agencies that borrow from the agency listed in the lefthand column. Unsurprisingly, the Department of Justice has the most agencies that borrow from it, likely because it coordinates a number of cross-cutting statutes applicable to a wide variety of agencies, such as Title IX of the 1972 Education Amendments, Section 504 of the Rehabilitation Act of 1973 and the Age Discrimination Act of 1975. By executive order, the Attorney General is charged with reviewing “existing and proposed rules” from “Executive

125 See Eloise Pasachoff, The President’s Budget as a Source of Agency Policy Control, 125 YALE L.J. 2182, 2207 (2016) (describing “aspects of the budget process [that] provide OMB with seven levers to control agency action”).

126 See Curtis W. Copeland, The Role of the Office of Information and Regulatory Affairs in Federal Rulemaking, 33 FORDHAM URB. L.J. 101, 120 (2006) (“According to OIRA, the desk officers always consult with the relevant resource management office on the ‘budget side’ of OMB as part of their reviews, and reviews of draft rules are not completed until those offices sign off.”).

127 The Office of Federal Procurement Policy, https://www.whitehouse.gov/omb/management/office-federal-procurement-policy/ (“The Office of Federal Procurement Policy (OFPP) in the Office of Management and Budget plays a central role in shaping the policies and practices federal agencies use to acquire the goods and services they need to carry out their responsibilities.”).


agencies in order to identify those which are inadequate, unclear or unnecessarily inconsistent.” 131 Beyond merely coordinating agency action under these statutes, the Attorney General holds veto power over them, which can be used to require consistent regulatory texts across agencies.

### Table 3: Top Five Leader Agencies, by Number of Borrowing Agencies (with minimum of 5 paragraphs borrowed)

<table>
<thead>
<tr>
<th>Agency</th>
<th>Number of Borrowing Agencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Justice</td>
<td>58</td>
</tr>
<tr>
<td>National Foundation on the Arts and Humanities</td>
<td>56</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>50</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>46</td>
</tr>
<tr>
<td>Environmental Protection Agency</td>
<td>43</td>
</tr>
</tbody>
</table>

Turning to the next agency on the list, the reasons for the National Foundation on the Arts and Humanities influence are not obvious at first glance. A qualitative examination, however, reveals that most of the borrowing from other agencies appears to arise from regulations issued by one of its subcomponents: the Institute of Museum and Library Services (IMLS). The primary mission of IMLS is to award grants and develop policy with regard to American museum, libraries and similar organizations.132 In 2010, Congress granted the Director new responsibilities to coordinate “museum, library, and information services” with other broader information dissemination efforts across government.133 This leadership role may help to explain why many borrowed regulations deal with the Freedom of Information Act and similar information-related policies.

* * *

Turning now from leader to follower agencies, we also compute a “follower score,” measured by the number of unique paragraphs borrowed by that agency. Table 4 presents the results of that analysis, ranking the top five agencies in terms of the number of paragraphs copied from others. While we

132 https://www.imls.gov/about/mission (describing “mission” to “advance, support, and empower America’s museums, libraries, and related organizations through grantmaking, research, and policy development”).
133 20 U.S.C. 9103
explore various theories for regulatory diffusion below, \textsuperscript{134} we explore some possible explanations here in the context of specific agencies. One striking feature of the agency with the highest follower score — the Department of Homeland Security (DHS) — is its jurisdictional breadth. When DHS was established in 2002, it combined 22 different federal departments and agencies into one Cabinet-level agency. \textsuperscript{135} As such, it “gained regulatory authority over transportation security and matters as disparate as marine ecosystems and refugee admissions.” \textsuperscript{136} Indeed, current DHS sub-components include the Citizenship and Immigration Services; Coast Guard; Customs and Border Protection; the Federal Energy Management Agency; Immigration and Customs Enforcement; Secret Service; and the Transportation Security Administration. \textsuperscript{137} In this manner, the jurisdiction of DHS is as broad as it is disparate.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Follower Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of Homeland Security</td>
<td>1790</td>
</tr>
<tr>
<td>Department of Agriculture</td>
<td>1449</td>
</tr>
<tr>
<td>Department of the Treasury</td>
<td>1378</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>1332</td>
</tr>
<tr>
<td>Department of Health and Human Services</td>
<td>1216</td>
</tr>
</tbody>
</table>

Because of its history and wide-ranging mission, DHS has functions that are adjacent to many agencies, such as the Department of Justice (DOJ) in the immigration context \textsuperscript{138} and the Department of Transportation (DOT) on issues of maritime security. \textsuperscript{139} Given that DHS was created more recently than many agencies, DHS likely sought regulatory consistency by reusing paragraphs from already existing agencies. Indeed, the Coast Guard was originally housed in

\textsuperscript{134} See Part II.A.

\textsuperscript{135} History, Homeland Sec., (June 15, 2018), https://www.dhs.gov/history.


\textsuperscript{139} Jason Marisam, Duplicative Delegations, 63 ADMIN. L. REV. 181, 219 (2011) (observing that “the Coast Guard was transferred from DOT to DHS” and must thus now “coordinate with the Department of Transportation for the peacetime maintenance of the coast”).
DOT before it was transferred to DHS. It would thus be natural for staff at Coast Guard to look to the work of their former colleagues at DOT. Moreover, the sprawling nature of the agency, particularly when resources are spread thin, would also make text reuse more attractive.

A different snapshot of the regulatory drafting network also supports the theory that policy consistency is a major driver of diffusion, especially within relatively closed networks. Table 5 below identifies the strongest lender-borrower relationships between individual agencies. To that end, we compute the weighted frequency of each unique agency pair. Most of the pairs reflect a jurisdictional overlap between the agencies. For example, both Treasury and the Federal Deposit Insurance Corporation deal with the issue of bank stability and, as discussed, are members of FSOC. As also mentioned, both DHS and DOT deal with transportation-related matters, with DHS containing subcomponents like the Coast Guard that were formerly part of DOT. Both Treasury and the Federal Reserve are also members of FSOC.

<table>
<thead>
<tr>
<th>Lending Agency</th>
<th>Borrowing Agency</th>
<th>Frequency (weighted)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department of the Treasury</td>
<td>Federal Deposit Insurance Corp.</td>
<td>450</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>Department of Homeland Security</td>
<td>412</td>
</tr>
<tr>
<td>Department of the Treasury</td>
<td>Federal Reserve System</td>
<td>336</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>Department of Transportation</td>
<td>160</td>
</tr>
<tr>
<td>Social Security Administration</td>
<td>Office of Management and Budget</td>
<td>157</td>
</tr>
</tbody>
</table>

140 Id. (noting that the Coast Guard was transferred from DOT to DHS).
141 We once again apply weighting scheme to take into account uncertainty about whom an agency borrowed from. In our analysis, we take into account the direction of the reuse. Hence, if A2 borrows text from A1, we treat this as different from a text reuse where A1 borrows from A2.
143 See supra notes 139-140 and accompanying text.
From a network perspective, we also note that some agencies such as the Treasury Department and DHS appear in both lists as top leader and follower agencies. From a network perspective, this suggests that both agencies are key to the overall patterns observed in the network. In addition, both are agencies that produce a high number of regulatory paragraphs and have broad jurisdictions.\textsuperscript{145} While Treasury’s jurisdiction is not as disparate as that of DHS, the agency does deal with a number of discrete issues such as government finances; taxation; currency; the supervision of national banks and thrift institutions; terrorist financing; as well as international trade policy.\textsuperscript{146} As a result, individual offices and bureaus may be drafting leaders, while others are followers based on their respective histories and jurisdictions. In other words, the relative autonomy and activity of these subcomponents may explain the status of both parent agencies as top leaders and followers.

* * *

Finally, one notable feature about the top leader and follower tables above is the relative dearth of independent agencies.\textsuperscript{147} Indeed, the Federal Deposit Insurance Corporation and Federal Reserve are the only independent agencies that appear in them.\textsuperscript{148} Does this imply that executive agencies are more influential as drafters or more prominent as followers considering their share of rulemaking activity? To examine this question, we now analyze whether the text an agency uses to draft its regulation is more likely to originate from an independent or executive agency, depending on whether the borrowing agency is independent or executive.

\textsuperscript{145} See Table A.1 below.

\textsuperscript{146} U.S. Dept. of Treasury, Role of the Treasury, https://home.treasury.gov/about/general-information/role-of-the-treasury.

\textsuperscript{147} What falls into the category of “independent agencies” is contested. Some distinguish between “executive” and “independent” agencies according to whether their heads are removable for cause. However, many have shown that other criteria such as multi-member boards or fixed terms better track notions of agency independence. \textit{See} Kirti Datla & Richard L. Revesz, \textit{Deconstructing Independent Agencies (and Executive Agencies)}, 98 CORNELL L. REV. 769, 772 (2013) (calling “incorrect” the assumption that “agencies can be divided into two identifiable, distinct sets: independent and executive”). That said, for our purposes, the statutory definition of “independent regulatory agency” is a serviceable way to draw the line for our purposes. \textit{See} Paperwork Reduction Act, 44 U.S.C. § 3502(5) (2012) (defining “independent regulatory agency”).

