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Abstract

This paper develops a repeated game model of the choice of doctrinal form by a higher court. Doctrine can take any point along a continuum from more determinate, rule-like legal commands to more flexible, standard-like directives. In deciding a case, the Supreme Court not only decides on a substantive outcome, but also chooses where on this continuum to set the doctrine. The lower court then applies the legal command to future cases. In doing so, it may wish to take into account new information, but the cost of doing so varies with the form of the legal doctrine. The model shows that in equilibrium doctrine ocsillates over time between more rule-like commands and more standard-like commands. What triggers the shift in doctrinal form are the lower court's "mistakes" when trying to implement the standard in the way the Supreme Court prefers. The mistakes induce the Supreme Court to cabin the lower court's discretion by issuing more rule-like legal commands for a certain number of periods. Too much constraint, however, produces error costs when the lower court cannot adjust the law appropriately to new circumstances, leading to a shift back to more standard-like doctrine. We derive comparative

statics showing how the length of the constraint phase responds to the degree of preference conflict between the courts. Finally, we illustrate the features of the model through a doctrinal case study of the law governing the voluntariness of confessions.

Keywords: Rules and Standards, Judicial Decisionmaking, Repeated Game Models; Judicial Hierarchy

1 Introduction

The United States federal court system divides functions among courts at different levels of the judicial hierarchy. The Supreme Court articulates legal doctrine that will guide decision-making by the lower federal courts. The lower courts are allocated the task of law application—they implement the guidance given by the Supreme Court in the form of legal doctrine by applying it to the myriad factual situations presented in actual cases. As a result, while the Supreme Court has the power to articulate broad principles, it must rely on the lower federal courts to determine outcomes across the mass of cases in accordance with its directions.

In deciding a particular case, the Supreme Court faces a choice as to how to articulate the doctrine that will govern similar, subsequent cases. That decision has been variously characterized as a choice between vagueness and specificity, narrowness and breadth, or, most famously, standards and rules. That choice in turn determines how much discretion lower courts will have when applying the precedent, thereby influencing the outcomes they reach.

Although the choice between rules and standards has been thoroughly explored by jurisprudence and law and economics scholars (see, for example, Kennedy 1976; Diver 1983; Schlag 1985; Sullivan 1991; Kaplow 1992; Sunstein 1994; Posner 2010:747-752), little attention has been paid to how doctrine operates in the context of the judicial hierarchy. This paper formally studies the choice of doctrinal form using a dynamic model of upper and lower court interactions. The aim is to understand how the Supreme

Court's efforts to influence case outcomes in the lower courts will affect their choice of doctrinal form. In addition to considering the factors that influence an initial choice on the spectrum between rules and standards, we also explore the dynamics of changes in doctrinal form. Under what conditions will a rule become a standard? When will a standard become a rule? Will legal commands ever swing back and forth—a more rule-like doctrine replaced by one more standard-like for some period of time, to be followed by a more rule-like doctrine again? Although our model is motivated by the Supreme Court's interactions with lower courts,[1] it is generalizable whenever the functions of law-declaration and law-application are separated.

The conventional framework for the discussion of rules and standards is well-established. Rules tend to be hard-edged and determinate; they constrain subsequent decisionmakers and limit in advance the relevant factors for future decisions. Standards are softer and more open-ended; they afford greater discretion to later courts to determine what is relevant to the decision in a case.

For law and economics scholars, the impact of the legal form on the behavior of private parties has been the foremost concern. Thus, Kaplow (1992) suggests that the more frequent the regulated activity, the more desirable a rule in order to provide low-cost information to private actors. Cooter and Ulen (1988) and Fischel (1985) note that rules facilitate private ordering: the clearer the entitlement, the easier it is to trade (But see Johnston 1995). On the other hand, Kennedy (1976:1773), Rose (1988:600) and others have argued that a bad actor can more easily evade rules, suggesting that standards

[1] We necessarily simplify the complexity of the judicial hierarchy, ignoring important differences between federal circuit and district courts and state courts. Of course, the relationships of each of these types of courts to the Supreme Court will differ, and judges on each will face different, additional constraints (e.g. review by the circuit court for district court judges; the need for collegial decisionmaking and the possibility of review en banc for circuit judges; the possible response of state political actors for state supreme court judges), but for purposes of the model, we treat them alike, focusing on their role in interpreting and applying Supreme Court precedent to specific factual situations.

may be preferable to ensure compliance with public norms.

Although theoretical arguments might favor one form or the other, in practice, legal doctrine often shifts in form from a rule to a standard, or standard to a rule, sometimes cycling back again to an earlier form (Schauer 2003, 2005; Posner 2010: 749; Holmes 1881:110).

In *Miranda v. Arizona*[2], for example, the Supreme Court replaced a "totality of the circumstances" test for the voluntariness of a confession with the hard-edged requirement that an explicit warning about the right to remain silent must be given in order for statements by a suspect to be admissible. Conversely, in *Planned Parenthood v. Casey*[3], the Court replaced *Roe v. Wade*'s[4] trimester approach, which set sharp boundaries for determining when a women has a right to terminate a pregnancy, with an undue burden standard that permits consideration of a wide variety of factors. Johnston (1995) and Rose (1988) document similar shifts between rules and standards in private law doctrines.

Some explain these shifts as the result of changing court personnel and a resulting shift in policy preferences (Sullivan 1991). Others argue that the disadvantages of rules in shaping private behavior become apparent when a rule is used, pushing courts to switch to standards. Likewise, the disadvantages of standards become apparent when they are used, pushing courts to switch to rules (Rose 1988; Johnston 1991).

Up to now, little attention has been paid to how interactions between upper and lower courts influence doctrinal form. This neglect is surprising in some ways, because lower courts play a crucial role in implementing whatever rules or standards are laid down by the Supreme Court. For the vast majority of litigants, it is the decisions of the lower courts—how they apply established doctrines—that give meaning and force to the pronouncements of the Supreme Court. Nevertheless, the rules and standards literature pays

[2]384 U.S. 436 (1966).
[3]505 U.S. 833 (1992).
[4]410 U.S. 113 (1973).

little attention to the vertical relationship between courts. At the same time, judicial politics scholars, who do pay attention to institutional structure and inter-court dynamics, traditionally ignored the function and form of doctrine. For a long time, the only concern was judicial votes: doctrine and legal reasoning were viewed as merely cover for judges' policy preferences, the true drivers of decisionmaking.

As a result of this gap, only a handful of prior studies have explored formally the role of legal doctrine in the judicial hierarchy.[5] McNollgast (1995) argue that doctrine serves as a form of communication, informing lower courts of the range of acceptable outcomes. Their model assumes that lower court judges are politically motivated actors, seeking to achieve their preferred outcomes through their decisionmaking. They do not seek to explain the particular form that doctrine takes, but rather describe doctrine as a signal by the Supreme Court to lower courts, informing them how to avoid reversal. Likewise, Bueno de Mesquito and Stephenson (2002) depict doctrine as a form of inter-court communication, emphasizing tradeoffs in achieving accurate communication when appellate judges choose between following or breaking with precedent. Trial court judges, in their model, are not strategic actors, but are assumed to seek to follow appellate court doctrine faithfully.

Lax (2011) and Jacobi & Tiller (2007) focus more directly on the choice of doctrinal form, albeit in one period models. These scholars posit that lower courts largely follow doctrine, but that they nevertheless may be able to exercise discretion depending upon the doctrinal form. Because lower courts may have differing policy preferences, higher courts choose a doctrinal form to optimally control lower court decisionmaking. The doctrinal form decision is

[5] Although many of these models frame the relationship between the Supreme Court and lower courts as a principal-agent relationship, we avoid this terminology for reasons explored in Kim 2011. We recognize some similarities in the structure of upper and lower court interactions and agency relationships, but think it preferable to clearly specify the terms of their interaction, rather than invoking the language, and implicitly the assumptions, of traditional agency relationships.

characterized as a dichotomous one: the higher court must choose between a fully determinate rule and an open-ended standard. In these models, factors such as the characteristics of the judges, ideological conflict, and the mix of cases presented drive doctrinal choice.

Consistent with the so-called case space model,[6] we view legal rules as guiding which cases (bundles of facts) should result in what outcomes, and follow the common assumption that judges have preferences that they seek to advance through their decisionmaking.[7] We also utilize the conventions of the rules and standards literature: what differentiates a rule from a standard is the ease with which new factors can be incorporated in future decisions (Kaplow 1992; Sunstein 1994). At the same time, we seek to explain the dynamic evolution of doctrine observed in practice, without resorting to ad hoc stories about changing judicial preferences.

