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NEW AVENUES FOR MODELING JUDICIAL POLITICS

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Many of the ideas in Section IIIA derive from collaboration with Donald Songer and Jeffrey Segal, who might justly claim co-authorship. Both however should escape censure for the paper's many shortcomings -- except Segal, whose patience, encouragement, and friendship over the years is materially responsible for the paper's existence. Like Dr. Frankenstein, he must assume some liability for his creations. I thank Ken Ward, Eric Reinhardt, David Epstein, and Susan Elmes for helpful suggestions.

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I. Introduction

One of the most interesting research programs in positive political theory (PPT) to emerge during the late 1980s and early 1990s is the attempt to build a theory of judicial politics. In fact, two rather distinct components of this research program stand out. The first is really an effort to construct formal models of the American separation of powers (SoP) system, focusing on the role of courts. The *locus classicus* of these models is Marks (1988); other prominent efforts include Ferejohn and Shipan, 1990; Gely and Spiller, 1990; and Eskridge and Ferejohn, 1992. The second component is an attempt to build micro-level models of the judiciary using tools from game theory. This literature is much less developed, but some examples include Schwartz's recent papers on Supreme Court decision making (1991, 1992), and papers by Segal, Songer, and Cameron (in various permutations) on the judicial hierarchy. Closely related are important papers by Kornhauser on collegial courts (1992a and b).[1]

In this paper, I make no attempt to review these literatures systematically. Rather, I offer suggestions for extending each research program. The suggestions have some common themes, both by what they reject and what they embrace. First, all the suggestions employ non-cooperative game theory. Judicial politics is rife with strategy, and game theory supplies the most powerful set of tools we have for thinking about strategy. Second, all the suggestions are consonant with the tradition of legal realism. I spend no time considering whether there is something peculiar about the utility functions of judges. Instead, I consistently assume judges are "single-minded seekers of legal policy," in George and Epstein's felicitous phrase (1992). Neither do I spend time considering judicial culture as anything but behavior that emerges as an equilibrium in a

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[1] There is also a large game theoretic literature on settlement and pre-trial negotiation among litigants. One might expect links between this literature and the PPT of courts, but settlement models usually assume away judges while PPT models usually assume away litigants. Hence, few links actually exist. An excellent review of settlement models, and other literatures on law and economics, is Cooter and Rubinfeld (.).

game played by single-minded seekers of legal policy. So, for example, in none of the models I sketch do I endow judges with internalized, raw preferences over precedent, nor do I require them to obey *stare decisis* in a mechanical way (however, they may have derived preferences, resulting from an incentive structure, or find it in their interest to follow precedent). Both decisions are debatable but this approach has served political scientists well in the study of Congress; I believe it will also serve in the study of courts. Third, the suggestions generally reflect the common themes of "asymmetric information" and "incomplete contracting."[2] So, I proceed along the general lines suggested in McNollgast (1992) and Section 4 of Shepsle (1992) but touch on other ideas as they present themselves. Most of the ideas I present are very preliminary, but I hope that by offering many such ideas in close proximity with one another, the themes of asymmetric information and incomplete contracting will take on a resonance they might lack if I presented just one or two ideas in excruciating detail. Roughly speaking, the paper moves from the most macro to the most micro levels of judicial politics.

Here is a summary of the paper. I offer two suggestions concerning the research program focusing on courts in the SoP system and two suggestions concerning the micro-level part of the research program on courts. 1) This macro level research program has tended to focus on what may be called a "power" model of Congress-court interaction. One objection to such models is their reliance on an arbitrary truncation of moves in order to derive crisp results. I try to show the force of this objection with some examples. I then argue that a game with truncated moves is actually an equilibrium in a larger game that includes the possibility of constitutional crises. In effect, behavior off the equilibrium path of play in this larger game supports the truncated Congress-court game. I suggest that this larger game can be approached as an optimal stopping game or war of attrition. The addition of incomplete information makes this larger game particularly interesting,

[2] In this paper, when I refer to a statute as an "incomplete contract" I just mean that it does not specify what affected parties are to do in all states of nature -- there are gaps in the statute.

rasing questions about when the standard approach will work and when it won't and, perhaps, hinting at what may be the outer limits of stability in a separtion of powers system. 2) An alternative to power models are informational models, which rarely have been applied to judicial politics. In such models, judicial power derives not from the sequence of moves (or rather, not purely from the sequence of moves) but from private information. In effect, Congress rationally delegates certain tasks to courts and then defers to their judgment. I provide some examples from legal and political science literatures. I then suggest that recent models of bureaucratic expertise and delegation afford a natural place to begin building informational models of courts.

3) At a more micro level, discretion and control in the judicial hierarchy is a substantively important topic that is easy to study with simple models. One payoff from such modeling is the linkage it affords with the vast empirical literature on judicial politics. I try to show how an asymmetric information, incomplete contracting perspective can tie together apparently unrelated literatures in judicial politics, including "cue theory" and the cert decision, the decision by litigants to appeal, decisions on the merits, the impact of *amicus* briefs, and the institutional role of the Solicitor General. 4) The PPT of courts has tended to ignore the fine-grain of judicial procedure even though the PPT of Congress has shown that the details of procedure are extremely important in determining policy outcomes. Unfortunately, spatial models transplanted from the study of legislative politics just don't fit very well with judicial procedure. I suggest a way to model a judicial doctrine-setting game using a spatial framework that differs from the standard spatial theory of voting. The usefulness of this apparatus remains to be seen, but it does supply a way to think about reasoning by analogy, case selection and Supreme Court agenda setting, the importance of test and bridge cases, and the litigation strategies of groups. It seems to fit well with empirical work using the "attitudinal model" and comports well with fact-pattern analysis. Riker's heresthetics also find a natural application in this setting.

