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RESEARCH ARTICLE

Enforcement and Learning Under Rules and Standards*

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Abstract
Enforcement is costly, so sometimes states choose not to enforce their laws. We study this choice under rules and under standards. We show that nonenforcement of rules sends a relatively clear signal about state capacity. Regulated parties can use this information and violate law to some extent with impunity. Nonenforcement of standards sends a noisier signal, and this uncertainty may cause regulated parties to comply with law even though the state lacks capacity to enforce, a surprising implication. According to conventional wisdom, standards are costlier to enforce than rules, meaning a switch from rules to standards should decrease compliance. However, we argue that standards, by obscuring the state's capacity, can increase compliance. We identify the characteristics of standards that yield these effects, and we show that the logic generalizes to the complexity of law as well as its precision.

Keywords: rules and standards; enforcement; compliance; exceptions

I. Introduction

Should we adopt precise laws, like a speed limit of 55 miles per hour, or imprecise laws, like a limit of "reasonable speeds"? Jurists frame this question as a choice between rules and standards. This choice implicates fundamental priorities in law, like predictability, flexibility, and compliance. We focus on that last priority, compliance. Compliance often depends on enforcement, and enforcement depends on its costs. Rules are easier to enforce than standards because they do not require information about case-specific circumstances, like whether a speeding driver had an emergency. Thus, enforcing rules is "cheaper" than enforcing standards. Even so,

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enforcement is never free, and sometimes a rational state will choose not to enforce. We deepen the analysis of rules and standards by studying this choice. We argue that failing to enforce a rule sends a relatively clear signal about the state's limited capacity, whereas failing to enforce a standard sends a noisier signal. We thus identify a novel informational effect that can affect compliance and the choice between rules and standards in the first instance.

Our argument involves information and learning. With full and public information, regulated parties know the state's enforcement costs. "Bad men" can exploit this by violating law to the maximum extent possible without triggering enforcement.[1] In reality, this information is often private. The state knows its enforcement costs, but regulated parties do not. Given private information, regulated parties might test the state, violating law to varying degrees and observing what actions trigger enforcement. Suppose a party tests the state by taking action ϕ. With a rule, nonenforcement by the state in response to ϕ sends a relatively clear signal: the state is "weak," and others can do ϕ with impunity. With a standard, nonenforcement sends a noisier signal. The state might be weak, in which case others can do ϕ with impunity, or the state might be "strong," but the initial target of enforcement had extenuating circumstances, in which case others might face enforcement. Standards introduce uncertainty about the state's enforcement costs.

Consider an example. The speed limit is a rule: "55 miles per hour." Bob sees Anna pass an officer while driving 64 miles per hour, and Anna does not get a ticket. What does Bob learn? Because the speed limit is a rule, extenuating circumstances are unlikely to explain the state's decision not to enforce. A natural explanation is that the state has high enforcement costs such that punishing Anna's violation is not worthwhile. Thus, Bob is confident that he too can go 64 miles per hour with impunity. Now suppose the speed limit is a standard, "reasonable speeds," and Bob witnesses the same events. What does he learn? The state might have high enforcement costs, meaning he too can travel at 64 miles per hour, or the state might have low enforcement costs, but Anna had a justification for driving 64 that Bob lacks, meaning Bob might get a ticket for traveling at that speed. Bob's uncertainty causes him to slow down.

For clarity, our example strips away many complications, such as the possibility that the officer is lazy or corrupt, that he was changing batteries in his radar when Anna passed, or that other factors apart from the state's enforcement costs and Anna's circumstances drove the enforcement decision. Every such factor muddies the signal that regulated parties receive when the state opts not to enforce. Even so, the signal can only get muddier as law becomes more standard-like.

The muddying effect of standards complicates a truism. Enforcing rules may be cheaper for the state than enforcing standards, but *failing* to enforce rules is costlier than *failing* to enforce standards in the sense that it reveals more information about the state's capacity—information that regulated parties can exploit. Accordingly, resource-rich states might prefer rules because rules allow them to signal their strength. With standards, such states would refrain from enforcement when regulated parties have extenuating circumstances, and observers might confuse such restraint for weakness. Conversely, resource-poor states might prefer standards, not for the usual reasons but because standards can mask their weakness.

Standards are one instantiation of a broader phenomenon. The enforcement signal gets noisier when four conditions hold: (1) the behavior of regulated parties

[1]Oliver Wendell Holmes, Jr., *The Path of the Law*, 10 Harv. L. Rev. 457, 459–61 (1897).