Our model thus entails a number of innovations over prior work. First, we abandon the polarized views that characterize lower court judges either as unconcerned with legal principles, or as faithfully following Supreme Court doctrine without any regard for their own preferences. The model assumes that lower court judges have preferences over case outcomes that vary from Supreme Court preferences. At the same time, the form of the doctrine the Supreme Court articulates plays an critical role in their decision-making because doctrinal form makes deviations from Supreme Court precedent by the lower court more or less costly. Simply put, it is costlier for a lower

[6]The case-space model aims to "capture the substance and institutional features of judicial policymaking, putting cases and doctrine at the analytic center" (Lax 2011:137; Kornhauser (1992a, b, 1995)). This approach to modeling judicial behavior dominates the political science literature. It characterizes the work of appellate courts as twofold: producing case dispositions and generating legal rules. Cases present bundles of facts, and the function of legal rules is to divide cases into different dispositions (Lax 2011:133; see also Jacobi & Tiller 2007:326; McNollgast 1995:1639; Baker & Mezzetti 2011).

[7]By judicial "preferences", we do not necessarily mean to connote political or ideological goals. Rather, we assume that judges care about reaching the correct outcomes in cases they decide. The correct outcome in the view of a given judge may turn on ideological, jurisprudential, economic or other criteria. The important point is that different judges may differ as to what the correct outcome should be in any given case.

court to distinguish precedent when phrased as a rule than when phrased as a standard.[8]

Second, the Supreme Court does not face a dichotomous choice between a rule or a standard, but rather selects from a continuum of doctrinal possibilities that are more or less determinate, more or less constraining in subsequent cases. So viewed, the Supreme Court faces a tradeoff. More standard-like doctrine will make it easier for a lower court to take into account unanticipated, but relevant information, thereby avoiding problems of over- and under-inclusiveness. However, less determinate doctrine raises the risk that the lower court will use its discretion to take account of new factors the Supreme Court considers irrelevant.

Third, the model does not rely on fear of reversal to explain lower court behavior (see, e.g, Songer et al. 1994; McNollgast 1995). Accounts that rely principally on the Supreme Court's reversal power present a puzzle: why do lower court judges, who are assumed to be motivated by political, not legal factors, largely appear to follow precedent, even when the risk of reversal by the Supreme Court is vanishingly small? A number of mechanisms, such as Supreme Court "auditing" or litigant "signaling" have been suggested to explain the phenomenon (see, e.g., Cameron et al. 2000; Songer, et al. 1994). The fact remains, however, that "reversal is a particularly unimpressive sanction . . . where the likelihood of reversal by the Supreme Court in any individual case is so small as to render it essentially meaningless as a sanction" (Haire, et al 2003:146).

In our framework, the Supreme Court exercises power solely by establishing the doctrine that frames the lower court's subsequent choices. Changes in the doctrine impact the cost structure shaping future lower court decisions by altering the de facto amount of discretion they have. Lower courts are

[8]In this way, the model tracks Stephenson's (2009) informal description of a "Realist" judge. That is to say, the cost of writing an opinion to reach a preferred outcome turns on the form of the legal materials, specifically whether the doctrine is more rule-like or more standard-like.

thus motivated to follow precedent in order to preserve legal doctrine that affords greater discretion in future cases, rather than by an outsized fear of reversal in individual cases.

Finally, we use a repeated game model to capture the dynamic interaction between upper and lower courts, moving beyond the static games in the literature.[9] The repeated game model predicts that doctrine will evolve endogenously as the Supreme Court learns that its prior doctrine is not producing the "correct" results in enough cases.

More concretely, in an equilibrium of the repeated game, when the Supreme Court issues a standard, the lower court attempts to cooperate by only incorporating new information when the Supreme Court would want the information considered. Unfortunately, the lower court is occasionally mistaken about the Supreme Court's preferences. The Supreme Court responds to mistaken applications of precedent by shifting the doctrine to more rule-like commands. Such commands cabin or constrain the lower court's discretion. Too much constraint, however, is costly to the Supreme Court, because in some cases new information that it would find relevant is excluded from consideration. Hence, the possibility of cycling back to a standard.

The paper proceeds as follows. Section 2 informally develops the intuitions that underlie our model. Section 3 sets out the one-period model. It shows how the Supreme Court's choice of doctrinal form responds to (i) the weight the Supreme Court places on avoiding considerations of factors it deems irrelevant; (ii) the weight the Supreme Court places on a failure of the law to properly reflect changing circumstances and (iii) the degree of preference divergence betwee the courts. This one-period model formally captures many of the intuitions of the rules and standards literature. Section 4 presents the repeated game model and derives the main result: the endogenous ocsillation

[9]To the extent dynamics have played a role in the literature, it has been to explain why judges follow precedent at all. (O'Hara (1988); Rasmussen (1994)).Notably, these models are primarily about judges within a single tier of a judicial hierachuy; not, as here, between judges in different tiers.

between rules and standards over time. Section 5 shows how the predictions of the model track the evolution of the law governing the voluntariness of confessions. Section 6 concludes. Proofs of all the propositions are in the appendix.

2 Informal Description of Doctrinal Choice

Rules and standards do not exist in their pure form. Any given rule, no matter how absolute it appears, is inevitably ambiguous around the edges (Hart 1961; Schauer 2005). A subsequent court may avoid the rule by declaring that the rule simply does not apply to the new situation, or that the pending case falls within an exception. Conversely, legal directives stated in the form of a standard are not wholly without content. At a minimum, the facts and outcome of the case in which a standard is articulated constrain how it is applied in the future. If, for example, the Supreme Court determines that a constitutional violation exists after balancing a particular set of facts, a later court has little discretion to reach a different outcome in a subsequent case presenting identical facts, even when the precedent is phrased as an open-ended standard. Rules and standards, then, do not represent a rigid dichotomy, but rather the endpoints on a continuum (Sullivan 1991).

Commands of the Supreme Court may be more or less rule-like, farther or closer to the pure form of a standard. Where the Court's directives fall on this continuum will shape the choices available to lower courts in subsequent cases. As noted above, the more rule-like a command, the costlier it is for a lower court to incorporate new information in resolving future cases. The lower court will have to expend effort devising a plausible justification to explain why the rule does not apply. In addition, judges are socialized to follow legal norms and will likely feel more constrained by doctrines formulated in a more rule-like manner. And any evasion of a clear rule may have reputational costs for the judge, who may be subject to professional or

even public criticism, or for the judiciary as a whole, if its public legitimacy suffers. Conversely, the more standard-like the doctrinal form, the less costly it will be for a lower court to incorporate new and unanticipated information in resolving future cases.[10] Because standards, by definition, afford more discretion, the judge who considers additional factors cannot be said to violate legal norms.[11]

From the Supreme Court's perspective, the more rule-like the doctrine, the more likely it is that the lower courts will follow the directive, considering only the facts identified by the Supreme Court as relevant. However, the Supreme Court has limited knowledge about the great variety of factual situations in which the rule might become applicable and knows that it cannot anticipate all of these circumstances. In some future cases, a new factor may arise that the Court would prefer to be taken into account. If the Court has articulated a rule-like command, the cost of incorporating new information is greater, and therefore the lower court is less likely to take it into account. The result is the oft-noted problem of the under- and over-inclusiveness of rules. On the other hand, if the Supreme Court issues a more standard-like command, the lower court will have greater leeway to incorporate not only new information that the Supreme Court would agree is relevant, but also factors that the Court would not want considered.

Because the Supreme Court cannot know in advance what new factors will arise in subsequent cases, it faces the tradeoff outlined in the introduction. A more rule-like command prevents the incorporation of new information by the lower court when the Supreme Court would want that information to affect the outcome. But rules have an upside too: they prevent the incorporation of information in those cases where the Supreme Court would deem the new information irrelevant.

A concrete example illustrates these points. Suppose that the Supreme

[10] For a paper making this same point informally, see Heytens (2008).

[11] For all full discussion of the relationship between compliance with legal norms and standards, see Kim (2007).

Court must decide under what conditions a confession obtained from a criminal suspect is involuntary, such that it would be inadmissible in a subsequent criminal trial. The Court has a range of options for articulating how the admissibility of confessions should be determined in future cases:

- Announce a "pure" standard: State that the admissibility of a confession depends upon its "voluntariness" in light of all the surrounding circumstances.

- Announce a balancing test: State that factors suggesting coercion (such as the length of the interrogation and the age of the suspect) should be balanced against other factors indicating volunariness (such as the lack of physical coercion and the provision of information regarding constitutional rights). How these factors balance out will determine whether an incriminating statement should be admitted.

- Announce a presumption: State that if a confession was obtained while the suspect was in police custody, it is presumptively inadmissible unless the prosecution can establish circumstances showing that the statement was voluntarily given.

- Announce a "pure" rule: State that a confession obtained through interrogation while the suspect was in police custody is not admissible unless the police gave a specific warning informing the suspect of his constitutional rights before questioning began.