I conclude with an extravagantly bold assertion (why not?): in the PPT of courts, a theory of judicial politics that transcends the traditional distinction between the legal and the political science approaches to the law is beginning to emerge. Because this theory will illuminate the differences and similarities between judicial, bureaucratic, and legislative politics, it could contribute importantly to the revival of institutionalism in political science. Its importance reaches beyond judicial politics to the study of political institutions more broadly.

II. Courts in the Separation of Powers System

A. SOME PRELIMINARIES

The standard model. The standard PPT model of courts is familiar to the participants in this conference, so I will be rather terse in describing it. There is a policy space, usually assumed to be the line or the plane. In most examples I assume the former.[3] There are several actors who all have symmetric, single-peaked utility functions defined over the policy space. The actors move sequentially a finite number of times, setting policy. Information is complete and perfect, so equilibria are found via backward induction. Typically, an actor such as Congress chooses a policy, e.g., a point on the line; a judge then "interprets" the policy, moving the point on the line. Sometimes it is assumed that the judge can set policy under the equivalent of a legislative "open rule" (Eskridge and Ferejohn, 1992; Ferejohn and Weingast, 1992), so he can freely pick any point he wishes. Sometimes it is assumed he sets policy under a the equivalent of a "closed rule" (Ferejohn and Shipan, 1990; Spiller and Spitzer, 1992), so he may only choose between two set alternatives. Occasionally it is assumed the judge may choose ~~using~~ whichever rule he

[3] Models with higher dimensional policy spaces raise some difficult problems because they usually assume aggregates of people, like Congress or a panel of appellate court justices, have a standard utility function (e.g., convex preferences). But we know this is not generally valid, and indeed aggregation problems have been found in panels of judges. The models I sketch in the second part of Section III are vulnerable to this criticism.

prefers (Spiller, 1992). The exact identity of the players and the assumed sequence of play vary somewhat from model to model. In Eskridge and Ferejohn, 1992, for example, an agency sets a policy, a judge may then re-set the policy, a congressional committee then acts as a legislative gate keeper but may allow the floor to enact legislation, the floor may then reset the judge's policy, the president may veto the floor's policy (restoring the judge's policy), and the floor may over ride the veto (restoring its own policy). Payoffs accrue to all the players according to the final policy. The game ends.

The separation of powers system. It is worth spending a few minutes looking at the forest before plunging into the trees. Here is what I mean. The standard model emphasizes a checks-and-balances view of the separation of powers. There are other ways to think about the separation of powers system, and they lead to rather different models of Congress-court or agency-court games.

I claim there are at least four important aspects of a separation of powers system.

1) A SoP system hinders law making by establishing cross-cutting veto powers. This is the "checks and balances" view famously argued in Federalist 10, 47, 48, and 51: cross-cutting vetoes block exploitive minorities and temporarily deluded majorities from passing predatory legislation. In other words, an advantage of the SoP system is that it prevents too-easy "commitment" in a game theoretic sense -- it prevents bad policy from becoming firmly locked in place for the next several periods. As frequently noted, such a system also conduces to inaction. From this familiar perspective courts, through judicial review, "hard looks" at agency actions, and vigorous statutory interpretation provide a check on the legislature and executive. "Closed rule" versions of the standard model fit well with this view of the SoP system

2) A SoP system creates a structure that enhances the long-term value of laws and blocks opportunities for short-run opportunism by the governors. If enforcement of the law has been credibly delegated to a relatively independent judiciary, private agents can make long term plans without worrying that the authorities will capriciously change

the rules. Private agents will then be willing to invest and create wealth in a way that is unlikely when the political authorities can easily renege on commitments (Shepsle, 1989; Olson, 1993). Of course, if delegation is really to work as a commitment device, the delegation must be credible. In addition, one must find some way to assure proper behavior by the enforcement agent (Melumad and Mookherjee, 1989). But if the governors can find a way to make a credible commitment to a well-motivated agent, society benefits enormously. Moreover, so do the governors, for ~~the delegation~~ commitment enhances the value of law making for them, too (Landes and Posner, 1975).

Somewhat surprisingly, PPT has not spent much time analyzing courts from this perspective (Ferejohn and Weingast, 1991, is an exception). It would appear that many of the interesting questions are reasonably tractable. Laffont and Tirole, for example, analyze a model of constitution-making to derive the optimal degree of commitment under different circumstances (1993, Chapter 16). They focus on a trade-off between commitment (leading to wealth creation) and flexibility (allowing the alteration of bad laws). This type of analysis would seem to have interesting implications for the optimal degree of independence in the judiciary. In a related vein, Judge Posner offers an interesting conjecture (1985, pp. 16-20): when passing laws is easy, so that statutes are readily modified, judges will tend to be simply legal technicians. The legal system in France and Germany seems to be constructed along these lines. When law making is cumbersome and difficult, so that statutes are necessarily long-term incomplete contracts, judges will be expected to be politically sensitive and have a degree of freedom to act as policy makers, subject to legislative review. The legal system in the United States meets this description. The conjecture thus specifies two legislative-judicial arrangements as equilibrium institutions (using Shepsle's phrase). It would be interesting to see if Posner's conjecture could emerge from a model constructed somewhat along the lines of Laffont and Tirole's analysis, and if one could identify more precisely the tradeoffs between these two legislative-judicial regimes.

It seems clear that delegation-as-commitment is an interesting avenue for research on courts, but I will spend little on this aspect of the SoP system. Instead I will focus on two remaining aspects of a SoP system.

3. A SoP system encourages different branches to develop expertise in different aspects of governance; hence, society garners the benefits of specialization. This view of the SoP system is distinctly different from the cross-cutting vetoes view, and is much less familiar. Tulis presents this view of the SoP system when he suggests that

> powers were separated and structures of each branch differentiated in order to equip each branch to perform different tasks. Each branch would be superior (although not the sole power) in its own sphere and in its own way. The purpose of separation of powers was to make effective government more likely. (Tulis, 1990, p. 95)

The critical point is that a division of labor allows specialization, which leads to more effective governance.