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is common knowledge, meaning others observe it, including the government; (2) regulated parties can observe enforcement or nonenforcement in others' cases; (3) extenuating circumstances can excuse otherwise unlawful behavior; and (4) regulated parties find it harder than the government to determine whether extenuating circumstances are present in others' cases. Standards are especially likely to satisfy the third and fourth conditions, but rules with exceptions may also satisfy those conditions and distort the enforcement signal. Our analysis is thus relevant to the complexity of law as well as its precision.

Section II relates our work to the long-running debate over rules and standards, with a focus on how the legal regime affects compliance. Sections III, IV, and V present our core analysis, and Section VI discusses whether that analysis could affect the choice between rules and standards. Section VII generalizes our argument, and Section VIII concludes.

II. Literature Review

Our project builds on three literatures, starting with rules and standards. Numerous scholars have cataloged features of rules and standards and stressed that rules cost less to enforce.[2] Craswell and Calfee note that standards create uncertainty over permissible behavior.[3] With uncertainty, some illegal acts go unpunished, reducing the incentive to comply, but extra precautions insure against punishment, increasing the incentive to comply. Thus, the effects of uncertainty on compliance are ambiguous. The mechanism we study is different—it involves the potential for standards to mask information about the enforcer.

The second literature involves public enforcement. The Holmesian "bad man" violates law to the maximum extent he can without triggering enforcement. Many studies assume regulated parties know the state's enforcement costs.[4] Others consider whether regulated parties can learn about them through various means, including punishment.[5] A related literature involves tax auditing and compliance, which

[2]See, e.g., Isaac Ehrlich & Richard A. Posner, *An Economic Analysis of Legal Rulemaking*, 257 J. Legal Stud. 257 (1974); Duncan Kennedy, *Form and Substance in Private Law Adjudication*, 89 Harv. L. Rev. 1685 (1976); Colin S. Diver, *The Optimal Precision of Administrative Rules*, 93 Yale L.J. 65 (1983); Pierre Schlag, *Rules and Standards*, 33 UCLA L. Rev. 379 (1985); Frederick Schauer, *Formalism*, 97 Yale L.J. 509 (1988); Kathleen M. Sullivan, *Foreword: The Justices of Rules and Standards*, 106 Harv. L. Rev. 22 (1992); Louis Kaplow, *Rules Versus Standards: An Economic Analysis*, 42 Duke L.J. 557 (1992); Maciej H. Kotowski, David A. Weisbach, & Richard J. Zeckhauser, *Rules and Standards When Compliance Costs Are Private Information*, 43 J. Legal Stud. S297 (2014).

[3]Richard Craswell & John E. Calfee, *Deterrence and Uncertain Legal Standards*, 2 J.L. Econ. & Org. 279 (1986).

[4]See, e.g., Gary S. Becker, *Crime and Punishment: An Economic Approach*, 76 J. Pol. Econ. 169 (1968); A. Mitchell Polinsky & Steven Shavell, *The Economic Theory of Public Enforcement of Law*, 38 J. Econ. Lit. 45 (2000). Others assume regulated parties form expectations about enforcement costs that are unbiased on average. See, e.g., Lucian Arye Bebchuk & Louis Kaplow, *Optimal Sanctions When Individuals are Imperfectly Informed About the Probability of Apprehension*, 21 J. Legal Stud. 365 (1992); Nuno Garoupa, *Optimal Law Enforcement with Dissemination of Information*, 7 Eur. J.L. Econ. 183 (1999).

[5]Raaj K. Sah, *Social Osmosis and Patterns of Crime*, 99 J. Pol. Econ. 1272 (1991); Omri Ben-Shahar, *Playing Without a Rulebook: Optimal Sanctions When Individuals Learn the Penalty Only by Committing the Crime*, 17 Int'l Rev. L. Econ. 409 (1997); Christian At & Nathalie Chappe, *Timing of Crime, Learning and Sanction*, 4 Rev. L. Econ. 35 (2008); Massimo D'Antoni, *The Deterrent Effect of Uncertain Enforcement*

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incorporates uncertainty similar to what we examine here—the taxpayer does not know the auditor's enforcement capacity. Cronshaw and Alm show that greater uncertainty with respect to enforcement costs can increase or decrease compliance.[6] Kotowski, Weisbach, and Zeckhauser model compliance as a game with the government's enforcement strategy as the signal.[7] We differ from these works by focusing on the relationship between the form of law and uncertainty.