These options are points on a continuum. Depending upon how detailed and determinate the instructions given by the Supreme Court, the established doctrine could fall at one of these points or elsewhere along the spectrum between a rule and a standard.

Now suppose that the lower court must decide a subsequent case in light of the doctrine laid out by the Supreme Court, and that it includes a circumstance not considered in the precedential case. For example, suppose the

precedential case involved interrogation of a suspect while in isolation at a police station. The new case involves a confession elicited by police questioning of a suspect by the side of a road after his vehicle was stopped for a traffic violation. The lower court believes that the new circumstance–the fact that the questioning occurred in a public place–should be taken into account in deciding the voluntariness of the confession.

The lower court's willingness to do so, however, will depend upon the form of the legal doctrine set out in the relevant precedent. More specifically, if the Supreme Court has articulated an open-ended standard, the lower court can take into account the new setting quite easily, at very low cost. If, on the other hand, the Supreme Court has articulated a rule, the lower court will feel more constrained. It may still take the new setting into account in reaching its conclusion, but will find it more costly to do so. Avoiding the outcome suggested by the precedential case will require it to make a reasoned argument that questioning a suspect by the side of a public road is not "police custody," that the concerns regarding coercion that motivated the rule are not present in that context, and that therefore, no explicit warning is required to render the confession voluntary.

Of course, the Supreme Court did not consider the admissibility of confessions obtained outside the police station in the earlier case. Once the new issue is raised, the Court may agree with the lower court that the public setting should make a difference in the outcome. Knowing that such situations may arise, the Court may want to insure that such an unanticipated, relevant factor is taken into account by formulating the doctrine as a standard. However, by doing so, the Court also makes it easier for the lower court to take into account another unanticipated factor, one that it would regard as irrelevant.

For example, a lower court may wish to admit statements made by a suspect while in custody, but not in response to specific questioning by the police. The Supreme Court, however, may view the fact that no specific

questions were posed as irrelevant to determining the voluntariness of the confession. If the relevant doctrine is framed as a standard, the lower court will face little cost in incorporating this new factor to avoid the requirement of a prior warning.

Thus, the Supreme Court's choice of doctrine – how rule-like to make the legal directive – depends upon how it trades off losses when the lower court fails to incorporate relevant information against losses when the lower court incorporates irrelevant information (from the Supreme Court's perspective).

Having this informal description in hand, we now build the one-period model. In the formal model that follows, we put aside problems of collegial decision-making and treat the Supreme Court has a unitary actor. Similarly, we simplify the multi-tiered structure of the judicial hierarchy by focusing on the interaction between the Supreme Court and a generic lower court. Following the description of the one-period model, we turn to the repeated model.

3 Doctrinal Choice: The One Period Model

When deciding a precedential case, the Supreme Court does two things—it determines the outcome (which party prevails) and it chooses the form of the doctrine. Focusing on the second aspect, the Court's choice can be formalized as the selection of a doctrinal form, α, between 0 and 1, which indicates the looseness of the legal directive. If $\alpha = 0$, the Supreme Court articulates a pure rule. If $\alpha = 1$, the Supreme Court sets a pure standard. As noted above, doctrinal form exists on a continuum, and so the Court may select α between 0 and 1.

After the Supreme Court announces the doctrine, subsequent cases arise that involve a new, unanticipated factor. The lower court must decide whether to consider the new factor in reaching its decision in light of the Supreme Court's precedent.

The new unanticipated factor falls into one of two categories. With probability $(1-p)$, the Supreme Court and lower court agree that the new factor is relevant to the decision and should be considered in cases involving that factor. Stated differently, both courts would agree that excluding the new information by strict application of the precedent would produce an incorrect outcome due to the precedent's over- or under-inclusiveness. With probability p, the courts disagree about the relevance of the new factor: the Supreme Court would not want the new factor considered in subsequent cases, while the lower court believes it should be incorporated in order to reach the correct outcome.[12]

These probabilities also capture the extent of the preference conflict between the courts. With probability p, the courts have divergent preferences. With probability $1-p$, the courts have shared preferences.

3.1 The Lower Court

When the lower court encounters a new factor not anticipated by existing precedent, it must decide whether or not to incorporate the information. Incorporation means that the presence of the new factor leads the lower court to reach a different outcome than it would have if it strictly applied the precedent. In some cases, the new factor may present a compelling reason to reach a different outcome; in other cases, the factor may be less

[12]Note that the model leaves aside two other possible situations. First, the Supreme Court and lower court might both prefer not to incorporate the new information. Because they agree the new information is irrelevant, and neither a rule nor a standard would call for its consideration, the situation is unimportant for choosing a doctrinal form. In the second possible scenario, if the Supreme Court knew about the new factor, it would incorporate it, but the lower court prefers not to consider it. The Supreme Court cannot identify and specify the factor in advance, and the lower court will never exercise its discretion to take it into account. Because in this situation, the choice of a doctrinal form will not give the Supreme Court any additional leverage over the lower court's choices, the possibility that this situation may arise will not affect the Supreme Court's doctrinal choice and is omitted from the model. We do, however, consider the possibility that the lower court fails to incorporate information the Supreme Court considers relevant because of the constraints of doctrine. See Section —, below.

compelling. At the same time, the cost of incorporating new information will depend on the doctrinal form. More standard-like precedent makes it easy to incorporate new information; more rule-like directives will make it more costly to do so. Thus, whether the lower court incorporates the new factor in any given case depends upon how compelling the factor is in that case and the form of the legal directive.

Aggregating the decision to incorporate or not across the mass of cases, we model the lower court as selecting the fraction of cases in which the unanticipated factor is taken into account. In doing so,the lower court could spend effort trying to decipher what the Supreme Court itself would prefer done, if it were aware of the new factor. Notably, even if the lower court tries to do this, it might make a mistake, erroneously believing that the Supreme Court would consider the new factor relevant when it does not.

In the one period model, the lower court's investigation choice is simple. Because, by assumption, the Supreme Court cannot respond to the lower court's decision by reversing the case or revising the precedent, the lower court has no incentive to expend effort to discern the Supreme Court's preferences. Instead, the extent to which it incorporates new information will turn solely on the doctrinal form chosen by the Supreme Court. As we will explore in the next section, in the repeated game the Supreme Court can respond to the lower court's choices, and so the lower court's decision to investigate or not, and the possibility of mistake become important.

Because the lower court does not investigate in the one-period model, it simply decides the fraction of cases (r) in which the new factor affects the outcome. It makes this choice to maximize its payoff, defined as

$$B(r) - C(r, \alpha)$$

The benefit to the lower court increases as the fraction of cases in which the new factor is incorporated increases ($B_r > 0$), but at a decreasing rate

$(B_{rr} < 0)$.[13] The cost increases as the lower court incorporates information in more cases $(C_r > 0)$ and does so at an increasing rate $(C_{rr} > 0)$.[14] In addition, as the looseness of the legal command increases, the marginal cost of incorporating new information decreases $(C_{r\alpha} < 0)$. In the event the Supreme Court issues a pure standard, there is no cost to incorporating new information $(C(r;1) = 0)$ and the lower court will take the new factor into account in every case, even where the factor is not highly compelling.

Maximization by the lower court results in the following first order condition

$$B_r = C_r$$

Solving yields an optimal fraction of cases ($r^*(\alpha)$) in which the lower court will consider the new factor. Focusing on the interior solution, $0 < r^*(\alpha) < 1$, an intuitive comparative static can be derived, namely

$$\frac{\partial r^*}{\partial \alpha} = \frac{C_{r\alpha}}{B_{rr} - C_{rr}} > 0$$

In words, as the legal command becomes looser – less rule-like – the lower court incorporates the new factor in a larger proportion of the cases.

[13] This function form can be justified as follows: suppose there are 10 cases $\{Y_1 ... Y_{10}\}$ involving a new factor y, which the lower court believes should change the outcome. The strength or significance of that new factor differs across cases, such that the 10 cases can be ordered from Y_1, in which the factor is most compelling, to Y_{10}, in which it is least compelling. The lower court does not know whether the Supreme Court would agree that the factor is relevant, but must decide in which cases to change the outcome from, say, liable to not liable, given the doctrinal form, α. Further suppose that the lower court feels sufficiently constrained by the doctrine that it incorporates the new factor in only half the cases. It will do so in cases $Y_1, ... Y_5$, the cases in which the new factor is most significant. If it decided to incorporate the new factor in one more case, it would do so in case Y_6. The lower court would reap an additional benefit from incorporating in the sixth case, but its gain from doing so would be less than its gain from incorporating in Y_5, because the new factor is less compelling in Y_6 than in Y_5.

[14] In other words, deviations from established precedent become more costly as they become more frequent, and therefore, more visible to the upper court and to the public.