This view has a strong affinity with recent PPT analyses of committee expertise and specialization in Congress (Krehbiel) and models of bureaucratic delegation (O'Epstein 1993a and 1993b). However, it is a perspective that has not been much applied to courts. This perspective leads one to ask, What are courts good for? And, why might Congress defer to courts voluntarily (aside from the Landes and Posner argument)? These are central issues for informationally-based models of courts.

4. A SoP system allows one branch, which does not suffer from a particular institutional weakness, to offset or balance another branch that does suffer from that weakness, by intervening in its actions. This argument has two distinguishable versions. The first emphasizes institutional poaching or power grabs, where courts try to carve out a legislative or administrative niche for themselves. This view of courts is well embodied in the open-rule version of the standard model in which a court and a legislature battle over policy. The second version of the argument is more subtle. In this version, courts intervene selectively in the business of the other branches in order to make them operate

better. For example, bureaucrats have a tendency to shirk their work, due to brute laziness and the problems of moral hazard that arise in team production. Similarly, bureaucrats occasionally do irritating or unreasonable things simply to avoid taking responsibility. In such cases, courts can intervene to force bureaucracies to make decisions that have been unreasonably delayed due to shirking, and to correct decisions that have been botched because someone failed to take responsibility. In a similar vein, a legislature may fail to take action action on a particular matter, perhaps because an outlier committee uses its gate keeping power to block legislation, or perhaps because no organized group pushes the matter onto the floor's crowded agenda. Sometimes a court can intervene and force an item onto the floor's agenda.

The point here is not blocking the passage of laws or otherwise hindering commitment, nor is it developing specialized expertise. Rather, the insight is that over-lapping authority encourages a sort of institutional competition that stimulates the distinct branches to improve each other's performance.

A strong advocate of this view of the SoP system is Justice Neely of the West Virginia Supreme Court. Justice Neely claims that constitutional law in particular is less directed at cross-cutting vetoes than balancing: "Constitutional law is neither about a 'constitution' nor about 'law'; rather, constitutional law is about *institutions* and the way they interact with other institutions. . . Constitutional law is *only* about correcting flaws in the other branches; it is basically about balance." (Neely, pp.) Neely's argument is rather more positive than normative: he claims that much of the courts' tug-of-war with the other branches is aimed at offsetting institutional weaknesses that judges perceive.

This perspective leads straight to the question, just how far can courts go before triggering retaliation -- not just an adverse policy reaction but an attempt to gut the courts or end over-lapping authority? Many of my comments about the power models reflect this perspective.

B. CONSTITUTIONAL CRISES AND TRUNCATION GAMES

Two objections to power models. Two objections have been, or can be, raised to the standard model. The first I call the Rutten objection.[4] The essence of this objection is take to Ferejohn and Weingast at their word when they declare "If we can say nothing else with certainty, we can say that there is no 'last word' in politics" (1992). If this is true, goes Rutten's objection, then terminating the game after a finite number of moves is completely arbitrary. Why doesn't the game just continue indefinitely, and if it did, what would happen? The second objection, the institutional design objection, is actually related to the Rutten objection (as will become clear in a moment). The institutional design objection goes: is the game itself compatible with rational behavior in a larger game of institutional design? That is, why would a legislature allow the judiciary to behave the way the judge in the standard model is supposed to behave? Why doesn't Congress change the game, by removing the law from the jurisdiction of the judge (as in *Ex Parte McCardle*), for example? Conversely, why doesn't the judge "trump out" of a statutory interpretation game by always declaring the game to be a constitutional interpretation game, thus robbing Congress of further moves in the statutory game (Easterbrook ,1992)?

Dropping Rutten's other shoe. To see the force of the Rutten objection, I will construct two examples of infinitely repeated versions of the standard model. The logic behind this exercise is similar to a proof by contradiction: there seems to be no reason why play in the standard model should not continue indefinitely, but infinite repetitions lead to unappealing or even absurd results. Therefore, the truncated version of the model must be right. But since the truncation in the standard model is clearly arbitrary, the model must be incomplete.

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[4] Because Andrew Rutten has persisted in raising this objection on every occasion when I have used the standard model, or some variant thereof. Romero briefly touches on the objection (1992) as does Easterbrook (1992).

Here is the first example. Assume Congress and Court both have "tent utility" with ideal points at zero and one, respectively. Congress proposes a policy, which is in effect for one period. The Court then may accept the policy or change it to whatever it likes, and the resulting policy is in effect for one period. Players receive payoffs each period, so this sequence constitutes the stage game in an infinitely repeated game (for simplicity, I ignore discounting between the two periods of the stage game). The players seek to maximize the discounted sum of payoffs resulting from infinitely repeated play of the stage game.

Consider the open-rule version of the standard model. The unique equilibrium in the stage game is not very interesting: Congress enacts its ideal point, and the Court re-interprets the law to its ideal point. Payoffs for both players are then -1. However, suppose this game is repeated infinitely. Not surprisingly, the Folk Theorem comes to bear. Interestingly, the import of the Folk Theorem depends on the size of the policy space. Suppose the space is simply [0,1]. Then it turns out that only the one-shot outcome can be supported, even if the players are very patient (the reason why will become clear in a second). However, suppose the policy space is larger, say, the interval [-1, 2]. The implied set of feasible payoffs is shown in Figure 1. The min-max value of both players is -2 (i.e., if Congress wishes to hurt the Court as badly as possible, it will initially enact the boundary most distant from the Court; the Court will follow with 1, so the Court's security value is -2. Similarly for the Court trying to hurt Congress). The set of feasible, individually rational payoffs is shown as the shaded region in Figure 1. The Folk Theorem tells us that, if the players are sufficiently patient, any outcome in this region can be supported as a (sub-game perfect) equilibrium.[5] As the size of the policy space shrinks to [0,1] the unavailability of nasty punishments to mete on the other player

[5] I am implicitly invoking one of the perfect folk theorems. These theorems assume the stage game is simultaneous rather than sequential, so there are some loose ends in my examples. But it would be very surprising if the results don't go through.

restricts the min-max value of the players to (-1,-1), the outcome of the one-shot game. So only the outcome (-1,-1) becomes both feasible and individually rational.