The third literature involves judicial behavior. Judges can write rule-like or standard-like orders and opinions, and scholars have identified reasons courts might prefer the latter.[8] Staton and Vanberg argue that judges choose vaguer (that is, more standard-like) opinions to minimize the reputational harm from noncompliance.[9] With vagueness, the public cannot tell if an executive or other actor has flouted a court's order. Our intuition is similar; observers learn less from nonenforcement of a standard than a rule. However, our analyses differ in important ways. Staton and Vanberg concentrate on "judicial prestige" and treat "open defiance" of a court as a distinct harm independent of the social harm from noncompliance. We study enforcement in general, not just judicial decisions, and we focus exclusively on the costs of enforcement and noncompliance.[10]

Huang authored the closest paper to ours.[11] He considers a "copycat" phenomenon in which people observe others act with impunity and assume they can do the same, only to be punished. He focuses on people taking actions that (to their surprise) trigger enforcement, whereas we consider people failing to take actions that (to their surprise) would not have triggered enforcement. Huang considers specific scenarios where the kind of surprise he studies is likely to occur—for example, when people have licenses authorizing them to resell tickets, and when firms have special permission from the IRS

(2008). Preliminary Draft. Available at: http://www.tau.ac.il/law/gilo/uncertainenforcement.pdf. Related work considers whether the state should hide or reveal information about its enforcement capacity. See Garoupa, *supra* note 5; Lars Gårn Hansen, Signe Krarup, & Clifford S. Russell, *Enforcement and Information Strategies*, 30 J. Regul. Econ. 45 (2006); Bert I. Huang, *Shallow Signals*, 126 Harv. L. Rev. 2227 (2013).

[6]Mark B. Cronshaw & James Alm, *Tax Compliance With Two-Sided Uncertainty*, 23 Pub. Fin. Rev. 139, 159–60 (1995).

[7]Maciej H. Kotowski, David A. Weisbach, & Richard J. Zeckhauser, *Audits as Signals*, 81 U. Chi. L. Rev. 179, 185–190 (2014). See also Maciej H. Kotowski, David A. Weisbach, & Richard J. Zeckhauser, *Signaling With Audits: Mimicry, Wasteful Expenditures, and Non-Compliance in a Model of Tax Enforcement* (2014). SSRN Electronic Journal. Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2449648. We do not have the hidden action problem that is a staple of the tax auditing literature. When our regulated parties violate the law, we assume the state knows.

[8]See, e.g., Doug Rendleman, Brown II's *"All Deliberate Speed" at Fifty: A Golden Anniversary or A Mid-Life Crisis for the Constitutional Injunction as a School Desegregation Remedy?*, 41 San Diego L. Rev. 1575 (2004); James E. Pfander, *Brown II: Ordinary Remedies for Extraordinary Wrongs*, 24 Law & Ineq. 47 (2006).

[9]Jeffrey K. Staton & Georg Vanberg, *The Value of Vagueness: Delegation, Defiance, and Judicial Opinions*, 52 Am. J. Pol. Sci. 504 (2008).

[10]Staton and Vanberg *assume* vagueness reduces the cost of noncompliance by using this utility function for the court: $U_C(\alpha) = -(p-\varepsilon)^2 - \alpha c p^2$, where p is the legislature's enacted policy (the court prefers $p = 0$), ε is an exogenous shock, $\alpha \in [0,1]$ indicates the vagueness (with greater values indicating a less vague, more specific opinion), and $c \geq 0$ reflects the court's concern about avoiding "open defiance" of its opinion. Directly from this function, one can see that a vaguer opinion reduces the cost to the court of noncompliance, defined as the selection by the legislature of a policy p different from zero. See *id.*, at 509.

[11]Huang, *supra* note 6.

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to structure transactions a certain way. We generalize, showing how law's precision and complexity relate to learning and how that, in turn, affects compliance.

III. Learning From Enforcement

Consider the following scenario, which we refer to as *Rules*:

> The law limits soot emissions to 15 micrograms per cubic meter of air. Factory *F* (first mover) emits dark smoke that *S* (second mover), the owner of a factory nearby, knows violates this law. If *S* sees enforcement against *F*—agents enter the factory, an official makes a public statement, the dark smoke clears—*S* concludes the state enforces the law against violators. Because *S* does not wish to face a sanction, she will reduce production and not emit such dark smoke when operating her own factory. What if *S* does not observe enforcement—no agents, no statements, and the dark smoke keeps billowing? Now *S* concludes the state does not enforce the emissions limit, at least not when the smoke resembles *F*'s. Because *S* does not worry about facing a sanction, and assuming more emissions generate higher profits, she will emit smoke as dense as *F*'s when operating her factory.