3.2 The Supreme Court

In deciding the form of the legal command, the Supreme Court anticipates the reaction of the lower court. When deciding subsequent cases, the lower court could deviate from the Supreme Court's preferred outcome in two directions. First, the lower court and Supreme Court (if it had considered the issue) might agree that an unanticipated new factor is relevant (a situation that arises with probability $(1- p)$. Yet despite this agreement the lower court fails to allow the new factor to play a role in the resolution of some of the cases because it feels constrained by the earlier precedent. In other words, strict application of precedent is over- or under-inclusive. Denote the weight on this type of loss by L.

On the other hand, the lower court might have a differing view of the relevance of the new factor (which occurs with probability p) and might incorporate it when the Supreme Court would deem it irrelevant. Taking the new factor into account makes the law less predictable without improving the outcome, leading to the wrong result in the eyes of the Supreme Court. Denote the weight on this type of loss by E.

Knowing that the lower court will select the fraction of cases in which to incorporate new information in response to the doctrinal form it chooses, the Supreme Court sets α to maximize its expected payoff. Formally, the Supreme Court maximizes

$$\Pi_{sc} = -pE(r(\alpha))^2 - (1-p)L(1-r(\alpha))^2$$

The fractional terms are squared because the Supreme Court's loss from either type of error increases at an increasing rate.[15] In other words, the

[15] Representing Supreme Court preferences in this manner is convenient. One could have the Supreme Court have a benefit, b, from incorporation, which is increasing at a decreasing rate, but only accues if the courts agree. Likewise, the Supreme Court could suffer a cost of incorporation, c, which increases at an increasing rate, but only accues if the court disagree. The Supreme Court's expected payoff then would be $(1-p)b - pc$. Like the payoff in the text, this payoff would be maximized if the lower court sets $r = 1$

first few cases where the lower court's decision diverges from the Supreme Court's preferences are less costly to the Court than subsequent cases. This functional form can be justified by assuming that the Supreme Court's payoff decreases more sharply the more the overall pattern of outcomes differs from what it believes to be correct.

Given this payoff function, the Supreme Court faces a tradeoff in selecting doctrinal form. If it makes the command more standard-like ($\alpha \rightarrow 1$), the lower court responds by incorporating new information in a larger fraction of cases. If, ex post, the Supreme Court does not believe the new factor should be relevant, it suffers a loss from the undesirable incorporation.

On the other hand, if the Supreme Court makes the legal command more rule-like ($\alpha \rightarrow 0$), the doctrine "constrains", meaning the lower court incorporates new information in a smaller fraction of cases. As a result, the lower court declines to incorporate new information even when, ex post, the Supreme Court thinks the factor should be relevant to the outcome. Accordingly, a rule-like doctrine can also lead to losses for the Supreme Court.

In the one-period problem, the Supreme Court picks the form of the doctrine to balance the two competing effects. The first proposition establishes the relationship between the optimal form of doctrine (α^*) and the parameters of the model.

Proposition 1 *(A) The greater the probability of divergent preferences between the courts, the stricter, or more rule-like, the legal directive issued by the Supreme Court will be (formally, α^* is a (weakly) decreasing function of p).*

(B) The greater the weight the Supreme Court places on the loss from over- and under-inclusiveness, the looser, or more standard-like, the legal directive (that is, α^* is a (weakly) increasing function of L).

(C)The greater the weight the Supreme Court places on the loss from undesirable incorporation of new factors, the stricter, or more rule-like, the

only when the courts agree.

legal directive (that is, α^* is a (weakly) decreasing function E).

Proposition (1) captures the core insights of the rules and standards literature. In areas of law where lower courts have preferences that diverge widely from the Supreme Court's (i.e., p is large), the Court will likely resort to more rule-like commands. In areas of law where the situation on the ground is rapidly changing, unanticipated information is more likely to be relevant, and therefore, the weight placed on losses from an over- or under-inclusive doctrine (L) is likely to be large. As a result, more standard-like commands should be attractive to the Supreme Court. And in areas where the Supreme Court considers predictability to be particularly important, it will view the incorporation of a new, but irrelevant factor as particularly costly, (i.e., E is large). Thus, it will resort to more rule-like doctrines.

What remains unexamined is doctrinal evolution: movements between rule-like and standard-like commands over time. Legal doctrine often displays these sorts of movements. These changes could be explained by external shocks, such as a change in the composition and hence, the preferences, of the Supreme Court. We are interested, however, in how such movements might arise endogenously, which requires a dynamic model. Before considering the repeated game, we first consider the payoffs in the one-period model and the potential for inter-court cooperation.

3.3 The Possibility of Cooperation

In the one period model, the Supreme Court chooses the optimal form of the legal command (α^*) in light of the anticipated actions of the lower court. Its expected payoff is

$$\Pi^*_{SC} = -pE(r(\alpha^*))^2 - (1-p)L(1-r(\alpha^*))^2$$

The lower court, in turn, selects the fraction of cases in which it will incorporate new information based on the form of the doctrine articulated by the

Supreme Court (α^*). Thus, its payoff is

$$\pi^*_{lc} = B(r(\alpha^*)) - C(r(\alpha^*); \alpha^*)$$

Now imagine the courts anticipate the following "deal." The Supreme Court will issue a pure standard ($\alpha = 1$), granting the lower court maximum discretion to decide whether or not to incorporate a new factor. The lower court agrees to use that discretion as the Supreme Court would prefer: to incorporate the new factor *only* in cases the Supreme Court would agree that the factor is relevant. The Supreme Court is better off under such an arrangement because it minimizes its losses due to the over- or under-inclusiveness of a rule, while also avoiding losses from the incorporation of irrelevant information. And because the lower court sometimes agrees with the Supreme Court that the new information is relevant, it may be better off cooperating, rather than having its decisions tightly constrained by doctrine.

In order to cooperate in this way, the lower court must expend effort to discern the Supreme Court's preferences regarding the new factor. For example, it could examine the text of judicial opinions, including non-binding concurrences and dissents, or consider other writings by the Justices and attempt to effectuate the broad policy goals expressed by the Court (which could include not only substantive goals, but goals involving optimal legal form as well). Thus, the lower court faces a choice whether or not to invest in trying to anticipate what the Supreme Court would want done.

Even if the lower court tries to cooperate, however, it might not accurately predict the Supreme Court's preferences. It is hardly a simple matter to discern the preferences of another actor regarding situations that actor has never previously encountered, and so the lower court faces a probability of β that it will make a mistake. A mistake occurs when the lower court believes the Supreme Court would consider the new factor relevant when, in fact, it does not.[16] When cooperating, the lower court investigates and

[16] We do not include in the model the possibility of mistakes in the other direction–i.e.,

incorporates a new factor in all cases where it percieves that the Supreme Court would agree that it is relevant. It will perceive agreement when it correctly recognizes that the Supreme Court agrees and when it mistakenly believes so, even though the two courts actually disagree. The lower court's expected payoff from cooperation is thus

$$\pi_{lc}^{coop} = p\beta B(1) + (1-p)B(1)$$

Given the risk of mistake (β) in cases in which the Supreme Court prefers no incorporation (p), the Supreme Court's expected payoff from intercourt cooperation is

$$\Pi_{SC}^{coop} = -p\beta E$$

Of course in the one period model, cooperation will not occur because the lower court would simply incorporate new information in all the cases it wanted to, if given the flexibility to do so. And knowing this, the Supreme Court would not grant it complete discretion by issuing a pure standard.

Repeated interactions, however, create the possibility that the payoffs from cooperation might be realized. In particular, assume that $\pi_{lc}^{coop} > \pi_{lc}^{*}$ and $\Pi_{sc}^{coop} > \Pi_{sc}^{*}$: the courts prefer to cooperate if possible.

4 Repeated Model

Suppose now that the single period game repeats an infinite number of times. The Supreme Court selects a doctrinal form when deciding a precedential

the situation in which the lower court mistakenly thinks the Supreme Court would disagree with it and not want the new factor incorporated when in fact it would. Work in cognitive psychology demonstrates that decision-makers are often affected by confirmation bias–the tendency to assume that others agree with their beliefs (Nickerson 1998). If confirmation biases are operating, lower courts are far more likely to mistakenly believe that the Supreme Court agrees with them than to believe that the Supreme Court doesn't agree with them.

In any event, this assumption eases notation without much loss of generality. Indeed, it can be shown that all the results hold with two types of mistakes, given some additional assumptions on the parameters.

case. The lower court applies the precedent in a number of subsequent cases in period one. The Supreme Court observes the outcomes across this group of cases and decides whether to keep the form of the doctrine or to change it. In the next period, the lower court applies the established or revised precedent, the Supreme Court again observes the outcomes and decides whether to respond, and so on. The courts share a common discount factor δ.