\textsuperscript{148} \textit{Id.} (designating the Federal Deposit Insurance Corporation as an “independent regulatory agency”).
Table 6: Percentage of Borrowed Text by Executive or Independent Agency

<table>
<thead>
<tr>
<th></th>
<th>Executive Agency Lender</th>
<th>Independent Agency Lender</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Agency Borrower</td>
<td>90%</td>
<td>10%</td>
</tr>
<tr>
<td>Independent Agency Borrower</td>
<td>72%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Table 6 above presents the rates at which executive and independent agencies borrow paragraphs from their counterparts. Initially, one might conclude that both executive and independent agencies borrow more from executive agencies as a group. But this is not necessarily the case. After all, only 10% of all regulatory paragraphs are promulgated by independent agencies. The rate at which executive agencies borrow from independent ones corresponds to the share of regulatory paragraphs promulgated by independent agencies. Hence, there is no evidence to suggest a systematic bias by executive agencies in favor of or against independent agencies.

By contrast, independent agencies borrow regulatory text from other independent agencies at twice the expected rate. One explanation is that independent agencies “trust” texts from their counterparts, who are generally more expert and less subject to political change than executive agencies. After all, independent agencies (as their name suggests) are more sheltered from the whims of changing presidential administrations. By contrast, Presidents wield more control over executive agencies to carry out their agendas, which may render regulations issued by independent agencies less appealing as templates.

II. Explaining Diffusion

Against this empirical backdrop, this Part more systematically considers the incentives agencies have to reuse regulatory texts when drafting their own. The

149 Of all substantive paragraphs in our FR dataset, 76,477 have been promulgated by IRAs and 574,687 have been promulgated by EAs.

150 See Emily Hammond Meazell, Presidential Control, Expertise, and the Deference Dilemma, 61 DUKE L.J. 1763, 1778 (2012) (“Thus, independent agencies--which burgeoned during the New Deal--were designed with the purpose of shielding expert decisionmakers from the shifting winds of politics.”).

151 Id.

152 See Nina Mendelson, Another Word on the President’s Statutory Authority over Agency Action, 79 FORDHAM L. REV. 2455, 2459 (2011) (detailing expansion of presidential control over executive agencies).
first section examines factors informing this choice, while the second section considers the mechanisms through which texts diffuse.

A. Why Diffusion

Command-and-control. One straightforward explanation for text reuse between administrative agencies is direction from a political principal, whether Congress or the President. Sometimes, Congress will require agencies to issue regulations that mimic those of another. The Securities and Exchange Act, for example, calls for the Office of the Comptroller of the Currency (OCC), the Federal Reserve, and the Federal Deposit Insurance Corporation (FDIC) to issue regulations that are “substantially similar” to those of the SEC in specific arenas.\textsuperscript{153} As a matter of practice, “all of these agencies have copied the SEC’s regulations, and when the SEC amends its regulations, the banking regulators usually follow.”\textsuperscript{154}

At other times, Congress exercises a lighter touch. Instead of requiring that regulations diffuse, it might command agencies to “share[] regulatory space”\textsuperscript{155} by designing overlapping functions, granting related jurisdictional tasks, and explicitly requiring concurrence among agencies.\textsuperscript{156} Congress can also enact cross-cutting statutes like the Freedom of Information Act and Privacy Act that apply across many agencies.\textsuperscript{157} In these kinds of situations, agencies are not required to copy each other’s texts, but may have greater incentives to do so to ensure consistency between their programs. To get a rough sense of this dynamic, it is worth noting that roughly two-thirds of the observations in our dataset share some statutory authority. This may suggest that a good portion of regulatory diffusion occurs because of choices that Congress has made, though some of the decision-making still lies in the drafting agency’s discretion.

The President also issues executive orders requiring coordination between agencies, often resulting in the same regulations being passed by different agencies. While coordination is not an explicit command to agencies to copy each other’s regulations, it can sometimes amount to that due to a desire to promote consistent policy. One order from President Carter, for example, called for his Attorney General to coordinate and, more importantly, approve regulations regarding non-discrimination policy across various statutes.\textsuperscript{158} The

\begin{itemize}
\item \textsuperscript{153} 15 U.S.C. § 78l(i). An exception exists where the agencies “find that implementation of substantially similar regulations with respect to insured banks and insured institutions are not necessary or appropriate in the public interest or for protection of investors, and publish such findings, and the detailed reasons therefor, in the Federal Register.” \textit{Id}.
\item \textsuperscript{154} \textit{See} Bradley, \textit{supra} note 9, at 751.
\item \textsuperscript{155} \textit{See} Freeman & Rossi, \textit{supra} note 37, at 1146.
\item \textsuperscript{156} \textit{Id}. at 1146, 1160.
\end{itemize}
agencies that issued regulations in response published rules with the same regulatory texts. In this manner, diffusion can occur because of mandates external to the agency.

**Interest Group Pressure.** Other external pressures on the agency come in the form of interest groups. It is already well-known that lobbyists supply model legislation to state legislators. One study, for example, found that “at least 10,000 bills almost entirely copied from model legislation were introduced nationwide in the past eight years, and more than 2,100 of those bills were signed into law.” For legislators, copying model legislation is a low-cost way to get credit for introducing and writing bills, while also currying favor with campaign donors. Interest groups, for their part, can exert influence under-the-radar: Providing legislative text does not need to be disclosed on campaign finance or other expense forms. But once introduced, model bills can “go viral” across states, “executing an agenda to the letter.”

So it would be unsurprising to find that interest groups supply regulatory templates to federal agencies as well. After all, regulations can be even more consequential than statutes—they actually execute the relevant policy choices. Indeed, interest groups like the National Association of Insurance Commissioners and United for Efficiency draft and post model regulations. They likely encourage agency rule drafters to adopt them through the same informal channels interest groups normally use to influence agencies. More formally, private actors also propose regulatory text to agencies through rulemaking petitions. The National Civil Liberties Alliance, for example, has petitioned more than a dozen agencies to adopt proposed regulatory text

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159 See, e.g., EPA Nondiscrimination, 52 FR 30598; Group 1 Nondiscrimination, 51 FR 4566; Group 2 Nondiscrimination, 51 FR 22880.
161 Id.
162 Id.
regarding the use of agency guidance documents.\textsuperscript{166} The organization has submitted written comments to four different agencies to adopt the same regulatory texts as well.\textsuperscript{167}

\textit{Learning.} There are also potential explanations for regulatory diffusion arising from the agency’s perspective. For starters, agencies learn from other agencies.\textsuperscript{168} When rule drafters confront a novel subject area, it would be natural for them to look at how other agencies have approached similar issues. The need for agencies to learn would be particularly acute when agencies are newly created or when they gain new statutory authorities.

Learning, in our context, implies that a policy or drafting decision by another agency has been perceived to be successful, thus meriting adoption.\textsuperscript{169} “Successful” rules could include those that have been upheld in court, desirably interpreted, or fostered compliance. Risk-averse lawyers, for example, prefer language from other agencies that have survived litigation.\textsuperscript{170} When success is more difficult to measure or observe, agencies can also use proxies: For example, rules may be perceived as successful if they have not been abandoned over time.\textsuperscript{171} In this sense, learning results in a kind of standardization.\textsuperscript{172}


\textsuperscript{168} See Dorit Rubinstein Reiss, \textit{Account Me in: Agencies in Quest of Accountability}, 19 J.L. & Pol’y 611, 678 (2011) (“Agencies learn from each other—for example, other agencies emulated the experience of the first agencies with negotiated rulemaking, and OMB incorporated it into an executive order, recommending it to all agencies.”).


\textsuperscript{170} Interview with Daniel Cohen, Assistant General Counsel for Regulation, U.S. Department of Transportation (Feb. 3, 2021) (notes on file with author). Lawyers are often rule drafters, sometimes writing the first draft and other times providing “critical input.” Thomas O. McGarity, \textit{The Role of Government Attorneys in Regulatory Agency Rulemaking}, 61 L. & Cont. Probs. 19, 26 (1998). \textit{Administrative Conference of the United States, Final Report on Plain Language Drafting} 26 (2017), https://www.acus.gov/sites/default/files/documents/Plain%20Regulatory%20Drafting_Final%20Report.pdf (“In some agencies, such as the IRS (which considers their regulations an exercise in statutory interpretation, rather than novel policy-making), rules are drafted by lawyers in the first instance. Most OGCs, however, will mainly be responsible for ensuring compliance with the APA and other relevant legal considerations.”).

\textsuperscript{171} Shiman & Volden, at 842.

rulewriter put it, drafters sensibly want to “take the best pieces of regulations” from other agencies and “mix and match” provisions accordingly.\textsuperscript{173}

Resource Costs. Text reuse becomes even more attractive when drafters are operating under time or resource constraints. Say, for example, that there is a statutory deadline on the horizon. Or an outgoing President demands midnight rules. Or there is a scheduled speech during which the regulation will be announced. When deadlines like these loom, drafters would be more tempted to turn to pre-existing regulatory texts, at least on the margin. Drafting rules from scratch is costly. It usually requires coordination between multiple team members—lawyers, economists, program officers.\textsuperscript{174} Substantive issues require research; options memos must be written; analyses must be completed.\textsuperscript{175} Thus, the more a drafter is resource-constrained, the more likely she will be to borrow language from other regulations. One would thus expect an inverse relationship between an agency’s resources—measured perhaps by budget or staffing numbers—and rates of regulatory text reuse. Note that this prospect could also help “deossify” rulemaking—that is, make it easier for agencies to amend rules by lowering the costs of drafting new ones.\textsuperscript{176}

Regulatory consistency and coordination. Finally, consider the idea that regulations should be considered not as individual units in isolation, but rather as elements of a larger regulatory system contained in the CFR. In this view, text reuse allows new regulatory language to be more easily embedded into a system of increasingly complex rules. By contrast, when an agency drafts language from scratch, it risks creating unintended inconsistencies and conflicts with preexisting policy choices.