As this scenario shows, regulated parties can learn from enforcement decisions. If the first mover gets sanctioned for violating the rule, the second mover might too, and knowing this, she refrains from violating the rule, or at least from violating it to the same extent. To clarify, assume *S* knows *F* was emitting exactly 20 micrograms of soot when agents arrived at the factory. *S* concludes that her factory cannot emit 20 micrograms without facing a penalty, but whether she can get away with 19 is unclear. She has identified an emissions level that triggers enforcement, not the maximum level that does *not* trigger enforcement.

That regulated parties can learn from enforcement is unsurprising, and some theories of deterrence presume such learning. But the conditions necessary for this kind of learning are perhaps more complex than might be supposed. Regulated parties must recognize that they start with imperfect information,[12] gather reliable information about enforcement, and rationally update their beliefs in light of that information. That last step depends critically on the informativeness of the enforcement "signal."

Signals become less informative as their possible meanings multiply. To illustrate, enforcement in *Rules* could signal, as *S* concluded, that others will be punished for emitting the same amount of soot as *F*. Alternatively, it could signal that others *might* be punished, or even that the state had it out for *F* alone and others will not be punished. Nonenforcement could signal, as *S* assumed, that no one will be punished for emitting *F*'s amount of soot, or it could mean other things. We will consider this problem shortly, but for now we make the unrealistic assumption that the signal from nonenforcement is clear: if someone violates the law without getting sanctioned, the state must lack the resources to enforce in such situations. We will refer to this as the *weak state* signal.

[12]If they had perfect information, there would be nothing to learn.

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Now we turn to rules and standards. For our purposes, the key feature of a rule is its certainty ex ante.[13] Before acting, everyone understands what behavior constitutes compliance with the rule and what does not. In *Rules*, everyone understands that soot emissions at or below 15 micrograms are permissible, whereas emissions above 15 are impermissible. With a rule, extenuating circumstances (for example, a fire or other emergency in the factory) do not excuse violations.[14]

In contrast, the content of a standard is determined ex post. Whether a particular action violates a standard depends on the presence or absence of certain circumstances that are evaluated after the fact.[15] To illustrate, suppose the law prohibits emissions of "unreasonably dense smoke."[16] Does emitting 15 micrograms of soot violate this law? The answer could depend on any number of factors. If the factory makes steel critical to a war, then perhaps emitting 15 micrograms was reasonable, and the factory complied with the standard. If the factory could have easily reduced its emissions, and if no other extenuating circumstances were present, then the factory violated the standard.

Consider the following scenario, which we call *Standards*:

> The law prohibits emissions of "unreasonably dense smoke," and Factory *F* emits dark smoke that *S*, the owner of a factory nearby, knows would ordinarily violate this law. If *S* sees enforcement against *F*, then *S* concludes *F* does not have an extenuating circumstance that makes the emissions reasonable, and the state enforces the law against violators. Because *S* does not wish to face a sanction, and assuming she does not believe she has an extenuating circumstance of her own, she will not emit such dark smoke when operating her own factory. What if *S* does not observe enforcement against *F*? Now *S* might conclude that the state does not enforce the emissions limit, in which case she can emit comparable smoke with impunity. *Or* she might conclude that *F* had an extenuating circumstance such that *F*'s emissions are lawful. If she cannot verify whether *F* had such a circumstance, and assuming she does not believe she has an extenuating circumstance of her own, she does not know what to do.

As in *Rules*, enforcement in *Standards* teaches regulated parties something about the state's capacity. If the law was enforced against *F*, it will probably be enforced against *S*. But nonenforcement is more complicated. The standard allows for case-specific considerations to excuse actions that would otherwise violate law, and consequently, the change from a rule to a standard expands the range of inferences one might draw from nonenforcement. Failure to enforce could send the weak state signal (the state cannot enforce against such violations), or it could send the *extenuating circumstances* signal (there is no violation).

[13]See Kaplow, *supra* note 3. Rules may require interpretation, meaning they are not *completely* certain ex ante.

[14]One could draft a rule that includes excuses for extenuating circumstances. For example, a law might limit driving speed to 55 miles per hour unless a passenger is in labor. Our analysis does not preclude rules with exceptions, but it requires exceptions to be rule-like, meaning everyone understands them ex ante. We consider exceptions to rules in Section VII.