Notably, in this model, the Supreme Court does not review and reverse the outcome in any individual case. Instead, its power resides in its ability to change the doctrinal form, making it more or less constraining. Of course, in reality the Court can only do so by hearing and deciding a specific case. It might, however, change the form of a doctrine – making it more rule-like or more standard-like – without necessarily reversing the decision below. Because we are primarily interested in the Court's power over doctrine rather than its reversal power, our model ignores the process of selecting individual cases for review.

In equilibrium of the repeated game, the Supreme Court issues a pure standard in the initial phase – the trust phase – anticipating the benefits of cooperation.[17] As seen above, if the lower court cooperates by attempting to effectuate the Supreme Court's preferences, its expected payoff is

$$\pi_{lc}^{coop} = p\beta B(1) + (1-p)B(1)$$

Alternatively, the lower court might choose not to invest effort, but instead to incorporate whenever it believes a new factor should be relevant to the

[17] As in many repeated game models, this one has multiple equilibria, including one where the one-period strategies are repeated every period. We focus on this one because it is of the most interest.

correct outcome.[18] Its payoff from acting non-cooperatively is

$$\pi_{lc}^{no-coop} = B(1)$$

The gains to the lower court from non-cooperation are thus

$$\pi_{lc}^{no-coop} - \pi_{lc}^{coop} = pB(1)(1-\beta)$$

which increase as disagreement between the two courts about the relevance of the new information increases.

After the lower court chooses whether to cooperate or not, the Supreme Court observes the case outcomes in that period. It also learns about the existence of the new factor and whether or not it agrees that it is relevant. If the Supreme Court agrees with the lower court's conclusions about the new factor, it suffers no loss. If their preferences differ, but the lower court fully cooperated and made no mistakes, its decisions would again coincide with what the Supreme Court prefers. It might turn out, however, that the lower court has incorporated a new factor that the Supreme Court deems irrelevant.

At this point, the Supreme Court suffers loss because of the erroneously decided cases, but it cannot readily determine the cause. One possibility is that the lower court cooperated–that is, it tried to discern the Supreme Court's preferred outcome–but made a mistake. Another possibility is that the lower court did not even try to anticipate the Supreme Court's preferences, but simply incorporated the new factor in all the cases where it thought it relevant. Because the Supreme Court cannot directly observe the payoff to the lower court, it faces a non-trivial signal extraction problem – it cannot know whether the lower court failed to cooperate or made a mistake

[18] Non-cooperation does not necessarily mean that a lower court judge is acting in a deliberately ideological or defiant manner. It might also occur when a judge makes little effort to overcome quick, intuitive judgments (Guthrie et al. 2007).

in assessing the Supreme Court's preferences.[19]

Unable to distinguish these two situations, the Supreme Court attempts to deter non-cooperation by issuing more constraining, more rule-like, doctrine following any loss. This doctrinal directive corresponds to the optimal legal form in the one-period equilibrium, α^*. In this second phase, the constraint phase, the lower court chooses the proportion of cases incorporating new information based on α^*, $r(\alpha^*)$. The restrictive doctrinal form limits the Supreme Court's losses from non-cooperative behavior by the lower court. Yet the doctrinal form also constrains the lower court from incorporating new factors that the Supreme Court would agree are relevant. Thus, the Court is guaranteed to suffer losses under the more constraining standard, and after a period of time, t, reverts back to a standard.

More formally, this interaction can be captured as follows: The Supreme Court enunciates a standard and the lower court chooses whether to cooperate or not. Let V^+ be the expected value of the stream of payoffs to the lower court when the courts cooperate:

$$V^+ = \pi_{lc}^{coop} + (1-p)\delta V^+ + p(1-\beta)\delta V^+ + p\beta\delta V^-$$

which reduces to

$$V^+ = \pi_{lc}^{coop} + (1-p\beta)\delta V^+ + p\beta\delta V^- \quad (1)$$

This equation captures the immediate payoff to the lower court from cooperating plus the probabilities that the trust phase will continue in the future or be terminated by the imposition of a constraint phase following the mistaken application of precedent.

In this equation, V^- is the expected value of the stream of payoffs to the lower court in the constraint phase, assuming that that phase lasts for t

[19] In this way, the model is in the same spirit as Green and Porter (1984) and Tirole (1987: 263-265).

periods:

$$V^- = \pi^*_{lc} + \delta\pi^*_{lc} + ...\delta^{t-1}\pi^*_{lc} + \delta^t V^+ = \pi^*_{lc}\sum_{i=0}^{t-1}\delta^i + \delta^t V^+$$

Plugging V^- into the definition of V^+ yields

$$V^+ = \pi^{coop}_{lc} + (1-p\beta)\delta V^+ + p\beta\delta\left[\pi^*_{lc}\sum_{i=0}^{t-1}\delta^i + \delta^t V^+\right]$$

In the trust phase, the lower court might choose not to cooperate. If it does so, it gains the immediate benefit of non-cooperation in the initial period ($\pi^{no-coop}_{lc}$) and continued payoffs from cooperation (V^+) if the Supreme Court happens to agree with it (a situation that occurs with probability $1-p$). At the same time, the lower court risks a lower stream of payouts if the Supreme Court disagrees and imposes a constraining doctrine (pV^-). In order for the strategies described above to constitute a sub-game perfect equilibrium, the lower court must be better off cooperating, even with the risk of mistake, than not cooperating in the trust phase. This condition can be stated formally as

$$V^+ \geq \pi^{no-coop}_{lc} + \delta(1-p)V^+ + \delta pV^-$$

On the left hand side of the equation above, plug in for V^+ from equation (1). Then, after some manipulation, observe that it is in the lower court's interest to cooperate whenever

$$p(1-\beta)\delta[V^+ - V^-] \geq \pi^{no-coop}_{lc} - \pi^{coop}_{lc}$$

or

$$\delta[V^+ - V^-] \geq B(1) \tag{2}$$

Equation (2) expresses the basic trade-off in the repeated model for the lower court. Not cooperating in the trust phase gives the lower court a gain of $B(1)$ if the courts disagree and the lower court would not have made a mistake in inferring the Supreme Court's intent. Cooperating, by contrast, means that the lower court preserves the boost in the future stream of payoffs associated with avoiding imposition of the constraint phase in this state. The inequality ensures that the one-time short term gain from not cooperating is not worth the long term cost when the Supreme Court responds by imposing greater constraints.

Finally, in equilibrium, the lower court's discounted stream of payoffs in the repeated game is

$$V^+ = \frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^* \sum_{i=0}^{t-1} \delta^i}{1-(1-p\beta)\delta - p\beta\delta\delta^t}$$

Proposition 4 in the appendix shows that this payoff is strictly decreasing in the length of the doctrinal constraint phase, t.

Turning to the Supreme Court, let W^+ be the discounted stream of payoffs in the trust phase if the lower court cooperates and W^- be the discounted stream in the constraint phase. We have

$$W^+ = \Pi_{sc}^{coop} + (1-p\beta)\delta W^+ + \delta p\beta W^-$$

and $W^- = \Pi_{sc}^* \sum_{i=0}^{t-1} \delta^i + \delta^t W^+$

Solving for W^+ results in

$$W^+ = \frac{\Pi_{sc}^{coop} + \delta\beta\Pi_{sc}^* \frac{1-\delta^t}{1-\delta}}{1-(1-p\beta)\delta - p\beta\delta\delta^t}$$

As with the lower court, the payoff to the Supreme Court is strictly

decreasing in the number of periods of more constraining doctrine.[20]

The next proposition establishes an equilibrium of the repeated game.

Proposition 2 *Set the length of the period of constraining doctrine, $\bar{t}$, which is sufficiently long such that equation (2) holds. Under this condition, there exists a subgame perfect equilibrium of the repeated game where legal doctrine ocsillates between standards and more rule-like commands.*

This proposition immediately leads to the question about the "optimal" length the Supreme Court should stick with rule-like, more constraining doctrine. Since the payoffs to both courts decrease in $\bar{t}$, the constraint phase that maximizes W^+ and V^+ is the one where equation (2) just holds. The equality depends on the probability of preference difference between the courts, as stated in the next proposition.

Proposition 3 *Consider any equilibrium of the form described in proposition (2): the length of the constraint phase that maximizes the joint welfare of the courts increases (weakly) as the probability of preference conflict between the courts (p) increases.*

4.1 Simple Things The Theory Tells Us About Legal Doctrine

Propositions (2) and (3) provide a number of insights into doctrinal evolution. The doctrine starts out as a standard. Once the standard has been articulated, the lower court "reads the tea leaves" in an attempt to infer how the Supreme Court wants the standard applied. The lower court tries to cooperate. Unlike in many previous models of judicial behavior, the description of lower court behavior matches what circuit judges claim to be doing in practice. Notice that the lower court complies in this model – not out of fear

[20] This result immediately follows by the same logic as in proposition 4.

of reversal – but rather because they value doctrinal flexibility; the ability to easily incorporate new information about unanticipated factors in future cases.