Consider, for example, the Dodd-Frank Act, which requires the SEC and CFTC to “consult and coordinate” with each other in the regulation of credit swaps “for the purposes of assuring regulatory consistency and comparability.”\textsuperscript{177} After the CFTC issued a final rule regarding business conduct standards for swaps, the SEC reopened its comment period on its own rules.\textsuperscript{178}


174 These teams or “work groups” are usually led by a program office and include members from other subunits that have a stake in the rule. See Cornelius M. Kerwin & Scott R. Furlong, Rulemaking 140 (2019) (“Where responsibility for writing rules is delegated to a single office or individual, it is still rare for the work to be done in truly splendid isolation.”); Thomas O. McGarity, The Role of Government Attorneys in Regulatory Agency Rulemaking, 61 L. & Cont. Prosbs 19, 20 (1998) (“The team model is the predominant model for internal agency decisionmaking in the context of informal rulemaking.”); ACUS Final Report on Plain Language Drafting 26 (2017), https://www.acus.gov/sites/default/files/documents/Plain%20Regulatory%20Drafting_Final%20Report.pdf.

175 See Kerwin & Furlong, supra note 174


177 Dodd-Frank Act, 124 Stat. at 1641. 15 U.S.C. 8302(a)(1)

178 SEC’s Final Rule, 81 FR 29960, 29961.
Unlike the SEC’s original proposal, where “commenters were divided as to whether they preferred the Commission's or the CFTC's proposed approach to specific issues,” commenters “overwhelmingly urged the Commission to harmonize its external business conduct rules with those of the CFTC.”

The difference now was that industry groups had already “invested significant resources and infrastructure to develop and implement systems, policies, and procedures to comply with these final rules.” In response to these comments, the SEC indeed revised its final rules to “conform them to the rules adopted by the CFTC.”

In this manner, copying another agency’s regulation helps ensure regulatory consistency and the possibility that the new rule better fits better into the regulatory system as a whole.

B. Channels of Diffusion

When drafters seek to emulate regulations from other agencies, through what channels do these texts diffuse? Sometimes, it is as simple as pulling up the electronic version of the Code of Federal Regulations and running a keyword search. Indeed, one government lawyer reported doing just that: surveying published regulations on the same subject matter to emulate those she thought the most appropriate. But rule drafters share information through many other channels as well. Some of these channels are formal and mandated by Congress or the President. Consider statutorily required consultation requirements; bilateral agency memoranda of understanding; and presidential tools of coordination such as policy councils and regulatory review.

To illustrate, take the Obama Administration’s Second Open Government National Action Plan. As part of this plan, the Administration pledged to “initiate an interagency process” to draft a potential “core” regulation regarding the Freedom of Information Act “that is both applicable to all agencies and

179 Id. at 29964.
180 Letter from Robert G. Pickel, Chief Executive Officer, ISDA, to Elizabeth M. Murphy, Secretary, SEC (July 22, 2013), at 3.
181 SEC’s Final Rule, 81 FR at 29962.
183 See Freeman & Rossi, supra note 37, at 1156 (“Informal coordination regularly occurs without any explicit communication between agencies, as where one agency observes what another agency is doing or anticipates another agency’s decisions and adjusts its decisions accordingly to avoid tension or friction.”).
185 These are the formal coordination tools identified in Freeman & Rossi, supra note 37.

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retains flexibility for agency-specific requirements.”

The Office of Information Policy (OIP) within the DOJ led a two-year group to fulfill the National Action Plan’s requirements, after which it issued template FOIA regulations for other agencies to adopt. The template succeeded in getting some agencies to adopt the same regulatory language, though its records of success was mixed.

Congress can also create more indefinite offices to coordinate the implementation of trans-substantive statutes like FOIA. In 2009, for example, the Office of Government Information Services (OGIS) was established as part of the National Archives and Records Administration to “advocate for the proper administration of FOIA.” While it issues guidance documents, OGIS also provides feedback on individual agencies’ proposed FOIA regulations for “clarity and readability” through both direct contact with agencies and comments on their proposed rules. As part of this process, OGIS often provides drafting templates or recommends that agencies use the same language adopted by another agency. For example, from 2011 to 2013, OGIS submitted comments

187 Id. at 3.
189 OGIS recommended that the DOI follow the template regulations published by the DOJ and promise to forward misdirected requests to the appropriate subcomponent within the DOI. See Office of Government Information Services, Public Comment on Proposed Rule for Department of the Interior Freedom of Information Act Regulations (Sept. 13, 2012) RIN 1093-AA15. The DOI refused to follow the template, instead promising to only forward requests that were “clearly intended” for a different subcomponent. 84 FR 61820, 61822 (2019). The agency argued that this was the only way it would be able to meet its statutory obligations under FOIA as the amount of FOIA requests the DOI receives in a year has exploded recently. Id. OGIS also made two other suggestions using the DOJ’s template regulations in its comments to the VA’s 2018 proposed rule. See Office of Government Information Services, Public Comment on Department of Veterans Affairs Proposed Rule regarding Release of Information from Department of Veterans’ Affairs Records, VA 2018, at 3–4 (May 31, 2018). The VA agreed with one suggestion and adopted the template regulation word for word but rejected the second. 84 FR at 12123–21232 (2019). The change agreed to make was to ensure its regulation reflected the requirements of the FOIA statute whereas the other change was merely discretionary and the VA felt its existing regulation was “sufficient.” Id.
to various agencies recommending that they adopt the same language as the Central Intelligence Agency’s FOIA regulation concerning certain fee waivers.\footnote{See, e.g., Office of Government Information Services, Public Comment on Defense Logistics Agency, Proposed Rule to Update its Freedom of Information Act Regulation (Dec. 13, 2012); Office of Government Information Services, Public Comment on Propose Rule for Department of the Interior Freedom of Information Act Regulations (Sept. 13, 2012); Office of Government Information Services, Public Comment on The Department of Justice’s Proposed Rule for Freedom of Information Act Regulations; Office of Government Information Services, Public Comment on The Financial Stability Oversight Council’s Proposed Rule on Implementation of Freedom of Information Act 3 (May 26, 2011); Office of Government Information Services, Public Comment on The Privacy and Civil Liberties Oversight Board Notice of Proposed Rulemaking, Freedom of Information, Privacy Act, and Government in the Sunshine Act Procedures (July 13, 2013).} One agency, the Privacy and Civil Liberties Oversight Board, adopted language modeled exactly after the CIA’s regulation as cited by OGIS.\footnote{See 78 FR at 66995–96 (2013). The PCB discussed OGIS’s comments as the “third commenter.” While PCB does not mention allowing for discretion when waiving fees like the CIA regulation, the final rule has language that mirrors the CIA rule cited in OGIS’s letter. See id. at 67000.} Other agencies, however, either ignored the suggestion\footnote{FSOC did not adopt OGIS’ suggestion with respect to giving discretion with fee and made no mention of why it chose to not to adopt the change. In fact, nowhere in the preamble does FSOC even acknowledge that OGIS made any suggestion concerning the granting of fee waivers. Implementation of the Freedom of Information Act, 77 FR 21,628, 21,628 (Apr. 11, 2012) (codified at 12 C.F.R. pt. 1301); OGIS’s comment: https://www.regulations.gov/comment/FSOC-2011-0004-0006.} or rejected it with an accompanying explanation.\footnote{The DOJ also rejected this suggestion, but it at least explained why it made that choice. According to the DOJ, FOIA “establishes a standard for waiver or reduction of fees” and the DOJ’s regulations “are intended to define the manner in which this standard is to be applied.” Revision of Department’s Freedom of Information Act Regulations, 80 Fed. Reg. 18,099, 18,102 (Apr. 3, 2015). Thus, it felt that OGIS’s suggestion went too far in allowing discretion in granting fee waivers under FOIA. Similarly, the DOI declined to adopt adding discretion because “it [was] concerned that it would create unrealistic expectations on the part of requesters, undercut FOIA’s statutory fee requirements, and provide Department employees with an unacceptably vague standard.” Freedom of Information Act Regulations, 77 Fed. Reg. 76,898, 76,901 (Dec. 31, 2012). Finally, the DLA rejected adopting the CIA’s language as suggested by OGIS because it found “it unnecessary to duplicate information published by DoD.” Defense Logistics Agency Freedom of Information Act Program, 79 Fed. Reg. 30,463, 30,465 (May 28, 2014).} 

Of course, regulatory drafters also interact with each other informally: through one-off phone calls or emails to former colleagues or respected individuals in other agencies; periodic meals or coffees; or conversations at
social events. Sometimes these interactions become more institutionalized. Indeed, for decades, there was a brown bag lunch group consisting of career staff from across government. They would meet regularly to exchange information, develop contacts, and brainstorm how to approach similar issues. The longevity of the group was a testament to its perceived usefulness and the “shared institutional memory” of its participants. These more informal mechanisms are more likely to explain how regulatory texts diffuse across agencies with different statutory authorities or who otherwise have very little formal interaction because they do not share regulatory jurisdiction as commonly understood.