[15]See Kaplow, *supra* note 3.

[16]We model this standard on an 1881 ordinance that made "dense smoke … from any chimney" a public nuisance. See Cale Jaffe, *Environmental Federalism as Forum Shopping*, 44 Wm. & Mary Envtl L. & Pol'y Rev. 669, 677 (2020).

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IV. Signals and Information

What exactly makes nonenforcement of a standard difficult to interpret? One answer is that nonenforcement, like enforcement, may be consistent with many different circumstances, regardless of the form of law. We will consider that complication below. For now, we remain in our simple world and assume that nonenforcement against an apparent violation of a standard can mean only one of two things: the state is weak, or the potential target of enforcement had an extenuating circumstance. Observers struggle to know which of these two realities they face not merely because standards allow for extenuating circumstances to excuse otherwise unlawful behavior but because they lack information about those circumstances.

In *Standards*, suppose everyone knows that contributing to the war effort counts as an extenuating circumstance. If *S* knows *F* makes steel for the war, *S* cannot learn anything from nonenforcement because *F* is not violating the standard. But would *S* actually know this? Gathering information about *F*'s operation is not necessarily easy, especially as the relevant circumstances become more numerous or nuanced. If *S* does not know all the details about *F*, then she cannot draw a confident inference. Generalizing, standards muddy the signal from nonenforcement whenever observers do not know if the parties against whom law is not being enforced have an extenuating circumstance. We might refer to this as *fact unawareness*.

Even if observers know all the facts, they may not know what constitutes a sufficient extenuating circumstance. Suppose, for example, that *S* knows that her factory and factory *F* are identical in every way except for one: *F* makes steel for the war, while *S* manufactures lawn ornaments. Now suppose *F* emits dark smoke and the state does not enforce. Even though *S* knows the facts of *F*'s case, she cannot draw a confident inference about whether the state is weak or strong because she does not know if making the steel excuses *F*'s emissions. If it does, then there is no violation, and there is nothing to learn from nonenforcement. If it does not, then the state is weak. We might refer to this as *law unawareness*. Observers do not know all relevant law, including the universe of extenuating circumstances that excuse otherwise unlawful behavior.

To summarize, when observers are fact unaware, law unaware, or both, nonenforcement sends a muddy signal. The state could be weak, or the state could be strong, but there was no violation and therefore no occasion for the state to demonstrate its strength.

Unawareness of either type can leave observers in a state of uncertainty *regardless* of the form of law. If *S* knows nothing about the law on soot, observes *F* emit dark smoke, and does not observe enforcement, *S* can infer little about what her factory can emit. This is true whether the law on soot prohibits emissions above 15 micrograms (a rule) or prohibits "unreasonably dense smoke" (a standard). Still, standards tend to exacerbate the problem. With rules, regulated parties can correct their unawareness of the law by studying it. With standards, they cannot, at least not fully. The content of standards is determined ex post, after parties act. Even standards that have been applied and interpreted many times often have an open-endedness to them that allows for the discovery of new and sufficient extenuating circumstances. With standards, everyone is to some degree law-unaware, and so everyone can be left uncertain by nonenforcement.

Now we can confront a lingering issue. In our toy world, nonenforcement sends the weak state signal or the extenuating circumstances signal, but in reality it could

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send many different signals. In *Rules*, failure to enforce against *F* could signal that the state never enforces against that level of emissions, that it sometimes enforces against that level of emissions, that it did not observe *F*'s emissions, that *F* bribed the enforcers, or other things. Given the possibilities, rational people would not reason as *S* did in *Rules*. Upon seeing a failure to enforce against *F*'s billowing smoke, they would not conclude that the state *must* be weak. They would, however, conclude that the probability of the state being weak is higher than they previously thought. Nonenforcement would not teach them everything about the state's capacity, but it would teach them something. Here is the critical point: nonenforcement in *Standards* would teach them less. Whatever the number of signals nonenforcement may send, the number can only grow as law shifts from a rule to a standard because standards come with an extra possibility: the potential target of enforcement had one of potentially many extenuating circumstances.

We have assumed implicitly that the form of law as written dictates enforcement in practice. If the law is formulated as a rule, the enforcer enforces it as a rule. She does not convert it into a standard by accounting for extenuating circumstances that the rule does not contemplate. In reality, there may be slippage, with some rules getting enforced as if they were standards, and vice versa.[17] We do not believe this substantially affects our analysis. In general, the form of law and the enforcement norm probably correlate. Lawmakers choose between rules and standards to achieve certain ends, and it would be surprising if, having made that choice, they systematically permitted enforcers to unmake it. Furthermore, our core insights apply regardless of how the law is enforced. If the law is, *in effect*, a rule or a standard, that will shape what people can infer from enforcement.