Occasionally the lower court judges fail: they misapply the standard. The Supreme Court responds to a mistake by issuing a more constraining doctrine. For $\bar{t}$ periods, the Supreme Court issues statements basically reaffirming the rule, but one can think of each statement as adding context to the rule, but continuing to restrict the discretion of the lower court. Finally, the Supreme Court moves back to a standard.[21]

Interestingly, both courts understand that the only time the Supreme Court has a negative payoff is when the lower court makes a mistake in its efforts to channel the Supreme Court's preferences. Yet issuing a more constraining doctrine following the mistake is needed to maintain incentives: to induce the lower court to spend the time in the first place attempting to unravel what the Supreme Court would want done applying the doctrine to new settings.

The Supreme Court thus can say – as it often does – that the standard is "unworkable." This is not code for the lower court has used its discretion to advance a different policy agenda. Even when the lower court is attempting to apply the standard as the Supreme Court intends, in equilibrium the standard is, in fact, unworkable. The lower court did not understand the instruction from the Supreme Court.

Judicial policy preferences play a different role here from most models. Greater preference differences between the two courts increase the lower court judge's incentive to take the easy road; to fail to even attempt to figure out

[21] As in Green and Porter (1984), the equilibrium is not "renegotiation proof." It can be made so. Upon seeing a standard, let the lower court randomize, according to a public device, between attempting to faithfully apply the standard and its best deviation. Set the randomizing parameter such that the Supreme Court receives the same payoff from issuing a standard as in the constraint phase – and, as a result, the Supreme Court does not want to renegotiate. Second, set the constraint period just long enough that the lower court is indifferent between acting faithfully and deviating.

how the Supreme Court would want the doctrine applied to new circumstances. As a result, greater preference difference increase the length the doctrinal constraint phase must take following a mistake in application of the standard. The Supreme Court needs to increase the length this constraint phase to provide greater deterrence.

On a slightly different front, standards occur in the repeated model even though the two courts do not share values. In the one-period model, if the Supreme Court issues something standard-like, it must bear the loss associated with the lower court purposively seizing on the looseness of the standard to accomplish its own ends (on this same point, see Lax (2011)). In the repeated model, the lower court – no matter how much it disagrees with the Supreme Court – doesn't act this way. Instead, it tries to unravel what the Supreme Court would want done.

Finally, the focus here has been on the equilibrium with a pure standard and cooperation between the courts. To establish the equilibrium, we searched for the minimum number of constraint periods such that lower court has an incentive to try to unravel the Supreme Court's intent with respect to unanticipated factors. Yet this might be a very long time, with each extra period of constraining doctrine hurting the Supreme Court. As a result, the equilibrium studied might not be the one that maximizes the Supreme Court's long run payoff.

One could imagine an equilibrium where the Supreme Court announces something more constraining than a pure standard in the trust phase. Then, the lower court's payoff to deviating and not cooperating would fall because incorporating in a large number cases now costs more. Since the profit from deviation is smaller, the Supreme Court would need to constrain for fewer periods to maintain incentive compatibility; that is, to ensure the only time it observes a negative payoff is when the lower court makes a mistake.

Keeping these remarks in mind, we are now ready to see how the model applies to an actual doctrine.

5 Voluntariness of Confessions

A. The Standard Period

Before 1966, a defendant's confession was admissible in state and federal court when offered "voluntarily." To determine voluntariness, courts applied a totality of the circumstances test, looking to many factors surrounding the confession. So framed, the "voluntariness" test was fuzzy. In *Blackburn v. Alabama,*[22] the Supreme Court acknowledged as much, opining that "a complex of values underlies the stricture against use by the state of confessions which, by way of convenient shorthand, this Court terms involuntary, and the role played by each in any situation varies according to the particular circumstances of the case" (*Id.* at 207).

In our model, the totality of the circumstances test represents a standard. According to one commentator, under this test "a trial judge could pick through the [Supreme] Court's opinions and find authority for admitting almost any confession (Graham: 161)." In other words, the legal command granted lower courts a great deal of discretion to determine whether a confession met the voluntary threshold.

B. The Switch from a Standard to a Rule

In *Miranda v. Arizona,*[23] the Supreme Court found that the totality of the circumstances test failed to provide the accused adequate safeguards.[24] As a result, it replaced the standard with a litany of rules, the famous and ubiquitous *Miranda* warnings. Under *Miranda*, a confession – and the fruits of that confession – obtained while the defendant is in custody are not admissible unless the police give certain warnings.

[22] 361 U.S. 199 (1960).

[23] 384 U.S. 436 (1966).

[24] Traditionally, the Supreme Court held that the due process clause of the Fourteeth Amendment was the constitutional basis for the voluntariness requirement in state criminal proceedings. *Miranda* rests on a different constitutional provision, the Fifth Amendment privilege against self incrimination. The Court in *Malloy v. Hogan*, 378 U.S.1, (1964), found that the protections derived under the Fifth Amendment applied to proceedings in state court.

What triggered the change from the standard to the rule? *Davis v. North Carolina*[25] – a case decided the same year as *Miranda* – provides one piece of evidence that the lower courts were misapplying the voluntariness standard. In *Davis*, no one other than the police spoke to the defendant for sixteen days prior to his confession. Two state courts and one federal court found the confession to be voluntary. The Supreme Court reversed, noting that "it has never sustained the use of a confession obtained after such a lengthy period of detention and interrogation involved in this case (*Id.* at 752)."

And *Davis* is not the only mistaken application case. The Supreme Court actually resolved four separate cases in *Miranda*. In the underlying case of *Miranda v. Arizona*, the police did not advise the defendant of his right to counsel. Two hours of police interviews produced a confession. The Supreme Court of Arizona upheld the admission of the confession, relying on the fact that the defendant did not specifically request an attorney. Reversing, the Supreme Court stated that "the mere fact that the [defendant] signed a statement which contained a typed-in clause stating that he had full knowledge of his legal rights does not approach the knowing and intelligent waiver required to relinquish constitutional rights (*Id.* at 492)."

In the underlying case of *Vignera v. New York*, the trial judge charged the jury, by saying "'The law doesn't say that the confession is void or invalidated because the police officer didn't advise the defendant as to his rights. Did you hear what I said? I am telling you what the law of the State of New York is (*Id.* at 493-494)."

The Supreme Court reversed, stating that Vignera was not warned of any of his rights and "thus he was not effectively apprised of his Fifth Amendment privilege (*Id.* at 494)."

In the underlying case of *Westover v. United States*, the local police and FBI questioned the defendant for 14 hours before obtaining a confession. There was no evidence that warnings were ever given. The Ninth Circuit

[25] 384 U.S. 737 (1966).

affirmed the conviction. In reversing, the Supreme Court stated that the continuous nature of the interrogation (the fact that local officials immediately turned the defendant over to the FBI) rendered the confession involuntary.

Combined, *Davis*, *Miranda*, *Vignera*, and *Westover* demonstrate that the lower courts were not applying the "voluntariness" standard in the way the Supreme Court circa 1966 preferred.

C. Filling in Miranda with More Rule-Like Doctrine

Miranda, of course, did not resolve all the issues involving confessions. Several questions remained: What is an interrogation? What does it mean for a defendant to be "in custody?" Can statements taken in violation of *Miranda* be used for impeachment purposes?

The Supreme Court over the next twenty years or so refined the *Miranda* rules. For example, in *Beckwith v. United States*,[26] the Court held that interrogation in a suspect's home was non-custodial and, as a result, the police were not required to give the Miranda warnings. In *Harris v. New York*,[27] the Supreme Court held that statements taken without the Miranda warnings could be used for impeachment.

Notably, the early doctrinal embellishments of *Miranda* are not all "pure" rules. They lie on a spectrum. For example, in *Rhode Island v. Innis*,[28] the Supreme Court held that "A practice that the police should know is reasonably likely to evoke an incriminating response from a suspect . . . amounts to interrogation (*Id.* at 301)." Here, the term "reasonably" is not well-defined. And the lack of clarity grants some discretion to the lower courts.

Our claim is not that Miranda replaced a standard with a series of pure rules. Instead, the modest claim is that the Supreme Court replaced a standard with a series of rulings, which, when taken together, constrained the discretion of lower courts in deciding whether to admit a confession or not. This is consistent with the model, which explicitly models the doctrinal choice

[26] 425 U.S. 341 (1976).
[27] 401 U.S. 222 (1971).
[28] 446 U.S. 291 (1980).

along a continuum from rules to standards.

D. A Return to Standards

In *Missouri v. Seibert*,[29] the Supreme Court returned the law governing confessions to something closer to a balancing test. In *Seibert*, police deployed the question-first tactic. Under this tactic, police question the defendant, obtain a confession, read the Miranda rights, then obtain a second, supposedly untainted confession. Writing for the plurality of the Court, Justice Souter articulated a multi-factor balancing test to determine whether the second confession was coerced. Justice Kennedy's concurring opinion – which is probably binding – had a similar standard-like flavor. In concurring, Justice Kennedy said the second confession was admissible if the police engaged in certain "curative measures." What counted as curative remained undefined.