Another potential mechanism of agency cross-pollination is that of staff migration, whether at the career or political level. A number of the government officials we interviewed had helped write rules while employed at different agencies. While systematic data on the movement of federal employees between agencies are sparse, the Office of Personnel Management has a dedicated transfer process for those serving in the competitive service, which suggests that it’s at least common enough to have a dedicated procedure for it. This transfer process allows civil servants to work in another agency without undergoing another civil service examination. In addition, there are also executive branch employees that are temporarily assigned (“detailed”) to other agencies. They, too, bring with them knowledge and experience from their home agencies in their new roles.

To illustrate many of the themes above, consider one government lawyer who had recently begun work at a new agency. Under pressure from a 60-day appropriations-related deadline, he reported modeling a new rule he was drafting after language from one of his previous agency’s regulations. The rule dealt with

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197 See Spencer Overton, Political Law, 81 Geo. Wash. L. Rev. 1783, 1794 (2013) (“Receptions, lunches, and other informal gatherings give people an opportunity to build relationships and speak more intimately about substantive issues.”).

198 Freeman & Rossi, supra note 37, at 1211, 1211 n.106 (“Over time, certain interagency practices may become institutionalized while still remaining informal.”).

199 Id. at n.106.

200 Id.

201 Id. Id.

202 Cf. id.

203 Interview with Daniel Cohen, Assistant General Counsel for Regulation, U.S. Department of Transportation (Feb. 3, 2021) (notes on file with author).


205 Id.


207 Interview with Daniel Cohen, Assistant General Counsel for Regulation, U.S. Department of Transportation (Feb. 3, 2021) (notes on file with author).
various paperwork and procedural requirements. He felt the text represented the “wisdom” of previous learning by the previous, more experienced, agency. In this manner, this lawyer brought his experience from his previous agency to bear on his work at a new agency—a dynamic heightened by a time constraint. In this manner, regulatory text had diffused across agencies through staff migration.

III. Implications

This Part now considers some of the implications of text reuse for administrative process, judicial interpretation, and regulatory drafting. The first Subpart considers the potential benefits and risks of diffusion. In particular, it argues that agencies should have a duty to explain why they have borrowed regulatory texts to allow for executive branch oversight. The second Subpart then considers the implications of diffusion for regulatory interpretation. In particular, it argues that the maxim to read similar regulations similarly—the in pari materia canon—is appropriate in the context of legislative rules.

A. Evaluating Diffusion

Regulatory drafters can reuse texts for praiseworthy or pernicious reasons. Perhaps the most obvious benefit of the practice is to promote consistency across agencies. Textual consistency can reduce compliance costs. The more that rules are standardized, the less regulated entities must spend on lawyers to interpret new terms or otherwise comply with novel requirements. Consistent policies across agencies, in turn, can also increase business certainty, especially if the resulting guidance is consistent as well. These benefits are especially important to firms that engage in activities implicating the jurisdiction of multiple agencies.

Consider, for example, a requirement in the 2009 American Recovery and Reinvestment Act for “vendors of personal health records” to notify their customers of any breach of sensitive health information. The statute called for HHS to regulate those entities covered by the Health Insurance Portability and Accountability Act (HIPAA) whereas the Federal Trade Commission would cover all other entities. Various commenters demanded harmonization

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208 Id.
209 Id.
210 Cf. Thomas W. Merrill & Henry E. Smith, Optimal Standardization in the Law of Property: The Numerus Clausus Principle, 110 YALE L.J. 1, 47 (2000) (The presence of “one out of one hundred who adopts a nonstandard form for property rights can increase the costs of processing the rights of ninety-nine others.”).
between the rules in order to “create a level-playing field for HIPAA and non-HIPAA covered entities.”213 Another group noted that having different standards would “only increase administrative complexity and cost.”214 Finally, one organization said that it “may have business components subject to [both the FTC’s and HHS’] rules” so harmonization between the rules would “greatly facilitate prompt notice to consumers in the event of any breach of their personal health information.”215 Heeding these concerns, both agencies decided to consult with each other “to ensure both sets of regulations were harmonized by including the same or similar requirements, within the constraints of the statutory language.”216

Moreover, in line with the learning theory above, agencies also borrow texts from more knowledgeable agencies that have more experience in a particular subject area or a greater enforcement role. Take the earlier example involving Title IX regulations prohibiting sex-based discrimination.217 Recall that twenty-one agencies copied most of the Department of Education’s regulations on the subject. In doing so, they cited the Department’s “history of public participation in the development and congressional approval” of the regulations as well as the agency’s “leadership role” in enforcing them.218 In this manner, regulatory diffusion could foster the dissemination across agencies of expertise and experience administering a statute.

Borrowing language from other agencies also reduces rulemaking costs—the time and effort otherwise spent on drafting texts from scratch. As a result, the practice can help to “deossify” the regulatory process, that is, render it less resource-intensive.219 Rulemaking can thus be more efficient, facilitating more updating of existing rules or other necessary changes. The resources saved, in

213 Health Breach Notification Rule, 74 Fed. Reg. at 42963. See also American Benefits Council, Comment Letter on Health Breach Notification Rule at 2 (June 1, 2009) (“The Council supports the harmonization of HHS and FTC rules as it would provide HIPAA covered entities and PHR related entities with a consistent set of rules within which to work.”).


215 healthITnow.org, Comment Letter on Health Breach Notification Rule at 2 (June 1, 2009).

216 WedMD, Comment Letter on Health Breach Notification Rule at 2 (June 1, 2009).

217 Breach Notification for Unsecured Protected Health Information, 74 FR 42740, 42743.

218 See infra notes 10-12 and accompanying text.

219 At the same time, the agencies took care to note that their regulations were “not identical to ED’s regulations” in every respect. See 64 FR 58569-58572 (emphasis added). For example, they noted, “the common rule includes modifications to be consistent with Supreme Court precedent and statutory changes that are not yet reflected in the Department of Education’s regulations. In addition . . . the participating agencies have made a few additional revisions to the common rule in response to public comments.” See Nondiscrimination on the Basis of Sex in Education Programs or Activities Receiving Federal Financial Assistance, 65 FR 52858-01 (2000).

217 See McGarity, supra note 176 at 26-28 (describing ossification).
turn, could be spent addressing more urgent or high-priority tasks within the agency.

While there are many reasons to celebrate the reuse of regulatory text, there are risks to consider as well. The most obvious is the temptation for drafters to use templates without sufficiently tailoring them; as a result, agencies could promulgate regulations that are ill-fitting to the specific regulatory issue at hand. One striking illustration from abroad can be found in Argentina’s hazardous waste regulations. They are verbatim copies of the U.S. Environmental Protection Agency’s rules—including their internal cross-references to the obviously-inapplicable U.S. Code. The cross-references in particular suggest that Argentina was merely importing language without considering the unique demands of the country or its specific legal authorities.

It is difficult to find such clear examples of rote copying among U.S. agencies. One possible explanation is that the practice is more subtle among American agencies, without obvious giveaways like irrelevant cross-references. Absent such evidence, it would be difficult for outside observers to judge whether regulatory diffusion was the result of thoughtless imitation. Another possibility is that few examples of careless borrowing, if any, actually exist. The notice-and-comment process could make it especially difficult for agencies to adopt language without adequate justification. Rulewriters eager to avoid litigation risk would avoid importing language from other agencies without careful thought.

That said, public comments have criticized agencies for reusing regulatory texts without sufficiently adapting them. For example, a number of agencies reused language from a DOJ template regarding nondiscrimination on the basis of handicaps. During the rulemaking, a commenter argued that the “agency should have tailored the regulation to its particular programs and activities instead of adopting the Justice Department’s prototype.” The agencies rejected this criticism. Regardless of whether this choice was justified, only a fraction of agency rulemakings are challenged in court, thus mitigating the check that arbitrariness review provides. As a result, the risk of reflexive regulatory

220 See Miller, supra note 3, at 846.
221 Id.
222 See infra note 233-36 and accompanying text.
223 See Kerwin & Furlong, supra note 174, at 164 (discussing how “litigation” after public comments “has a profound effect on the rulemaking programs of many agencies”).
224 51 FR 4566-01, 4567; 51 FR 22880-01, 22881.
225 51 FR 22880-01, 22881; 51 FR 4566, 4567.
226 51 FR 22880-01, 22881; 51 FR 4566, 4567.
227 For example, from 1988 to 1990 only thirteen of the twenty-eight significant hazardous waste rules from the Environmental Protection Agency were challenged and reviewed in court. See Cary Coglianese, Litigating Within Relationships: Disputes and Disturbance in the Regulatory Process, 30 L.&SOC’YREV.735, 742 (1996).
borrowing remains real — especially when there are time and resource constraints.

There are other costs of regulatory diffusion as well. One is the stifling of policy innovation. Instead of studying a problem anew amidst updated information, a borrowing agency in the name of consistency could instead freeze into place an outdated or ill-considered approach. In other words, instead of serving as “laboratories of democracy,” agencies could thwart experimentation by merely copying existing texts. Falling into line too quickly could, in turn, grant outsized influence to the agency that simply promulgated its regulation first. Perhaps the agency was first because it drafted its regulation in haste. Or because it happened to confront the regulatory problem earlier. All of these scenarios would result in non-optimal rules that then proliferate through the mechanisms of diffusion. Finally, to the extent that diffusion reflects the work of interest groups, the phenomenon grants private entities an outsized role in rulemaking.