Now consider the play of the game under the closed-rule version of the standard game. In this version, there is a common-knowledge *status quo ante*. Congress enacts a policy, which is in effect for one period. Court may veto the policy, with the *status quo* then returning for one period. The flip-flop quality of the stage game is not quite so pronounced, since Congress will sometimes offer a compromise policy that the court will accept. Summarizing broadly, with infinitely repeated play the set of sustainable equilibria in this version of the game is generally smaller than in the previous game, because Congress has such an advantage in the game. In fact, if the *status quo* is close to Congress, the set of sustainable outcomes can be fairly small. But if the *status quo* lies above the Court, the set of sustainable outcomes can become very large.

What are we to make of these examples? To some extent, they highlight the importance of using the open rule vs. the closed rule form of the model. Unfortunately, the literature is largely silent on when one should use one or the other. The source of this silence is not hard to find: so far as I can tell, there is no *a priori* or institutionally based reason for favoring one over the other. In Congress each bill has a rule (explicitly so in the House, implicitly so in the Senate), but this is not true in court. Under which circumstances should one use either version? Silence on this question may be a cause of some unease, since an important modeling decision appears unconnected with any institutional reality. (I return to this question in Section III.)

More fundamentally, though, the example raises the standard problem of repeated games, "too many equilibria and no way to choose among them" (in Kreps's phrase). It is unlikely that Congress and the court will be as far apart in the policy space as it is possible to be. Nor is it likely that the *status quo ante* will always favor Congress. Consequently, there will often be a great many possible outcomes regardless of which rule the court operates under. In fact, as the above example showed, every point on the pareto

frontier and many off it may be supportable as equilibria. The neat predictions of the standard model vanish. In effect, the game is so under specified that, if the players are sufficiently patient, ~~it will often be the case that~~ almost anything can happen.

Moreover, consider what outcomes in many of these equilibria look like (including the unique equilibrium in the open rule case when the players are at the ends of the policy spectrum). Policy becomes a shuttlecock, endlessly alternating between two very different policies. For example, Congress passes a bill, and the Court vetoes it or interprets to a very different point. Congress then re-passes the same bill, and so on *ad infinitum*. I cannot believe that any society would tolerate such radical swings in policy, over and over again. A model that supports a shuttlecock equilibrium is a bad model of the Congress-court game. Something must be wrong.

Constitutional crisis games. We know what is wrong: it is *not* true that there is no last word in politics. Congress and Court would find perpetual swings in policy so intolerable that *someone would find a way to end the game.* To maintain otherwise is to suggest that the players are not rational, or that they are much more constrained than we know they really are. (Here is the connection between the Rutten objection and the institutional design objection). The problem with simply declaring the model wrong, though, is that it begs the question, where should we terminate the game? Suppose the Court trumps out, declaring the issue a constitutional one. What is to stop Congress from refusing to accept this maneuver, instead passing a law that ends the Court's jurisdiction over this part of the law? What happens then? Suppose the Court continues to insist on its policy, and strikes down the jurisdiction statute. Suppose Congress then begins impeachment proceedings, which the Court declares illegal, while calling on the ~~military~~ public for support? What happens if Congress orders the president ~~to send troops~~ to arrest the judge and the president refuses? In other words, what does a real constitutional crisis look like, and how do we model it?

This example may seem far fetched.[6] However, consider the following anecdote related by Justice Neely. His court was called upon to decide a school finance case, rather like the *Robinson v. Cahill* case in New Jersey. A poor school district attacked the constitutionality of West Virginia's school finance system on the basis of wealth discrimination. If the court found in favor of the school district, the state legislature would inevitably have to raise taxes. As a practical matter, the only way the court could compel the state legislature to raise taxes would be to close the school system until the money was forthcoming (as actually happened in New Jersey in 1976). If the court closed the schools, Neely reasoned,

> The legislators have three options: they can leave the schools closed; they can impeach the court; or they can raise taxes and lose their jobs. Quite frankly, my initial choice were I in the state legislature would be impeachment of the court. (Neely, 1981, p. 177).

The West Virginia Supreme Court returned the case to a lower court for more study.

Justice Brennan's famous expression of the "political question doctrine" in *Baker v. Carr* is a clear indication that the Supreme Court recognizes and repeatedly confronts the political limits of its ability to engage in institutional poaching:

> Prominent on the surface of any case held to involve a political question is found a textually demonstrable constitutional commitment of the issue to a coordinate political department; or a lack of judicially discoverable and manageable standards for resolving it or the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion; or the impossibility of a court's undertaking independent resolution without expressing lack of the respect due coordinate branches of the government; or an unusual need for unquestioning adherence to a political decision already made; or the potentiality of embarrassment from multifarious pronouncements by various departments on one questions (369 U.S. at 217 (1962)).

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[6] Or perhaps not. When I wrote the preceding paragraph, I assumed such severe inter branch conflict would lie off the equilibrium path in the game I had in mind. A few days later the confrontation and constitutional crisis between Yeltsin and the Russian parliament sharply escalated, with the highest court playing something of the role I suggested.