In *United States v. Patane*, Justice Thomas was even more explicit in the move away from Miranda-like rules. The facts at issue in *Patane* follow: After failing to provide a complete set of *Miranda* warning, the detective asked Patane about his gun, a Glock. After some back and forth, the defendant told the detective the gun was in his bedroom. The Court addressed whether the gun could be introduced into evidence, as the state charged Patane as being a felon in possession of a firearm. Although only achieving a plurality, Justice Thomas answered, yes, stating "[t]he Self-Incrimination Clause . . is not implicated by the admission into evidence of the physical fruit of a *voluntary* statement (*Id.* at 636 (emphasis added))." Justice Kennedy concurred in judgment.

For four members of the Court at least, the doctrine has come full circle.[30] At least for physical evidence, "voluntariness" is the touchstone once again. Taken together, *Siebert* and *Patane* give more discretion to lower courts. As it stands today, the doctrine comes pretty close to allowing lower courts to

[29] 542 U.S. 600 (2004).

[30] Where Justice Kennedy sits is uncertain. On the facts of *Patane* itself, he would allow in the physical evidence obtained following a failure to warn.

decide, largely unconstrained by doctrine, whether a confession and its fruits are admissible (Friedman 2010: 24-25). In the 2000s, the *Miranda* "rules" have transformed into something much more standard-like.

To sum up, the doctrinal path in the confession cases tracks the predictions of the model. Initially doctrine provides an open-ended standard to guide future decisions. The lower court makes a mistake. In response, the Supreme Court articulates a rule-like doctrine for a certain amount of time. Following that period of time, the Supreme Court moves toward a standard once again.

There is no denying that other factors might explain the shift in doctrine. The conventional story is that the doctrine changed because of shifts in the preferences of the Supreme Court. Perhaps the majority of the today's Supreme Court simply dislikes *Miranda* and wants to engage in stealth overruling (Friedman 2010). Notably, our model shows that these kinds of ad hoc judicial politics stories are not necessary to explain doctrinal change, shifts between something more rule-like and something more standard-like. Doctrinal shifts are also consistent with a Supreme Court with constant preferences engaged in a repeated interaction with a lower court with differing preferences.

6 Conclusion

Judicial politics scholars have focused attention on the importance of inter-court interactions in shaping judicial decisionmaking, but have largely neglected or discounted the role of legal doctrine. Other scholars have emphasized the choice between different doctrinal forms without taking account of the dynamic interaction between upper and lower courts. Our model demonstrates the advantages of taking account of both institutional structure and legal doctrine, and of doing so using a dynamic model of decision-making. It takes seriously the role of doctrine in shaping the decisions of

lower courts, while simultaneously acknowledging that repeated interactions between courts with divergent preferences will also drive outcomes.

The one-period model captures the basic intuitions of the rules and standards literature. Rules are more determinate, restraining discretion at the point of application, but also risk errors of over- and under-inclusiveness. Standards allow for consideration of unanticipated factors that should influence the outcome, but how they will be applied in any given situation is less certain. Examining these characteristics in the context of the judicial hierarchy highlights the tradeoff for the Supreme Court: sometimes it will want new information to be incorporated into the decision calculus; sometimes it will not. The Court strikes a balance by its choice of doctrinal form—how determinate or not to make the legal command. In addition, the one-period model confirms that the optimal form of legal doctrine will depend on the degree of preference divergence between the upper and lower court.

The dynamic model suggests additional insights. First, it explains how changes in doctrinal form emerge endogenously from the interaction between upper and lower courts. Even when no change in their relative policy preferences occurs, doctrine may move from a standard to a more rule-like form, simply because of the difficulty confronting the Supreme Court in communicating its policies and the risk that lower courts will make mistakes. Conversely, the inherent costs of insisting on an inflexible command may cause the Supreme Court to swing back to a more open-ended standard after a period of time. The degree of preference divergence between the upper and lower court remains relevant, as it affects the duration of time constraining rules are likely to be imposed.

Our model also helps resolve the puzzle as to why lower courts largely follow Supreme Court precedent despite the fact that the risk of reversal in any given case is exceedingly low. Rather than resulting from out-sized fear of reversal on the part of lower court judges, their willingness to follow precedent can be understood as a form of cooperation with the Supreme

Court. Compliance increases the likelihood of a payoff for lower courts in the form of future doctrines that afford them greater discretion. Noncompliance risks provoking the Supreme Court to impose constraining rules.

The model assumes a single lower court, obviously a limiting assumption. Future work might examine doctrinal choice where multiple lower courts with different preferences apply the standard. One suspects that free-riding will be an issue. Each lower court will want to act like it made a mistake, hoping that the other lower court cooperates. In so doing, the non-compliance by the single lower court will not be enough to trigger a change in legal doctrine. Of course, such a move will be anticipated by the other lower courts and the Supreme Court itself. Exactly how doctrine will play out in this situation requires further investigation.

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7 Appendix

Proof of Proposition (1). $r^*(\alpha)$ is the best response of the lower court as a function of the form of the legal command. This best response is upward sloping in α; that is, $\frac{\partial r^*}{\partial \alpha} > 0$. The Supreme Court's payoff, Π_{sc}, is only a function of α through its effect on the best response. As a result, the Supreme Court, in effect, selects r, corresponding to a value of α in order to maximize Π_{sc}. And so, this reduces to a simple decision problem, where we can apply the monotone comparative static results (see Milgrom and Shannon 1994 and Ashworth and Bueno de Mesquita 2006). That results states that the choice variable is increasing in the parameter if the objective function satisfies the single crossing property. A sufficient condition for this property to hold is that the cross partial of the objective function with respect to the choice variable and the parameter is positive (Ashworth and Bueno de Mesquita 2006:219).

Proof of (A): Define the parameter $\rho = -p$. From above, a sufficient condition for α^* to be a increasing function of ρ is that $\frac{\partial \Pi_{sc}}{\partial \alpha \partial \rho} \geq 0$. We know

that

$$\Pi_{sc} = \rho E r(\alpha^*)^2 - (1+\rho)(1-r(\alpha^*))^2 L$$

So

$$\frac{\partial \Pi_{sc}}{\partial \alpha} = 2\rho r(\alpha^*)\frac{\partial r^*}{\partial \alpha}E + 2(1+\rho)(1-r(\alpha^*))L\frac{\partial r^*}{\partial \alpha}$$

and

$$\frac{\partial \Pi_{sc}}{\partial \alpha \partial \rho} = 2r(\alpha^*)\frac{\partial r^*}{\partial \alpha}E + 2(1-r(\alpha^*))\frac{\partial r^*}{\partial \alpha}L$$

which is positive. And so, α^* is an weakly increasing function of ρ, which implies that α^* is a weakly decreasing function of p

Proof of (B): We know that

$$\frac{\partial \Pi_{sc}}{\partial \alpha} = -p2r(\alpha^*)\frac{\partial r^*}{\partial \alpha}E + 2(1-p)(1-r(\alpha^*))L\frac{\partial r^*}{\partial \alpha}$$

So

$$\frac{\partial \Pi_{sc}}{\partial \alpha \partial L} = 2(1-p)(1-r(\alpha^*))\frac{\partial r^*}{\partial \alpha}$$

which is positive. And so, α^* is an weakly increasing function of L

Proof of (C): Define the parameter $\chi = -E$. A sufficient condition for α^* to be a weakly increasing function of χ is that $\frac{\partial \Pi_{sc}}{\partial \alpha \partial \chi} \geq 0$. We know that

$$\frac{\partial \Pi_{sc}}{\partial \alpha \partial \chi} = p2r(\alpha^*)\frac{\partial r^*}{\partial \alpha}$$

which is positive. α^* being a weakly increasing function of χ implies that it is a weakly decreasing function of E. ■

Proof of Proposition 2 . We claim that the following set of strategies constitutes a subgame perfect equilibrium of the repeated game.

A. The Supreme Court's Strategy

In the trust phase, the Supreme Court sets $\alpha = 1$ if in the prior period it realized a payoff of 0.

In the trust phase, the Supreme Court sets $\alpha_t = \alpha^*$for $\bar{t}$ periods if, in the previous period, it realized a payoff less than 0. Define $\bar{t}$ as the smallest

integer such that equation (2) holds.

At date 1 of the constraint phase, the Supreme Court sets $\alpha_t = \alpha^*$.