Whether the benefits of regulatory diffusion ultimately outweigh the costs is an empirical question that our analysis does not shed light upon. Among other things, that assessment would require data on the burdens avoided through standardized language; the benefits of the policies diffused; the costs saved by agency drafters; and the impacts of alternative activities agencies were able to address with those resources saved, among other factors. If an aggregate assessment of the practice of text reuse is exceedingly difficult, perhaps there is some value to having agencies themselves make this assessment on a case-by-case basis. The law could force these self-assessments by requiring agencies to internalize the social costs of sloppy drafting choices. The threat of external review would serve as an ex ante check on unjustified borrowing.

One natural question is to what extent they should be required to explain those reasons to facilitate oversight. Agencies already possess incentives under existing law to cite and justify their work. Reason-giving, for example, is a component of arbitrariness review under the APA. While this standard is often

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228 See, e.g., Stuart Minor Benjamin, Evaluating E-Rulemaking: Public Participation and Political Institutions, 55 DUKE L.J. 893, 898 (2006) (encouraging agencies to experiment with e-rulemaking as “laboratories of democracy”); Hannah J. Wiseman & Dave Owen, Federal Laboratories of Democracy, 52 U.C. DAVIS L. REV. 1119, 1173 (2018) (noting that “federal agencies may be much more promising crucibles of experimental reform” such that “laboratories of democracy may be intertwined with, or largely outside of, the structures of federalism”).

described as a judicial “hard look,” in practice, courts are fairly deferential, in particular to an agency’s “drafting decisions.” Given the possibility that regulatory borrowing could reflect the mindless use of a template, however, it might be tempting to argue that courts should apply a stricter standard of review. In this view, more scrutiny is necessary to evaluate why an agency made its drafting choices.

A major concern with this proposal, however, is that judges are particularly ill-suited to this task. A limited number have worked in agencies, let alone the executive branch more broadly. Regulatory drafters, by contrast, have experience administering rules and therefore better appreciate the tradeoffs involved in drafting them — especially when such tradeoffs involve resource constraints. Judges, moreover, lack manageable standards for reviewing these choices: how much or how little explanation is enough? The resulting uncertainties, in turn, would result in ossification as agencies now have to spend

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230 See Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co., 463 U.S. 29, 51 (1983); Greater Boston Television Corp. v. FCC, 444 F.2d 841, 851-52 (D.C. Cir. 1970). Under this standard, courts apply a “hard look” to agency decisions: to interrogate whether the agency improperly relied on extra-statutory factors; failed to consider an important angle; proffered a rationale that conflicted with the evidence in the record; or generally failed to apply its expertise. See Lion Oil Co. v. E.P.A., 792 F.3d 978, 982 (8th Cir. 2015) (An “[a]gency decision is ‘arbitrary or capricious’ if agency has relied on factors that Congress has not intended it to consider, entirely failed to consider important aspect of problem, offered explanation for its decision that runs counter to evidence before agency, or is so implausible that it could not be ascribed to difference in view or product of agency expertise).

231 See Jacob Gersen & Adrian Vermeule, Thin Rationality Review, 114 Mich. L. Rev. 1355, 1358 (2016) (finding that “since October Term 1982 . . . the Court has passed on the merits of arbitrariness challenges sixty-four times” and, of those, “agencies have lost arbitrary and capricious challenges only five times—a remarkable win-rate of 92 percent.”). Agencies rarely lose on arbitrariness grounds in the lower courts as well. Id. at 1367 (observing that “agencies rarely lose on arbitrariness grounds in the courts of appeals” and “interpret[ing] that empirical regularity to suggest that the Supreme Court is directing the lower courts to utilize a thinner form of rationality review, one that requires merely that the agency's decision not be pure caprice.”).

232 See, e.g., In re Gateway Radiology Consultants, P.A., 983 F.3d 1239, 1262–63 (11th Cir. 2020) (“Our deference extends both to an agency's ultimate findings as well as [to] drafting decisions like how much discussion to include on each topic, and how much data is necessary to fully address each issue.”).

233 See Thomas J. Miles, Racial Disparities in Wiretap Applications Before Federal Judges, 41 J. Legal Stud. 419, 431 (2012) (observing that “[a]bout 19 percent of [federal district] judges [in sample] had previously worked in the legislative or executive branches of state government, and with respect to the federal government, about 16 percent had previously worked in the legislative branch or in nonprosecutorial positions in the executive branch”).

234 See Gersen & Vermeule, supra note 231, at 1395 (“It is often rational, indeed optimal, to not spend the time gathering information so that a clear rational connection exists between particular facts and the particular choice made, because that would require sacrificing the benefits of expedition.”).
resources papering over their drafting choices. In addition, heightened review would have chilling effects on text reuse when the benefits of the practice — e.g., increased coordination, standardization, learning — are likely to be substantial.

Given these concerns, a better alternative would be to leave oversight to other executive branch actors who appreciate the kinds of considerations necessary when drafting rules. One candidate would be the Office of Information and Regulatory Affairs (OIRA). Agencies covered by executive order are required to submit proposed and final rules to OIRA for review. One of the review’s explicit purposes is to ensure that a rule does not “create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.” As a result, agencies must already explain how their rules are consistent with those of others during the OIRA review process. As part of this process, OIRA could also issue guidance requiring that agencies explain more broadly why they borrow regulatory texts from other agencies. To reduce the potential burdens, those explanations could occur verbally in intra-executive branch deliberations, instead of appearing in formal, published rule preambles.

B. Interpreting Similar Regulations

Diffusion also implicates questions of regulatory interpretation. In this context, the main question is whether similar rules should be interpreted similarly. Indeed, rules, no less than statutes or contracts, require interpretation. Agencies regularly interpret their own rules — when enforcing them, adjudicating them, or providing guidance on what they mean. Until recently, those views gained much respect from reviewing judges. As long as not “plainly erroneous” or “inconsistent” with the regulation, the agency’s understanding was

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236 Exec. Order No. 12,866 § 3(b), 3 C.F.R. 638, 641 (1994). As for independent agencies not covered by this executive order, other coordinating bodies such as FSOC could serve a similar OIRA-like role.

237 Id.


239 See Kevin M. Stack, The Interpretive Dimension of Seminole Rock, 22 GEO. MASON L. REV. 669, 672 (2015) (“Administrative agencies frequently offer interpretations of their own regulations, whether in adjudicative decisions, guidance documents, the preambles to the regulations, opinion letters, or briefs.”).


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entitled to “controlling weight”— a standard known as Auer deference. Some courts understood Auer as demanding even more deference than that given to statutes. Courts often defended the doctrine on the grounds that agencies were better positioned to understand why a rule was drafted the way it was. Alternatively, agency deference was a sensible interpretive presumption about congressional intent given agencies’ comparative expertise. As a result, judges often gave regulations cursory glances before blithely adopting the agency’s view.

No longer. In Kisor v. Wilkie, the Supreme Court demanded greater judicial skepticism. Declining to overrule Auer, Justice Kagan, writing for the majority, nevertheless sought to “reinforce [the] limits” of the doctrine and to explain how it was “cabined in its scope.” First, she clarified that the doctrine only applied when “the character and context” of the agency’s interpretation entitled it to deference. For example, the interpretation must represent the agency’s high-level “official position,” rather than an informal ruling by staff. It must also exhibit the agency’s expertise and “considered judgment.” If these conditions are satisfied, an agency’s “reasonable” views are eligible for deference.

Whether deference will be granted depends on whether the judge, using interpretive tools, can disambiguate the regulation at issue. In Justice Kagan’s words, “the possibility of deference can arise only if a regulation is . . . genuinely ambiguous, even after a court has resorted to all the standard tools of

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242 Kisor, 139 S. Ct. at 2416 (2019) (“Some courts have thought (perhaps because of Seminole Rock’s “plainly erroneous” formulation that at this stage of the analysis, agency constructions of rules receive greater deference than agency constructions of statutes.”).
243 Id. at 2412 (noting that “the agency that promulgated a rule is in the ‘better position [to] reconstruct’ its original meaning.”).
244 Id. (“We have explained Auer deference (as we now call it) as rooted in a presumption about congressional intent—a presumption that Congress would generally want the agency to play the primary role in resolving regulatory ambiguities”). See also id. at 2413 (noting that “[a]gencies (unlike courts) have “unique expertise,” often of a scientific or technical nature, relevant to applying a regulation “to complex or changing circumstances.”).
245 Id. at 2414 (acknowledging that “[a]t times, this Court has applied Auer deference without significant analysis of the underlying regulation”).
246 Id. at 2416.
247 Id. at 2408.
248 Id. at 2416.
249 Id. at 2417.
250 Id. at 2415-16 (“If genuine ambiguity remains, moreover, the agency’s reading must still be ‘reasonable,’ [i]n other words, it must come within the zone of ambiguity the court has identified after employing all its interpretive tools.” (citations omitted)).
interpretation.” Put differently, judges cannot just “reflexive[ly]” capitulate to the agency’s interpretation, but rather consider the “text, structure, history, and purpose of a regulation” just as they would have had there been no agency to rely upon.

Consequently, judges will now have to grapple with regulatory interpretation on its own terms. Basic questions remain unsettled. What is the relevant “text”? Does it consist only of the text codified in the Code of Federal Regulations or does it also include the preamble? If a judge decides to look to regulatory purpose or intent, to what sources should she turn? More broadly, is regulatory history (analogous to legislative history) a valid source of interpretation? All of these questions demand answers unique to the regulatory context. Commenters and courts can no longer blindly import insights from the statutory realm.