V. Standards and Compliance

We have argued that regulated parties learn less from enforcement decisions when governed by a standard. With standards, "bad men" who want to violate law without being punished will struggle to identify what exactly triggers enforcement.

To elaborate on this point, suppose *S* initially believes that the probability of the state being strong—she will be punished for violating the emissions limit—is *c*. If the limit is a rule and the state does not enforce against *F*'s dark smoke, *S* updates her belief, concluding that the probability of the state being strong is *a*, where $c > a$. If the limit is a standard and the state does not enforce against *F*'s smoke, *S* concludes that the probability of the state being strong is *b*, where $c > b > a$. So long as the probability of extenuating circumstances in *F*'s case lies between 0 and 100 percent, *b* is less than *c* and greater than *a*. Now consider *S*'s decision threshold, *T*. If she believes the probability of the state being strong matches or exceeds *T*, she will choose a lower, lawful level of emissions, and if her assessment of the probability is less than *T*, she will choose a higher, unlawful level of emissions. When $b > T > a$, *S* will violate the law given a rule but comply given a standard.

This reasoning does not require *S* to be risk averse.[18] Whatever one's risk tolerance, nonenforcement given a standard sends a muddy signal.

[17]Cf. Frederick Schauer, *The Convergence of Rules and Standards*, 2003 New Zealand L. Rev. 303 (2003).

[18]Scholars have long understood that the combination of uncertainty (as when law is formulated as a standard) and risk aversion can affect compliance. See Craswell & Calfee, *supra* note 4. Risk-averse actors can

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To be clear, failure to enforce a standard *does* reveal information about the state's capacity; it just reveals less than failure to enforce a rule. One might wonder then about the durability of this effect. In our simple scenarios, *S* observes one act of nonenforcement against *F* before choosing her own action. If she observed many acts of nonenforcement against different parties in different circumstances, she would learn from each, and eventually she might assemble an accurate picture of the state's capacity. On this view, standards may send muddy signals, but in the long run regulated parties can learn the state's capacity, regardless of the form law takes.

This is possible, but there are causes for doubt. First, learning under standards is harder than our discussion has suggested. For illustrative purposes, we have imagined standards operating in "one-sided" fashion. Extenuating circumstances can loosen law, as when the war effort authorizes heavier emissions, or an emergency justifies otherwise reckless driving. In reality, standards can be "two-sided." Desperate circumstances can authorize more soot than usual at the same time that other circumstances—low abatement costs or environmental concerns—permit less soot than usual. Two-sided standards further inhibit learning. Suppose that law prohibits "unreasonably dense smoke," and this implies the following: for typical factories like *S*'s, the limit is 15 micrograms of soot; for "clean" factories with low abatement costs the limit is 5 micrograms; and for "dirty" factories with high abatement costs the limit is 25 micrograms. If *S* sees *F* emit 25 micrograms with impunity, she cannot draw strong inferences about the state's capacity. If *S* sees enforcement against *F* for emitting 25 micrograms, she still cannot tell if the state is strong (any violation will trigger enforcement) or somewhat weak (*F* is a clean factory and therefore was 20 micrograms over the limit; whether *S* can emit 10 micrograms over the limit is unclear). If *F* emits 15 micrograms and the state does not enforce, *S* cannot tell if *F* is a typical factory and the state is strong or *F* is a clean factory and the state is somewhat weak (meaning *S* can emit 10 micrograms over the limit with impunity). To generalize, two-sided standards widen the range of actions that send a muddy signal, and therefore learning under such standards, even with many observations, will be difficult.

Apart from this, the state may alter its practices or experience changes in its resources at any time. An election would be a natural time for such a change, as the incoming leadership has its own enforcement priorities. Budgets are regularly adjusted for various reasons, including unpredictable circumstances. Such shocks may cause regulated parties to reset their expectations about enforcement, with learning starting anew.

VI. Choosing Rules and Standards

Our discussion so far has treated the form of law as exogenous, meaning enforcers have no choice over the "ruleness" or "standardness" of the directives they enforce. Many settings have this character. Police officers, border patrol agents, and agricultural inspectors routinely enforce laws with a form selected by separate actors (legislators, judges, agencies). Furthermore, the form of law may be entrenched, perhaps in constitutional or international law, making it largely unchangeable. Our

"overcomply" to ensure they do not violate a vague law. However, we have assumed risk neutrality throughout.