At dates {2 . . . t-1} of the constraint phase, the Supreme Court sets $\alpha_t = \alpha^*$ if, in prior period, it realized a payoff of (i) $-r(\alpha^*)^2E$ or (ii) $-(1 - r(\alpha^*))^2L$. If, in the prior period, the Supreme Court observed any other payoff, it starts the $\bar{t}$ period constraint phase again.

B. The Lower Court's Strategy

In the trust phase when $\alpha_t = 1$, the lower court sets $r = 1$ if it believes that the Supreme Court would view the new factor as relevant. The lower court sets $r = 0$ if it believes that the Supreme Court would view the new factor as irrelevant.

In the trust phase if $\alpha_t \neq 1$, the lower court plays its single period best response, setting $r = r(\alpha_t)$.

In the constraint phase, the lower court always plays its single period best response, $r(\alpha)$, no matter the form of the legal doctrine.

To prove these strategies form a subgame perfect equilibrium of the repeated game requires that these strategies form a Nash equilibrium in each subgame.

Equation (2) ensures that the lower court does not deviate in the trust phase, assuming the $\bar{t}$ period of constraining doctrine is in the offing.

Suppose that the lower court deviates following $\alpha_t \neq \alpha^*$ in the constraint phase. According to the Supreme Court's strategy, following any realized payoff other than $-r(\alpha^*)^2E$ or $-(1 - r(\alpha^*))^2L$, it restarts the constraint phase. To avoid this prospect, the lower court's best response is to set $r = r(\alpha^*)$, guaranteeing the Supreme Court one of these two payoffs (which one depends on the realized ex post state of world, agreement or disagreement as to the new factor). Given that the lower court responds with its single period best response, the Supreme Court maximizes its payoff in the constraint phase by setting $\alpha_t = \alpha^*$: and so, the Supreme Court's choice to constrain during this phase is credible.

To conclude the proof, suppose that Supreme Court deviates in the trust phase, setting $\alpha \neq 1$. The lower court's strategy calls for it to play its one-period best response to any doctrinal form other than $\alpha = 1$. This best response will ensure that the Supreme Court experiences a loss that period, which, in turn, triggers the constraint period. This deviation cannot be profitable since setting the directive at $\alpha_t = 1$, preserves the chance at the 0 payoff in the current period (if the lower court cooperates and doesn't make a mistake).

Proposition 4 *The lower court's discounted stream of expected payoffs in the cooperative phase is a decreasing function of the number of periods of constraining legal doctrine (t). Formally,* $V^+(t) > V^+(t+1)$.

Proof. *Notice that* $V^+(t) > V^+(t+1)$ *whenever*

$$\frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^* \sum_{i=0}^{t-1} \delta^i}{1-(1-p\beta)\delta - p\beta\delta\delta^t} > \frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^* \sum_{i=0}^{t} \delta^i}{1-(1-p\beta)\delta - p\beta\delta\delta^{t+1}}$$

which can be written as

$$\frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^* \left(\frac{1-\delta^t}{1-\delta}\right)}{1-(1-p\beta)\delta - p\beta\delta\delta^t} > \frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^* \left(\frac{1-\delta^{t+1}}{1-\delta}\right)}{1-(1-p\beta)\delta - p\beta\delta\delta^{t+1}}$$

or

$$[(1-\delta)\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^*(1-\delta^t)][1-\delta+p\beta\delta(1-\delta^{t+1})] > [(1-\delta)\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^*(1-\delta^{t+1})][1-\delta+p\beta\delta(1-\delta^t)]$$

which holds if and only if

$$[(1-\delta)\pi_{lc}^{coop} p\beta\delta(\delta^t - \delta^{t+1})] > (1-\delta)p\delta\beta\pi_{lc}^*[\delta^t - \delta^{t+1}]$$

or

$$\pi_{lc}^{coop} > \pi_{lc}^{*}$$

which is assumed to be true. ■

■

Proof of Proposition 3 . After plugging in for $\pi_{lc}^{no-coop} - \pi_{lc}^{coop}$, rewrite equation (2) as follows:

$$\delta[V^{+} - V^{-}] > B(1)$$

The remainder of the proof proceeds in two steps. First, show that the LHS of (2) is increasing in $\bar{t}$, the number of periods of constraining legal doctrine. The RHS is clearly independent of $\bar{t}$. Second, pick the smallest value of $\bar{t}$ such that the equation (2) holds. Finally, allow p to vary. If the LHS decreases in p it follows, all else equal, that a (weakly) higher value of $\bar{t}$ is needed to maintain incentive compatibility for the lower court.

Step One:

Rewrite equation (2) as

$$\delta\left(V^{+}(1-\delta^{t}) - \pi_{lc}^{*}\frac{(1-\delta^{t})}{1-\delta}\right) > B(1)$$

Plugging in for V^{+} results in

$$\delta\left((1-\delta^{t})\left[\frac{\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^{*}\frac{(1-\delta^{t})}{1-\delta}}{1-(1-p\beta)\delta - p\beta\delta\delta^{t}}\right] - \pi_{lc}^{*}\frac{(1-\delta^{t})}{1-\delta}\right) > B(1)$$

Multiplying both sides by $1-\delta$ and rewriting the denominator yields

$$\delta\left(\frac{(1-\delta^{t})[(1-\delta)\pi_{lc}^{coop} + \delta p\beta\pi_{lc}^{*}(1-\delta^{t})]}{1-\delta+p\beta\delta(1-\delta^{t})} - \pi_{lc}^{*}(1-\delta^{t})\right) > (1-\delta)B(1)$$

The bracketed term on the LHS can be written as

$$\left(\frac{(1-\delta^t)(1-\delta)\pi_{lc}^{coop}+\delta p\beta\pi_{lc}^{*}(1-\delta^t)^2}{1-\delta+p\beta\delta(1-\delta^t)}\right)-\left(\frac{\pi_{lc}^{*}(1-\delta^t)(1-\delta)}{1-\delta+p\beta\delta(1-\delta^t)}\right)-\left(\frac{p\beta\delta\pi_{lc}^{*}(1-\delta^t)^2}{1-\delta+p\beta\delta(1-\delta^t)}\right)$$

Collecting terms gives

$$\frac{(1-\delta^t)(1-\delta)}{1-\delta+p\beta\delta(1-\delta^t)}(\pi_{lc}^{coop}-\pi_{lc}^{*}) \tag{3}$$

By assumption, $\pi_{lc}^{coop} > \pi_{lc}^{*}$. It follows that the LHS of equation (3) is increasing in t if

$$\frac{(1-\delta^t)(1-\delta)}{1-\delta+p\beta\delta(1-\delta^t)} < \frac{(1-\delta^{t+1})(1-\delta)}{1-\delta+p\beta\delta(1-\delta^{t+1})}$$

which reduces

$$(1-\delta^t)[1-\delta+p\beta\delta(1-\delta^{t+1})] < (1-\delta^{t+1})[1-\delta+p\beta\delta(1-\delta^t)]$$

or

$$(1-\delta^t) < (1-\delta^{t+1})$$

The inequality must hold since $\delta^{t+1} < \delta^t$.

Step Two:

Return to equation (3). Take the derivative of the LHS with respect to p, resulting in

$$\frac{(1-\delta^t)\frac{\partial\pi_{lc}^{coop}}{\partial p}+\delta\beta\pi_{lc}^{*}\frac{(1-\delta^t)}{1-\delta}}{1-\delta+p\beta\delta(1-\delta^t)}-\frac{\left(\pi_{lc}^{coop}+\delta p\beta\pi_{lc}^{*}\frac{(1-\delta^t)}{1-\delta}\right)\beta\delta(1-\delta^t)}{\left(1-\delta+p\beta\delta(1-\delta^t)\right)^2}$$

Creating a common denominator yields

$$\frac{1}{\left(1-\delta+p\beta\delta(1-\delta^t)\right)^2}\left[\left((1-\delta^t)\frac{\partial\pi_{lc}^{coop}}{\partial p}+\delta\beta\pi_{lc}^{*}\frac{(1-\delta^t)}{1-\delta}\right)\left(1-\delta+p\beta\delta(1-\delta^t)\right)-\beta\delta(1-\delta^t)\pi_{lc}^{coop}\right.$$

Or

$$\frac{(1-\delta^t)}{\left(1-\delta+p\beta\delta(1-\delta^t)\right)}\left(\frac{\partial\pi_{lc}^{coop}}{\partial p}\right)+\frac{\beta\delta(1-\delta^t)}{\left(1-\delta+p\beta\delta(1-\delta^t)\right)^2}\left(\pi_{lc}^{*}-\pi_{lc}^{coop}\right)$$

Note that $\frac{\partial\pi_{lc}^{coop}}{\partial p}<0$ and $\pi_{lc}^{*}<\pi_{lc}^{coop}$ by assumption. As a result, the LHS of equation (3) is decreasing in p. The RHS is constant, meaning a weakly higher value of t is needed to maintain incentive compatibility. ■