The most relevant inquiry for our purposes is whether there is a valid role here for canons of interpretation. Interpretive canons are “rules of thumb,” often deployed in the statutory context, which judges deploy to ascertain meaning. Consider in particular the in pari materia canon, the notion that similar statutes

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251 Id. at 2414.
252 Id. at 2415 (quoting Pereira v. Sessions, 138 S. Ct. 2105, 2120 (2018) (Kennedy, J., concurring)).
253 Id. at 2415.
254 Compare Jennifer Nou, Regulatory Textualism, 65 Duke L.J. 81, 138 (2015). (“The regulatory text alone is published in the Code of Federal Regulations, an important legal touchstone for determining whether an agency has issued a substantive, legislative rule.”) with Kevin M. Stack, Interpreting Regulations, 111 Mich. L. Rev. 355, 407 (2012) (suggesting “that both regulatory text and the regulation’s statement of basis and purpose count as part of the ‘text’ on which a textualist should center her interpretive inquiry”). See also id. at 360–61 (referring to a regulatory “preamble” as the agency’s published “detailed explanation of the grounds and purposes of the regulation, called a ‘statement of basis and purpose’”).
256 See Noah, supra note 255, at 306-07 (identifying as possible sources of regulatory history “the preamble accompanying the final rule, regulatory analyses of various sorts prepared in tandem with promulgation of the final rule, notices of proposed rulemaking and similar published documents, internal agency memoranda, and even the recollections of persons involved in the formulation of the rule”).
257 See id. at 282 (noting that “it is far easier to ascribe an intent to an agency when it issues a rule than to a legislature when it enacts a statute, both because of differences in their decisionmaking routines and because of the greater reliability of the materials that document the bases for their decisions”).
should be interpreted similarly.\textsuperscript{259} The rule — literally meaning “in the same matter” — encourages courts confronting an ambiguous statute to look at another statute on the same subject. In the Supreme Court’s formulation:

The correct rule of interpretation is, that if divers[e] statutes relate to the same thing, they ought all to be taken into consideration in construing any one of them . . . If a thing contained in a subsequent statute, be within the reason of a former statute, it shall be taken to be within the meaning of that statute.\textsuperscript{260}

Some courts justify the canon in terms of legislative intent, a “presum[ption] that Congress intended the[e] text to have the same meaning in both statutes” absent evidence to the contrary.\textsuperscript{261} Others ground the canon in a kind of legal pragmatism, which calls for judges to rationalize the law and consider its consequences.\textsuperscript{262} In this view, when two different statutes bear on similar subjects and use similar language, the role of the court is to interpret them so as not to functionally conflict.\textsuperscript{263}

In the statutory context, however, some have argued that the canon is inappropriate given the “structural separation” of Congress into committees, which do not communicate with each other.\textsuperscript{264} Put differently, committees with disparate jurisdictions often do their work in “silos.”\textsuperscript{265} These realities “pose[] a perhaps insurmountable obstacle to the accuracy of assumptions of linguistic consistency.”\textsuperscript{266} Courts and commenters alike also express skepticism that statutes should be read as if Congress actually sought consistency, whether

\textsuperscript{259} William N. Eskridge, Jr. & Philip P. Frickey, Foreword: Law as Equilibrium, 108 HARV. L. REV. 26, 105 (1994). See also 1 William Blackstone, Commentaries on the Laws of England *60 n.8 (Edward Christian ed., 14th ed. 1803) (“It is an established rule of construction that statutes in pari materia, or upon the same subject, must be construed with reference to each other.”).

\textsuperscript{260} Branch v. Smith, 538 U.S. 254, 281 (2003) (Scalia, J., plurality opinion) (quoting United States v. Freeman, 44 U.S. (3 How.) 556, 564-65 (1845)).

\textsuperscript{261} Smith v. City of Jackson, 544 U.S. 228, 233 (2005) (Stevens, J., plurality opinion).

\textsuperscript{262} See Anuj C. Desai, The Dilemma of Interstatutory Interpretation, 77 WASH. & LEE L. REV. 177, 193-94 (2020).

\textsuperscript{263} Id. at 183.


\textsuperscript{266} Id.
linguistic or policy-oriented, across time.\textsuperscript{267} Maxims to read statutes coherently, in this view, are naïve about the extent to which legislative drafters are aware of different parts of the same statute or the U.S. Code.\textsuperscript{268}

The picture, however, looks different in the administrative state, where disparate rulemakers from distinct agencies regularly communicate and coordinate with one another.\textsuperscript{269} As previously discussed, OIRA reviews rules from executive agencies to ensure they do not “create a serious inconsistency or otherwise interfere with an action taken or planned by another agency.”\textsuperscript{270} In other words, OIRA helps to promote coherence, whether on textual or policy grounds, between regulations from different executive agencies. At least for significant rules issued by these executive agencies, then, a presumption that regulations should be read coherently arguably has an empirical grounding. Maybe a more general way to think about a regulatory \textit{in pari materia} canon is as a way to vindicate the executive branch’s own explicit desire for coherence.

Beyond centralized coordination, agencies also regularly interact with each other through formal and informal means. As discussed, they can enter into memorandums of understanding, form working groups, and informal get-togethers.\textsuperscript{271} While it is true that agencies can be more fragmented than congressional committees are, the executive branch as a whole possesses more coordinating mechanisms than Congress does.\textsuperscript{272} Moreover, since agencies actually implement the regulations that they write — unlike Congress with respect to statutes — they are likely to be more familiar with the relevant sections of the Code of Federal Regulations than Congress is with the U.S. Code. As a result, agencies are better positioned to draft with an eye to consistency.

Another broader source for the norm comes from the APA’s prohibition against arbitrary agency action.\textsuperscript{273} Non-arbitrariness requires policy coherence,

\begin{quote}
\textsuperscript{267} See, e.g., K.L. v. Rhode Island Bd. of Educ., 907 F.3d 639, 646 (1st Cir. 2018) ("[T]he notion that Congress, acting on legislation separated by forty years and addressing different subjects, would be attentive to the consistent usage of a phrase, reflects a fanciful version of the legislative drafting process."); Abbe R. Gluck & Lisa Schultz Bressman, \textit{Statutory Interpretation from the Inside—an Empirical Study of Congressional Drafting, Delegation, and the Canons: Part I}, 65 STAN. L. REV. 901, 936 (2013) (noting that statutory drafters “vigorously disputed that the first cousin of the whole act rule — the “whole code rule,” under which courts construe terms across different statutes consistently — reflects how Congress drafts or even how it tries to draft”).

\textsuperscript{268} Id.

\textsuperscript{269} Freeman & Rossi, \textit{supra} note 37.


\textsuperscript{271} See \textit{supra} notes 40, 123-126 and accompanying text.

\textsuperscript{272} See Gluck & Bressman, \textit{supra} note 267 (comparing Office of the Legislative Counsel with OIRA and noting that the former “does not appear to have the reach, the convening power, or even the consistency of practice to coordinate Congress's drafting process”).

\textsuperscript{273} 5 U.S.C. § 706.
\end{quote}
which arguably requires attention to the possibility of interagency conflict.\textsuperscript{274} This is particularly true when commenters raise concerns about inconsistent regulations across agencies, which occurs often.\textsuperscript{275} When it does, agencies have a duty to consider them.\textsuperscript{276} For all these reasons, reading regulations \textit{in pari materia} arguably makes more sense in the regulatory, than statutory, context.

Indeed, parties have sometimes asked judges to apply the canon to regulations—not always by name but by invoking the idea that similarly-worded regulations should be interpreted consistently.\textsuperscript{277} Faced with this prospect, some judges have applied the canon, with little discussion about its appropriateness in the regulatory context.\textsuperscript{278} Others have asked for supplemental briefing on the question, feeling lost on how to approach it.\textsuperscript{279} Given the previous regime of strong deference, there were few precedents for them to analyze.\textsuperscript{280} Post-\textit{Kisor}, however, judges will be confronted more often with calls to read regulations \textit{in pari materia}. This is especially true given our finding that the number of substantially similar rules has been increasing over time, as has the number of agencies engaged in textual borrowing.

Whether and when the principle makes sense in the rulemaking context depends on its perceived logic and maps onto broader debates about regulatory

\begin{footnotesize}

\textsuperscript{275} See, e.g., Business Conduct Standards for Security-Based Swap Dealers and Major Security-Based Swap Participants, 81 Fed. Reg. 29,960, 29,964 (May 13, 2016) (describing commenters that “overwhelmingly urged the Commission to harmonize its external business conduct rules with those of the CFTC”).


\textsuperscript{278} See, e.g., United States v. Moss, 872 F.3d 304, 310 (5th Cir. 2017) (“It is a hornbook principle of interpretation that when ‘two provisions operate in pari materia,’ they ‘should not be read in isolation,’ but must be construed together.” (quoting United States v. Onick 889 F.2d 1425, 1433 (5th Cir. 1989))).

\textsuperscript{279} In \textit{United States v. Moessler}, for example, the judge asked for briefing specifically on the issue of reading regulations \textit{in pari materia} from different agencies. \textit{See Moessler}, 2010 WL 4811945, at *1, *7.