Oliver Wendell Holmes put the matter rather more bluntly: "All that can be expected from modern improvements is that legislation should easily and quickly, yet not too quickly, modify itself in accordance with the will of the de facto supreme power in the community" (Holmes, "The Gas-Stoker's Strike"). A court that denies such a power throws itself beneath the wheels of the juggernaught. The fate of the Circuit Court for the District of Columbia in the confrontation over *habeas corpus* in *Ex Parte Merryman* stands as a lesson.[7]

Nevertheless, there are many occasions when courts can poach on the territory of another branch with impunity. Neely specifically mentions the case when an outlier legislative committee uses its gate keeping power to maintain a *status quo* that the floor majority would rather modify. In such a case, Neely maintains, a court may properly -- and most importantly, *safely* -- act like a bomb-throwing anarchist and upset the *status quo*, freeing the floor majority to act (*Ibid.*, pp. 67-68, 72-74). This argument and the examples he provides are strikingly reminiscent of the standard model, especially the version in Eskridge and Ferejohn.

I conclude that the situation assumed in standard game, in which the court exploits any power advantages it possesses to the limits of its ability and Congress capitulates, and the very different situation in which the court ducks a confrontation with another branch, are both equilibria in a larger game. In this larger game, play rarely extends long before one side or the other capitulates by declining to escalate into a constitutional crisis. The circumstances that determine which side capitulates is the interesting question.

If you are familiar with escalation games in the theory of international relations, the description of the game in the preceding paragraph will ring a bell. In fact, I am describing the dynamic version of the chicken game, the war of attrition. It is a game of chicken in

[7] Lincoln used troops to confine a judge to his house, and Congress abolished the court itself (Friedman, 1983, p. 8)

which failure to swerve may be bruising to Congress, but fatal to the Supreme Court. Nonetheless, Congress does sometimes swerve.

Although there is a well-developed literature on wars of attrition, it is not at all clear how best to modify such games to study inter-branch conflict. The trick will be to include enough institutional detail to generate interesting comparative statics while avoiding too much specificity about what is surely a very fluid process. It seems clear, for example, that public opinion must play a role in escalation, a point noted by Schattschneider in his classic discussion of conflict escalation in politics. Intriguing from this perspective is the evidence that the Supreme Court is on the whole a majoritarian institution (Marshall, 1989).[8] Public opinion also seems to play an important role in confrontations between the Court and the president; the Nixon tapes case, the Truman steel seizure case, and Roosevelt court packing plan come to mind.

One lesson from the game theoretic literature on chicken seems likely to go through in any model with incomplete information: confrontations may escalate and a crash can happen. Given the possibility for conflict, it is probably no accident that judicial selection in the United States is such a political process. As Posner notes, " The American judicial system, perhaps especially at the federal level where judicial independence is most fully secured, allows and indeed encourages the appointment as judges of people who have experience and aptitude that transcend technical legal analysis and trial skills, and that equip them to engage in the political law creation that has always been a conspicuous feature of American judiciaries" (1985 p 18). The courts need political savvy to survive.

C. INCOMPLETE CONTRACTING AND DELEGATION GAMES

[8] Caldeira (1991) provides a remarkably clear, and clear-headed, tour through the complex literature on the relationship between public opinion and the behavior of judges. Caldeira concludes that the mechanisms which lead judicial opinions and sentences to reflect public opinion remain quite mysterious.

Power models portray courts, Congress, agencies and president going head-to-head in a naked struggle over policy. Such struggles occur, and judges occasionally admit it. However, this is not typically the way judges talk about what they do when they create law. Of course, much of what they say may be guff, as Judge Posner, among others, warns: "Indeed, much of what judges say about their jobs in speeches and opinions partakes of the same falsity that characterizes other political discourse" (1990, p. 190). However, what Posner means is empty talk about only finding rather than creating law. The point I want to make is that even when judges are being candid about creating law -- "lifting the veil" to reveal "the seamier side of the judicial process" -- what they reveal looks rather different from simply moving clear-cut points back and forth on a line. For example, here is a famous description of judicial law creation:

> The choice of methods, the appraisement of values, must in the end be guided by like considerations for the one [the judge] as the other [the legislator]. Each indeed is legislating within the limits of his competence. No doubt the limits for the judge are narrower. He legislates only between the gaps. He fills the open spaces in the law. How far he may go without traveling beyond the walls of the interstices cannot be staked out for him on a chart. He must learn it for himself . . . None the less, within the confines of these open spaces and those of precedent and tradition, choice moves with a freedom which stamps its action as creative. The law which is the resulting product is not found, but made. The process, being legislative, demands the legislator's wisdom. (Cardozo, 1921, pp. 113-115).

Two points stand out here. First is a hint of the limits on power I discussed earlier: "traveling beyond the walls." The second is what I want to stress now: the concept of "open spaces" that judges "fill." If judges are "interstitial legislators," as Oliver Wendell Holmes claimed, what are the interstices? Why are they there? Is it only power considerations that give judges freedom to fill the open spaces? competence

Here is the argument I try to make in this section. 1) Laws are incomplete in the same way contracts are, that is, they do not specify what is to be done in every contingency. There are indeed gaps and open spaces, as Cardozo indicates. Judges create

law when a unspecified contingency arises and a concrete dispute between two parties ends in court. 2) In some cases, Congress is willing to let the court fill the gap to suit itself, because investing the effort to close the gap itself is not a good use of Congress's scarce time and effort. In fact, the extent of the gap left by Congress may signal the Court just how willing Congress is to abide by the court's law. 3) In other cases, legislators leave laws incomplete because they know the courts will do a better job legislating than they can. The reason why judges might do a better job filling gaps than the legislature is that they have the benefit of later information revealed during an adversarial proceeding. 4) The tendency of Congress to defer to the court's law is enhanced by the ability of losing litigants to sound "fire alarms." In short, the foundation of judicial power is sometimes not sequence but information.

An incomplete contracting view of statutes. The idea that statutes are incomplete is such a truism that I will spend little time defending it. At this point you can just think of incompleteness as a variable whose value has not been set at the time a statute is written. A similar formalization is often used in models of incomplete contracts. The more interesting question is, why does Congress leave the statute incomplete?