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analysis above uncovers some informational effects of rules and standards in that common enforcement setting. Here we consider whether those effects could influence the choice between rules and standards in the first instance.

Scholars argue that enforcing rules is cheaper than enforcing standards because enforcing rules requires less context-specific information. All else equal, that argument pushes in favor of rules. We have developed an inverse argument showing that perhaps all else cannot be equal. Precisely because rules depend less on context, failing to enforce them is less likely to reflect special circumstances and more likely to reflect limited capacity. Thus, nonenforcement of a rule sends a relatively clear signal that the state is weak. With a standard, nonenforcement sends a noisier signal. For governments with high enforcement costs, failing to enforce a standard is "cheaper" than failing to enforce a rule in that it conveys less information about its limited capacity, which can improve compliance.

For perspective, consider the usual methods for improving compliance. The state could invest in better monitoring technology, improve training for inspectors, impose draconian penalties, and so on. Such changes might be costly, financially, politically, or otherwise. We have held these parameters fixed and shown that merely switching the legal regime from a rule to a standard can increase compliance, even when the state is weak.

This reasoning complicates some debates. Schäfer, for example, argues that low-income countries should prefer rules because standards require costly investments into human capital, putting a strain on resources.[19] Rules are easier to learn and apply. But we have shown that enforcement decisions about rules send clearer signals that can decrease compliance, especially when resources are scarce. For governments with limited enforcement capacity—including many low-income countries—standards have a strategic benefit. On the margin, this could cause lawmakers to pick standards over rules.

Presumably, strong states want regulated parties to know they are strong. If the parties know the state will enforce, they will not violate. But standards muddy the signal, and this could push strong states to prefer rules. To us, this seems counterintuitive. In the usual formulation, switching from rules to standards increases enforcement costs but, because standards respond to case-specific facts, decreases the drawbacks of inflexible laws. For strong states, the balance might tend to favor standards: they gain from flexibility and, given their resources, can manage the greater enforcement costs. Again, our analysis complicates this reasoning by adding a new factor. Strong states are eager to signal their strength, which should make them eager to adopt rules. Governments might choose rules not to lower their enforcement costs but to signal that their enforcement costs are already low.

Our analysis illuminates the choice of legal doctrine. Rule-like judicial opinions can promote certain values, especially predictability.[20] Yet courts often write vague opinions, like the infamous "all deliberate speed" formulation in *Brown v. Board of Education*. Some scholars attribute vague, standard-like opinions, especially in salient cases like *Brown II*, to acknowledgment by courts of their weakness and efforts to

[19]Hans-Bernd Schäfer, *Rules Versus Standards in Rich and Poor Countries: Precise Legal Norms as Substitutes for Human Capital in Low-Income Countries*, 14 Sup. Ct. Econ. Rev. 113 (2006).

[20]See, e.g., Antonin Scalia, *The Rule of Law as a Law of Rules*, 56 U. Chi. L. Rev. 1175 (1989).

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manage their institutional standing.[21] As described above, Staton and Vanberg argue that vague judicial opinions insulate courts from the perception that other actors are openly defying their orders.[22] Our work supports this reasoning by demonstrating how courts with limited enforcement capacity might enjoy greater compliance with their decisions under standards, irrespective of any separate or explicit concern with institutional prestige or public perceptions or avoiding conflicts with other branches of government.

The optimal choice between rules and standards is complex, and we do not claim that the informational effects we identify do or should drive that choice. But they might and perhaps should influence it in some circumstances. To influence that choice, states must have credible reasons apart from informational effects to choose one form of law or the other. If everyone knows the *only* reason a state would choose a standard is to mask weakness, then choosing a standard does not mask weakness. The choice between rules and standards seems complex enough to satisfy this condition.

VII. A Generalization

We have developed our core idea by contrasting rules and standards, but the logic is more general. The muddying effect manifests when four conditions hold: (1) the behavior of regulated parties is common knowledge, meaning everyone observes it, including the government; (2) regulated parties can observe enforcement or nonenforcement in others' cases; (3) extenuating circumstances can excuse otherwise unlawful behavior; and (4) regulated parties find it harder than the government to determine whether extenuating circumstances are present in others' cases.