\textsuperscript{280} The \textit{Moessler} briefing, for example, only turned up two cases directly supporting reading regulations \textit{in pari materia}. \textit{Id.} at *7 (citing \textit{United States v. Biocic}, 730 F. Supp. 1364 (D. Md. 1990), and \textit{United States v. Olesen}, 196 F. Supp. 688 (S.D. Cal. 1961)).
\end{footnotesize}
interpretation, which will not be resolved here. Suffice to say that the textualist judge would likely focus on linguistic coherence, reading the text of the two regulations as though they were one. This judge would apply textualist canons such as the rule to avoid redundancy or presumption of consistent usage (giving the same words the same meaning) to maintain the textual integrity of the similar regulations. By contrast, a more pragmatic, purposivist judge would focus on policy coherence, ensuring that both regulations are read so as not to functionally conflict. On this view, the in pari materia canon seeks to resolve any policy conflicts between the two statutes, to make the overall statutory scheme work or “make sense” together.

In this manner, the in pari materia canon would operate in different ways depending on one’s approach to regulatory interpretation more generally. Those diverging orientations would also help inform another question that judges would need to confront: Which regulations are appropriate to read against each other? In other words, which rules are “similar enough” to warrant application of the canon? The textualist judge is unlikely to deploy the technical methodology used here as a metric for similarity. Nor should she: While that approach sought to operationalize a general search for regulatory texts that drafters had likely used as a model or template, judges will have the benefit of briefing and discovery in specific cases to be able to make those determinations with more information.

Conversely, a more purposivist judge would likely have to determine whether two candidate regulations implicated the same policy, rather than sharing similar texts. These judges could rely on more institutional proxies such as whether the two rules were coordinated by another entity such as OIRA or were borne of the same working group. If so, then a more accountable actor has determined that the two regulations at issue merit some kind of policy

281 Cf., Desai, supra note 262, at 183 (describing the in pari materia doctrine’s “treating the two statutes as one” as “harmonizing the statutes linguistically” (quoting Teles AG v. Kappos, 846 F. Supp. 2d 102, 111-14 (D.D.C. 2012)).

282 Id. See generally Stack, supra note 254, at 383-408 (describing the “Purposive Technique” of statutory interpretation).

283 Id. (describing approach as effort by courts to “harmonize to ‘make sense’ of the two statutes together”).

284 Cf. Desai, supra note 262, at 184 (analogously exploring “the determination of whether two statutes are in pari materia” which must be “answered in the affirmative” before “the court can then treat the two statutes as one”). Desai further explains that:

Courts have no analytical tools for determining when two statutes are on the same subject. Indeed, it is difficult to escape the conclusion that the determination is made intuitively and may well be made after the judge has decided how the statute should ultimately be interpreted. In other words, it seems likely that the determination is not in fact one of the levers of decision, but is instead a results-oriented fig leaf.

Id.

consistency. A court could then act as a faithful agent of the drafting bodies and apply the *in pari materia* canon accordingly.

**Conclusion**

Regulations diffuse across agencies and over time. This Article has explored how and why they do so. Specifically, it has operationalized the idea of text reuse between administrative agencies using methods of text analysis. The empirical results suggest that regulatory diffusion is increasing over time and through a broader network of agencies. These patterns suggest mechanisms of coordination between agencies that are more informal in nature than the current literature’s understanding of interagency coordination might otherwise suggest. Moreover, these findings heighten the importance of debates over regulatory interpretation, at a time when the Supreme Court is calling upon judges to read regulations with less deference.

More broadly, this work has sought to open up further lines of inquiry regarding regulatory drafting and policy diffusion more broadly. Indeed, many research questions remain: What other aspects of agency variation explain differences in diffusion patterns? Are there, for example, significant differences due to regulatory subject matter: perhaps national-security-related agencies exhibit more diffusion than others? Is it possible to observe the influence of interest groups on drafting decisions through notice-and-comment? While administrative law has paid more attention to the ways in which agencies interact, further study of their underlying networks and patterns of behavior may continue to reveal new insights on the levers of administrative influence and power.
Appendix

Detailed Description of Similarity Measure

Our goal is to identify all texts that are textually similar. Most existing measures of textual similarity compare texts pairwise. In a dataset of $n$ texts, there are $\frac{n(n-1)}{2}$ to be made. In our application, since $n = 651,164$, comparing each paragraph to each other paragraph would require 212 billion comparisons. This is computationally infeasible, regardless of which algorithm is used. Hence, instead of comparing every document to every other document, we rely on recent methodological advancements in big data analysis to identify similar documents probabilistically.\textsuperscript{286}

In particular, we follow Leskovec et al.\textsuperscript{287} and use two tricks to drastically simplify the problem of identifying text reuse: minhashing and locality sensitivity hashing. An example illustrates the approach. Consider the following two texts:

TEXT A: Contemporaneous record means any document created at the time of the event.

TEXT B: Current Record means any writing created at the time of the event.

We first convert each text to “shingled k-grams” with $k = 5$. An n-gram is simply a collection of $n$ consecutive words. Shingling means that the $n$-grams consist of overlapping, contiguous sequences. For instance, in the above example, TEXT A and TEXT B can be expressed as the following shingles:

\textsuperscript{286} For an overview, see generally JURE LESKOVEC, ANAND RAJARAMAN & JEFFREY DAVID ULLMAN, MINING OF MASSIVE DATA SETS 81-91 (2014) (discussing efficient ways to compute document similarities for large corpora).

\textsuperscript{287} Id. at 76-86.
<table>
<thead>
<tr>
<th>Text</th>
<th>Shingle #</th>
<th>Words</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>1</td>
<td>contemporaneous record means any document</td>
</tr>
<tr>
<td>A</td>
<td>2</td>
<td>record means any document created</td>
</tr>
<tr>
<td>A</td>
<td>3</td>
<td>means any document created at</td>
</tr>
<tr>
<td>A</td>
<td>4</td>
<td>any document created at the</td>
</tr>
<tr>
<td>A</td>
<td>5</td>
<td>document created at the time</td>
</tr>
<tr>
<td>A</td>
<td>6</td>
<td>created at the time of</td>
</tr>
<tr>
<td>A</td>
<td>7</td>
<td>at the time of the</td>
</tr>
<tr>
<td>A</td>
<td>8</td>
<td>the time of the event</td>
</tr>
<tr>
<td>B</td>
<td>1</td>
<td>current record means any writing</td>
</tr>
<tr>
<td>B</td>
<td>2</td>
<td>record means any writing created</td>
</tr>
<tr>
<td>B</td>
<td>3</td>
<td>means any writing created at</td>
</tr>
<tr>
<td>B</td>
<td>4</td>
<td>any writing created at the</td>
</tr>
<tr>
<td>B</td>
<td>5</td>
<td>writing created at the time</td>
</tr>
<tr>
<td>B</td>
<td>6</td>
<td>created at the time of</td>
</tr>
<tr>
<td>B</td>
<td>7</td>
<td>at the time of the</td>
</tr>
<tr>
<td>B</td>
<td>8</td>
<td>the time of the event</td>
</tr>
</tbody>
</table>

Generally, a text consisting of \( n \) words can be represented as \( n - k + 1 \) shingles. Here, both texts have 12 words and can be represented as 8 shingles. We then compute the Jaccard similarity, which divides the number of overlapping shingles by the total number of unique shingles. Here, that fraction is

\[
J(A, B) = \frac{3}{13} = 23\%
\]
This simple exercise is helpful in illustrating two characteristics of our approach. First, the $k$ in $k$-grams shingling can be thought of as a threshold that determines the number of consecutive words that need to be identical between the two texts in order for them to “count” as text reuse. For instance, if we set $k = 2$, any identical sequence of two words will count as text reuse. Naturally, small values of $k$ will lead to many false positives. Similarly, if $k$ is set too high, the results may include many false negatives.

Second, while the measure is sensitive to textual similarity, it is not sensitive to semantic similarity. Indeed, dependent on the context, the words “document” and “writing” may be highly semantically similar. However, the use of the word “document” in TEXT A and of “writing” in TEXT B breaks the chain of consecutive words, yielding a low textual similarity.

Computing $J(A, B)$ exactly, while generally workable, is computationally expensive for longer texts. Assume, for instance, that TEXT A and TEXT B contain a total of 1,000 unique shingles. Computing $J(A, B)$ exactly would require a comparison of all 1,000 unique shingles. For long texts, rather than computing $J(A, B)$ exactly, we approximate it with 360 independent random draws from all shingles, yielding an estimate of $J(A, B)$ with a standard error of approximately 0.06.

To further increase computational efficiency, we rely on a minHashing procedure. A hash function $H(x)$ maps shingles into fixed, pseudorandom numerical hash values. Hence, translating shingles into hashes and choosing the hash value with the smallest number is equivalent to choosing a shingle at random. The advantage in operating with hash values, rather than shingles, is that computers are extremely efficient in computing hash values. Hence, through repeated minHashing with randomly chosen hash functions, we can achieve an estimate of $J(A, B)$ at low computational cost.

So far, we have discussed efficient ways to obtain an estimated, pairwise text similarity. As mentioned above, however, our full dataset contains over 200 billion unique pairs. Even with the efficiency gains obtained through minHashing, making all comparisons is still infeasible. We thus rely on locality sensitive hashing to further reduce the computational burden. Intuitively, the goal of local sensitivity hashing (LSH) is to divide texts into buckets in a way such that similar texts are likely to be assigned the same bucket, whereas dissimilar texts are likely assigned to different buckets. Then only texts in the same bucket are compared to each other pairwise. LSH achieves this goal during

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288 For instance, in the two sentences “The quick brown fox jumps over the lazy dog” and “I just quickly read over the document,” there is overlap in the words “over the.” However, it is unlikely that a human would assume that text has been reused.