Two reasons are often advanced. The most commonly alleged reason why legislators leave statutes incomplete is the difficulty of reaching an agreement about some contingency the legislators foresee perfectly. The argument goes, two legislative factions cannot come to an agreement, so they leave the statute vague and just boot it into the courts or the bureaucracy, leaving someone else to work out the details. This argument is seriously incomplete, as it seems to imply irrational behavior on someone's part (if I know that letting the courts decide is equivalent to letting you win, why would I agree to such a deal? Conversely, suppose we both are unsure about what the courts will do -- why don't we strike a deal that gives us sure gains and avoids the risk of a lottery?) Probably the correct way to analyze this aspect of incompleteness involves common agency and costly monitoring. That is, booting the statute may be the best option for imperfectly monitored

legislators caught between the conflicting demands of two constituencies.[9] Until this argument can be made internally consistent, it is hard to take any farther.

The second argument turns on delegation-as-commitment. It is often alleged that Congress delegates tariff policy to the executive to avoid a prisoner's dilemma. If Congress tried to set tariff rates itself (so the argument goes) each member would have to push for protection for his district, resulting in very high tariff levels, a trade war and immiseration for all. Congress thus uses delegation to the executive as a commitment device to bind its hands in tariff policy. In some cases, Congress may defer to the court for similar reasons.[10] For example, Congress can posture on flag burning, knowing that the court will strike down a law that the members privately believe is bad policy but cannot oppose when public passions are engaged. You have to wonder, though, how binding such a delegation really is and why voters seem to accept too-easy capitulation by Congress. Even if this argument is true, it seems to deal with a special case.

A better starting place for thinking about incomplete statutes is offered by Hart and Holmstrom's discussion of contractual incompleteness. They suggest four reasons why contracts are incomplete: 1) the cost of anticipating the various eventualities that may occur during the life of the relationship; 2) the cost of deciding, and reaching an agreement about, how to deal with such eventualities; 3) the cost of writing the contract in a sufficiently clear and unambiguous way so that the terms of the contract can be enforced; and 4) the legal cost of enforcement (1987, p. 132). The first three reasons apply to statutes.

A signaling model of incomplete statutes. The third cause, the simple cost of writing the law, is the easiest to consider. The idea is, it may not be worth the trouble to write down what the drafters want. This is particularly true for unlikely contingencies or for cases in which any action is probably just about as good for the drafters as any other.

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[9] I owe this point to David Epstein, who is trying to put this argument on a solid footing.
[10] I thank Eric Reinhardt for pointing this out to me.

In such a case, Congress may be quite happy to allow a court to fill a gap however it wants. As Greenawalt notes, "Even now some areas of the law are left substantially untouched by legislative action because they do not present important political issues, and legislatures are willing to leave their development to courts." (The Discretion of Judges, p 393). Justice Neely is somewhat more colorful, noting that every legislator appreciates the fact that

> when the state legislatures and Congress are heated by emotional issues, there is little time left for technical problems like products liability, which nobody gives enough of a damn about to organize political pressure to change. Since somebody has to think about these issues, and since the changes the courts make are usually considered justifiable since they are in response to changed economic and social circumstances, this huge area of the law is considered the legitimate province of courts. (Neely, pp. 42-43)

The premier example is the common law, which can be considered as just one huge exercise in judicial gap filling. There is no reason why Congress or a state legislature cannot plug the gaps by converting case law into statute law, modifying doctrine as it wishes. The late 19th century saw an explosion of such efforts (Gilmore, 1977, ~~Ages of American Law~~, p. 95 ff.) Eskridge notes that in recent years Congress continues on occasion to revise the common law rulings of the federal courts (1991, footnote 7). Yet this type of legislative activism is rare. Conversely, one can point to examples of courts exercising stunning freedom in creating private law. For example, in *Li v. Yellow Cab Co.*, the California Supreme Court concluded that the relevant statute, dating from 1872, had adopted a contributory negligence rule. The Court noted that the legislature had refused to amend the statute, so apparently the law comported with legislative desires. Nonetheless, the Court blandly announced that henceforth California would use a comparative negligence rule, in effect "interpreting" the statute right out of existence and substituting its own will for that of the legislature. How could the Court get away with such usurpation of power? The obvious answer is, the legislature had other fish to fry; it

just didn't care (or care very much) which negligence law the state had, and accepted the court's judgment about which was better.

Although these examples seem to hinge on legislative apathy, a more interesting way to think about them involves trade-offs. More specifically, we can think about Congress weighing the cost of adding one more provision to a law to close a gap, against the gain from reducing opportunistic behavior if the court gets a chance to fill the gap. This insight drives some recent work on contracting, both theoretical and empirical (Dye, 1985; Crocker and Reynolds, 1993). A simple intuition is that if Congress doesn't care much about the area in question, so the costs of opportunism are low, and it will tend to leave a wider gap. This situation might occur if no organized group had interests at stake. In addition, if the Court had preferences that were similar to Congress, the loses from opportunism would be lower, hence more gaps.

This line of thinking leads to a more subtle model that incorporates asymmetric information. I have in mind a signaling model that combines elements of Spier, 1992, and Cameron and Rosendorff, 1993. In Spier's model, incompleteness in a contract that is costly to write signals something about the writer's private information. Think of a prenuptial agreement: if one of the parties insists on writing a very detailed contract specifying the allocation of resources in the event of divorce, it may signal private information about the likelihood the agreement will be invoked. In Cameron and Rosendorff's model, Congress holds a costly hearing in order to signal some private information, namely, the extent to which it cares about a given policy. Following the hearing, an agency may set a policy; if Congress dislikes the policy sufficiently, it may overturn the policy at some cost. In this model, hearings can have a dramatic effect on agency behavior, though sometimes Congress has to over turn agency policy (the relevant equilibrium is a partial pooling equilibrium). One might imagine combining the two models in the following way: Congress has private information about how much it cares about policy in a given area. Writing a very complete law is costly of time and effort, so

the extent of incompleteness in the law becomes a signal about how much Congress actually cares about the policy. Burning more time and effort in filling a gap might imply that Congress is willing to expend the effort to overturn a court decision that deviated too far from Congressional desires in that area. After Congress writes the law, the court may interpret the policy. Congress may then act to overturn the policy.