We can tie these conditions to our running examples, starting with *Rules*. The emissions limit is a rule (15 micrograms), and *F* emits dark smoke with impunity. *S* sees the smoke and observes the absence of enforcement, so conditions (1) and (2) are satisfied, but condition (3) is missing. The rule does not allow for extenuating circumstances, so the state's failure to enforce sends a relatively clear signal. Now consider *Standards*, where the law prohibits "unreasonably dense smoke," and *F* again emits dark smoke with impunity. *S* sees the smoke and observes the absence of enforcement, satisfying conditions (1) and (2). The standard allows extenuating circumstances, and we presume the state has better information than *S* about whether *F* has such a circumstance (e.g., *F* makes steel for the war), so conditions (3) and (4) are satisfied.[23] The state's failure to enforce therefore sends a muddy signal.

Now consider our opening example involving speed limits. Bob sees Anna pass an officer while driving 64 miles per hour without getting a ticket. If the speed limit is a rule, "55 miles per hour," then conditions (1) and (2) are satisfied, but (3) is not. The signal is relatively clear, and Bob might conclude that he too can drive 64 (or faster). If the speed limit is a standard, "reasonable speeds," then conditions (1), (2), and (3) are satisfied, and the clarity of the signal depends on condition (4). If Bob believes the state has better information than he does about Anna's circumstances—for example, she is transporting a dignitary—then (4) is satisfied and the signal from

[21]See, e.g., Alexander M. Bickel, *The Least Dangerous Branch: The Supreme Court at the Bar of Politics*. By Alexander M. Bickel. (New York: The Bobbs-Merrill Co., Inc., 1962); Pfander, *supra* note 9.

[22]Staton & Vanberg, *supra* note 10.

[23]Through inspection, permitting, enforcement, and other means, the state will often have better information about a particular actor.

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nonenforcement is relatively noisy. If Bob believes his information is as good or better than the state's—Anna is his sister, he knows she does not have any special circumstances—then condition (4) is not satisfied, and the signal is relatively clear.

Although standards are a natural source of the muddying effect, other features of law can cause it as well. Rules and standards involve precision, where precise laws are "rules" and imprecise laws are "standards." The precision of law can be distinguished from its complexity.[24] Laws with many factors and exceptions are "complex," whereas laws with few factors or exceptions are "simple." Precision and complexity are independent. A limit on emissions of 15 micrograms and a limit on emissions of 15 micrograms unless the emitter has a Model X burner are both rules, but the former is simpler than the latter. Likewise, a standard becomes more complex the more considerations it takes into account. If "unreasonably dense smoke" depends on not just the social value of the emitter's activity but also its cost of abatement, background air pollution, and so on, then that will increase its complexity.

Complexity similarly affects the likelihood that the four conditions are satisfied. If the state fails to enforce the simple rule, condition (3) is not satisfied, and the signal is relatively clear. In contrast, if the state fails to enforce the complex rule, (3) is satisfied, and if the state has better information than observers about which factories do and do not use Model X burners, (4) is also satisfied, meaning nonenforcement sends a relatively noisy signal. Similarly, failure to enforce the simple standard will send a relatively clear signal compared to failure to enforce the complex standard.

Given the parallels,[25] we could mostly restate our conclusions in terms of complexity rather than precision, but to minimize redundancy we will restate only two. First, enforcing a simple law may be cheaper than enforcing a complex law because it requires less context-specific information, but failing to enforce a simple law is costlier than failing to enforce a complex law because it reveals more about the state's limited capacity. Second, a weak state that otherwise prefers simple law might choose a complex law to mask its weakness, and a strong state that otherwise prefers complex law might choose a simple law to showcase its strength.

VIII. Conclusion

We have argued that the precision of law influences not only the state's cost of enforcement but also the informational signals sent by enforcement decisions. While rules are cheaper to enforce, their nonenforcement sends a clearer signal about the state's limited capacity, potentially reducing compliance. By contrast, nonenforcement of a standard sends a noisier signal, creating uncertainty about the state's capacity that can improve compliance. These informational effects, which apply to both precision and complexity, complicate the conventional wisdom and suggest that the choice of the law's form has surprising strategic dimensions.

[24]See, e.g., Louis Kaplow, *A Model of the Optimal Complexity of Legal Rules*, 11 J. Law Econ. & Org. 150 (1995).

[25]Our analogy between precision and complexity is imperfect. With complex standards, regulated parties always suffer from some degree of law unawareness, but with complex rules that is not necessarily true. Notwithstanding any complexity, parties may be able to learn the rules. We do not believe this affects our basic argument.

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