289 Consider the 20-word sentence “Welcome, my name is Kim and I will be your guide today. I sincerely hope you will enjoy the tour.” Under $k = 20$, a second sentence that replaces “Kim” with “Tim” would be considered as not reusing any text.

290 i.e. if $J(A, B) = 0.2$, the estimated mean of lies in $[0.14, 0.26]$ 95% of the time.

291 The probability that two shingles containing different words are translated into the same hash value is virtually zero.
the hashing process. Assume that each text is represented by \( m \) hash values. These \( m \) hash values can be broken into \( n \) bands, such that each band includes \( \frac{m}{n} \) rows. Each band is then hashed to a bucket. All documents with bands assigned to overlapping buckets are then compared to one another.

To illustrate on our example above, assume that we draw 6 random shingles with replacement from TEXT A and TEXT B. We represent these shingles as hash values. Next, we divide each set of 6 random shingles into 3 bands, where each band includes two shingles. For instance, the three bands for TEXT A could contain \([A_1, A_3], [A_2, A_6], [A_6, A_7]\) and the three bands for TEXT B could contain \([B_3, B_4], [B_1, B_4], [B_6, B_7]\). The bands would then be hashed into buckets. Because the bands \([A_6, A_7]\) and \([B_6, B_7]\) include identical shingles, they get hashed into the same bucket, making TEXT A and TEXT B a candidate for estimating the pairwise Jaccard Similarity, \( J(A, B) \). In contrast, if TEXT A and TEXT B do not contain the same band, \( J(A, B) \) will not be computed.

The example above is stylized. In practice, the number of hash values \( m \) and the number of bands \( n \) are much larger. It is helpful to understand, however, that LSH is a probabilistic process. In particular, if two documents have only few identical shingles (i.e. they are dissimilar), it is unlikely that their Jaccard Similarity will be estimated, because they will not share any hash-values, and thus will never appear in the same bucket. In contrast, if two documents share many shingles (i.e., they are very similar), it is likely that their Jaccard similarity will be computed. Indeed, for a given combination of parameters \( m \) and \( n \), it is possible to compute the probability that the Jaccard similarity for two documents will be computed pairwise as a function of their similarity. After manual inspection of our results, we determined that it can be virtually ruled out that two documents have reused the same text if their Jaccard similarity is less than 0.5. We thus set \( m \) and \( n \) such that it is very likely for us to compare documents pairwise if their Jaccard Similarity is at least 0.5.
Figure A.1. Probability of Detection over Jaccard Similarity

Figure A.1 above depicts the probability that we detect and explicitly compare two texts as a function of their Jaccard Similarity for our parameters of choice ($m = 120$ and $n = 40$). It shows that, at our threshold of 0.5, the probability that we compute the Jaccard similarity specifically is 1. This means that we are confident that our dataset contains all pairs of texts with a Jaccard similarity of 0.5 and above. In order to implement the above techniques, we rely on the text reuse package in R.\textsuperscript{292}

Detailed Description of Weighted Leadership Scores

To assign leadership scores, we cannot simply add up the number of times an agency’s regulatory text is reused by another agency. Doing so would over-count pairs in situations where an agency copies texts reused by multiple agencies before it. To understand why, imagine that, in the year 2005, agency $A_2$ reuses text from $A_1$. Then, in the year 2010, $A_3$ reuses that same text. Our dataset will contain three pairs: $\{A_1, A_2\}$, $\{A_1, A_3\}$ and $\{A_2, A_3\}$. Note, however, that $A_3$ appears in two observations, even though it copied the text only once in 2010.

Instead, the most intuitive approach is to divide the leadership score between the preceding agencies. To illustrate, imagine that, in the year 2005, agency $A_2$ reuses text from $A_1$. Then, in the year 2010, $A_3$ reuses that same text. It is most likely that $A_3$ used the text from either $A_1$ or $A_2$, but not of both.

When determining the leading agencies in the network, it thus appears appropriate to assign lower weight to the pairs \( \{A_1, A_3\} \) and \( \{A_2, A_3\} \). To explain our weighting approach intuitively, assume that each instance of text reuse is worth one “leadership point” that the borrowing agency assigns to the agency it borrowed text from. In the above example, we assign equal weight of 0.5 to both \( \{A_1, A_3\} \) and \( \{A_2, A_3\} \). This is synonymous with distributing the “leadership point” of \( A_3 \) equally between \( A_1 \) and \( A_2 \). There are two substantive interpretations of our weighting approach. First, one could assume that \( A_3 \) used the text from either \( A_1 \) or \( A_2 \), but not of both. Because we are not able to observe whom \( A_3 \) copied from, we assign the leadership point equally among the two lending agencies. Otherwise, one could also assume that \( A_3 \) used both the text of \( A_1 \) and \( A_2 \) as a template. However, we would still need to weight the pairs down in which \( A_3 \) appears, because otherwise, agencies that borrow text later would arbitrarily have more leadership points to distribute than agencies that appear earlier.

For instance, in our example, \( A_2 \) would assign a single leadership point to \( A_1 \), whereas \( A_3 \) would assign a point both to \( A_1 \) and \( A_2 \). Although this does not affect the relative ordering of leadership agencies within a single, reused paragraph, it is problematic when comparing agency influence across multiple instances of text reuse. In a first step, all agencies within a joint rulemaking are treated as a single agency. Whatever share they of the leadership point they receive is then distributed equally across them. As such, each agency within a joint rule receives \( \frac{1}{n} \times \frac{1}{k} \) leadership points, where \( n - 1 \) is the number of lending agencies outside the joint rule and \( k \) is the number of agencies participating in the joint rule. Similarly, all agencies within a joint rule can only distribute a single leadership point.

Having thus defined our weighting scheme, we calculate each agency’s “leadership score” as an expression for how often others borrow that agencies’ text. In other words, the numbers reflect how many of the agency’s regulatory paragraphs appear in the Code of Federal Regulations.
Additional Tables and Figures

Figure A.2: Classifier Performance, Substantive Paragraph

![Classifier Performance Graphs](https://ssrn.com/abstract=4027009)
Figure A.3: Classifier Performance, Procedural Paragraph

Accuracy

$F_1$

AUC

Electronic copy available at: https://ssrn.com/abstract=4027009
Table A.1: Top Ten Agencies by Regulatory Activity

This table indicates the most active agencies, as measured by the total number of paragraphs promulgated by it during our period of observation.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Relative Leadership Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Protection Agency</td>
<td>84,284</td>
</tr>
<tr>
<td>Department of the Treasury</td>
<td>84,172</td>
</tr>
<tr>
<td>Department of Agriculture</td>
<td>55,934</td>
</tr>
<tr>
<td>Department of Transportation</td>
<td>48,591</td>
</tr>
<tr>
<td>Department of Health and Human Services</td>
<td>48,198</td>
</tr>
<tr>
<td>Department of Commerce</td>
<td>42,469</td>
</tr>
<tr>
<td>Department of the Interior</td>
<td>42,087</td>
</tr>
<tr>
<td>Department of Homeland Security</td>
<td>38,478</td>
</tr>
<tr>
<td>Department of Labor</td>
<td>33,268</td>
</tr>
<tr>
<td>Department of Defense</td>
<td>32,525</td>
</tr>
</tbody>
</table>

Table A.2: Summary of Paired Dataset

<table>
<thead>
<tr>
<th>Unit</th>
<th>0</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter-Agency</td>
<td>257,388</td>
<td>210,052</td>
</tr>
<tr>
<td></td>
<td>(55%)</td>
<td>(45%)</td>
</tr>
<tr>
<td>Joint Rulemaking</td>
<td>211,185</td>
<td>256,255</td>
</tr>
<tr>
<td></td>
<td>(45%)</td>
<td>(55%)</td>
</tr>
<tr>
<td>Republished</td>
<td>445,402</td>
<td>22,038</td>
</tr>
<tr>
<td></td>
<td>(95%)</td>
<td>(5%)</td>
</tr>
<tr>
<td>Procedural</td>
<td>431,674</td>
<td>35,766</td>
</tr>
<tr>
<td></td>
<td>(92%)</td>
<td>(8%)</td>
</tr>
</tbody>
</table>
Table A.3: Top Five Agencies by Relative Leadership Score

This table indicates relative leadership scores. It divides the absolute leadership scores depicted in Table 3 by the amount of regulatory activity for each agency.

<table>
<thead>
<tr>
<th>Agency</th>
<th>Relative Scores</th>
</tr>
</thead>
<tbody>
<tr>
<td>Defense Nuclear Facilities Safety Board</td>
<td>1.26</td>
</tr>
<tr>
<td>Morris K. Udall Scholarship and Excellence in National Environmental Policy Foundation</td>
<td>0.95</td>
</tr>
<tr>
<td>Nuclear Waste Technical Review Board</td>
<td>0.8</td>
</tr>
<tr>
<td>Farm Credit System Insurance Corporation</td>
<td>0.55</td>
</tr>
<tr>
<td>National Mediation Board</td>
<td>0.47</td>
</tr>
</tbody>
</table>