The point of such a model is to study how a judge learns "how far he may go without traveling beyond the walls of the interstices," in Cardozo's phrase. In the model I am proposing, there is no definite limit on discretion. This contrasts with a bureaucratic delegation model like O'Epstein, 1993a, in which Congress indicates a definite zone of discretion for the agency; presumably transgressions beyond the zone are policed by the courts. Instead, the judge must infer how far he can go by reading the law, studying congressional actions, and thinking about the stakes of organized actors. If the intuition that the most informative equilibrium is a partial pooling equilibrium is correct, then the model would suggest that courts would occasionally face reversals, yet at other times be free to make sweeping revisions of the law without a peep from Congress. The evidence reported in Eskridge, 1991, seems broadly compatible with such a model.

I should make it clear that this (pseudo)model is really just a power model with transactions costs. To see this, consider what happens if transactions costs go to zero. Then Congress writes a complete contract (or alternatively, does nothing, for everyone understands what Congress wants and what it is willing to put up with). Information is complete, and if the court tries to alter policy, Congress instantly reverses it.[11] So if transactions cost go to zero, the model collapses to a rather stark version of the standard model. The models in the following section represent a larger departure.

Information power. Consider Hart and Holmstrom's first reason for an incomplete contract, the difficulty of anticipating various eventualities. As they note, the fundamental

[11] The Rutten objection definitely applies to these models. It also applies to the models in the next section.

cause for this difficulty is bounded rationality (p. 133). We don't know very much about modeling bounded rationality. However, there is a way to partially capture congressional responses to uncertainty about future contingencies.

Here is the basic intuition. Legislating is law creation apart from any concrete dispute (Posner, 1985, p. 4). In some sense, it is dispute resolution in the abstract. In this sense, you can think of a statute as similar to a general rule you set for yourself, like, don't give money to beggars because they'll just use it to hurt themselves with drink or drugs. When faced with a concrete case, though, you may have second thoughts about the rule, seeing dimensions you had not thought of before. For example, you may find yourself asked for money by someone who is clearly a stranded motorist, who could benefit mightily from a handout. You may then find yourself formulating a new rule, don't give money to beggars unless they are clearly stranded motorists. Legislators appreciate this problem and leave a degree of slack in the law -- the main outlines are sketched in, but the details are left until later, to the hands of someone who has had a chance to see the practical consequences of the abstract rules.

> Edward Levi captures this idea neatly in his discussion of ambiguous statutes:
>
> This [ambiguity in statutes] is not the result of inadequate draftsmanship, as is so frequently urged. Matters are not decided until they have to be. For a legislature, perhaps the pressures are such that a bill has to be passed dealing with a certain subject. But the precise effect of the bill is not something upon which the members have to reach agreement. If the legislature were a court, it would not decide the precise effect until a specific fact situation arose demanding an answer. Its first pronouncement would not be expected to fill in the gaps. But since it is not a court, this is even more true. It will not be required to make the determination in any event, but can wait for the court to do so. [citations omitted] (Levi, 1949, pp. 21-22)

The key point is, *matters are not decided until they have to be.*

To pin things down a little more, it is useful to think in terms of the Austen-Smith and Riker/Gilligan and Krehbiel technology (Austen-Smith and Riker, 1987; Krehbiel,

1990). That is, imagine that social outcomes (which is what the legislature and the courts are concerned about) depend on the law (say, a point x on the line) plus a shift term ω. Thus, ω is a kind of implementation factor. Preferences about social outcomes, working backward through the implementation factor, induce preferences about law. Therefore, as ω changes, Congress and the court will change what they want the law to be. If you want to, you can think of ω in very broad terms, including "experience" and the "felt necessities of the times" (Holmes, 1881, p 237). Congress writes a law at time 1. If it knew the value of ω Congress would write a law reflecting its knowledge. However, it cannot know ω at time 1 (here is the bounded rationality). At time 2, the court *knowing* ω "interprets" the law, i.e., chooses an x. Following the court's interpretation, Congress may intervene, setting the law to what ever it likes.

Before going any further, it is important to ask: is it reasonable to believe that the court knows ω, and knows it better than the legislature, however we interpret it's meaning? In other words, is it plausible to believe that judges are substantive experts, like bureaucrats? It is probably indeed true that admiralty judges know a great deal about the maritime industries, but the force of the argument turns not on what judges know but what they learn from listening to concrete disputes. The insight is that adversarial proceedings can have exceptionally desirable informational properties. The relevant paper is Milgrom and Roberts, 1986. This paper studies competition between two interested parties who try to persuade a decision maker who has very limited information about the situation (e.g., the preferences of the parties) to reach a decision that favors one party over the other. Information is assumed to be verifiable, so that there is something like subpoena power or severe penalties for perjury. In short, the setting they study resembles a court room. They show that in many cases all the relevant information emerges, so that the decision maker makes a full-information decision. The intuition is that if one of the parties prefers the full information decision, competition will drive her to release her private information. I suspect that if you allow other parties to provide additional information, in the form of

amicus briefs, the result would be strengthened even further. (Recall the famous Brandeis brief, containing 112 pages of social science and 2 pages of legal argument.) It would be useful to have more research on this topic, which would seem to be a natural subject for laboratory experimentation. Nonetheless, there is some theoretical support for believing that trials are good vehicles for uncovering hidden information.

Suppose this line of reasoning is correct. Now suppose a legislature suspects that private parties know ω, or will learn it at time 2, and that these parties may find themselves in conflict. Then the legislature might, as Levi suggests, leave a gap in the law precisely so a court can fill it in.

When would a legislature be willing to delegate gap filling to a court? You can immediately see two cases. First, suppose that ω is costlessly known to everyone once the disputants go to court. Then monitoring the court's action should be easy and, subject to the transactions costs of legislating, the legislature should be able to control the final doctrinal outcome (assume the court suffers a very tiny cost from being overturned).[12] Accordingly, the legislature ought to be willing to delegate to the court, and control would be nearly perfect. In the second, and more interesting, case, the legislators do not learn ω. Suppose, for example, learning ω requires reading the briefs, reviewing testimony and documents, and so forth. Would the legislature be willing to delegate gap-filling to the court? At least three different models shed some light on this question. The most appropriate model depends on how one views the information structure in the situation.

The first model is the Gilligan-Krehbiel model of committee-floor relations, which in turn is based on Crawford and Sobel, 1982.[13] In the G-K model, one party learns ω

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[12] In the next section, I spell out this argument in much more detail. I suggest you can dispense with even an epsilon cost from being overturned, in the presence of transactions costs. So this assumption is harmless.

[13] A non-technical introduction to the G-K model may be found in Krehbiel (1992). A more detailed but very clear exegesis may be found in Banks, 1991, pp. 33 ff. The original source, Gilligan and Krehbiel, 1987, ~~is not very accessible~~.

and offers a suggested policy x to a second party, the actual decision maker. The decision maker is free to set policy however it wishes. However, the decision maker cannot learn the value of ω at all. In this model, the suggested policy x is a signal of the first party's private information. The most informative equilibrium is a partial pooling equilibrium in which the second party, by observing x, infers a range in which ω falls. The first party gains some informational rents (i.e., he tends to get a policy he likes better than the full information policy). The second party cannot generally achieve its ideal full-information policy but nonetheless gains because heeding the advice of the first party results in a less uncertain outcome. This informative equilibrium is only possible if the two parties do not diverge too much in their preferences.

The extension of the G-K model to the gap-filling situation has some appeal. The two most important findings of the G-K model -- that both parties gain from the delegation, and that delegation requires some convergence of interests -- seem intuitively plausible in the Congress-court setting. An obvious implication is that if the preferences of the court diverge too much from that of Congress, the legislature will write extremely detailed laws that preclude gap-filling even though such a course entails committing to a policy that Congress would probably not desire if it had full information. Nonetheless, the G-K model does not really fit the Congress-court situation. First, the policy of the court prevails unless Congress acts; the court gets to set what is the status quo in the G-K model. In addition, the information structure seems wrong: if Congress decided to overrule the court, legislators would probably learn ω.

Banks's model of auditing addresses both of these problems (Banks, 1989). In the model, one party has private information and sets a policy x.[14] The second party, who observes only x, may accept the first party's policy. Or, it can pay an auditing fee, learn the value of the private information, and set its own policy. In the Congress-Court game,

[14] I am actually describing a small tweak on the Banks model, which transplants it to a spatial setting. I use this model again in the next section.

the auditing fee would correspond to holding committee hearings, which are costly of time and effort, but surely reveal the value of ω, which is private information. Again, the policy set by the first party is a signal of its private information. In this model, there is a surprising degree of information transmission. In fact, the private information ω is always revealed. The key is a randomized auditing strategy that gives the first party an incentive to reveal its private information by the way it sets its policy x. If the two parties are sufficiently close, no audits take place and the second party is free to set policy as it wishes (what counts as "close" depends on the audit cost). More generally, though, the first party will have to offer a compromise policy, and it will occasionally suffer an audit. How tight the controls are on the second party depends on the auditing costs. If costs are not too high, the second party can maintain quite a tight rein on the first party.

I suggest in the next section that the Banks model provides an excellent vehicle for studying the relationship between higher and lower courts in the judicial hierarchy. However, I am skeptical about its application to the Congress-Court game. The problem is the assumption that Congress sees x at all (and unless it does, the model cannot work). A survey of congressional staff undertaken in 1989 by Robert Katzmann showed that awareness on the Hill of federal court rulings is very limited (Eskridge, 1991, p. 343 and footnote 29). In fact, it was restricted to just to a handful of major cases from which interest groups or trade associations sought legislative relief. It seems to take an audit to reveal x, not just ω, and the instigation for the audit seems to be a "fire alarm" (in McCubbins and Schwartz's phrase) from an interest group. Eskridge's evidence of heavy interest group involvement in most cases in which Congress over rides statutory interpretation cases is suggestive (Eskridge, 1991).

These observations lead to a rather different model, based on Cameron and Jung, 1993. In the C-J model, a proposer sets a policy x. A chooser must decide between x and a common knowledge status quo *without seeing* x. The policy x is a "pig in a poke," a hidden offer. The chooser may be uncertain about the preferences of the proposer.

However, it does know the preferences of one or more third parties who know the value of x and offer costless endorsements either of the proposal or the status quo (in equilibrium, an endorsement has a meaning like, "I prefer the policy.") The most informative equilibria are partial pooling equilibria; nonetheless, depending on the configuration of interests, the chooser can often do quite well by listening to the endorsements. In the Congress-court setting, the court's action x, which it takes after learning ω, is the hidden offer. An interest group's fire alarm is equivalent to an endorsement (that is, silence implies consent). The fit between the C-J game and the Congress-court setting breaks down at this point, however. In the Congress-court setting, Congress must undertake a costly audit (a hearing), revealing both x and ω, if it wishes to reject the court's policy. It may then set policy to suit itself. The interesting questions that a modified C-J pig-in-the-poke game should answer are: what conditions trigger a fire alarm? When does Congress undertake an audit, after hearing a fire alarm? What circumstances lead Congress to defer to the court and simply accept its policy? I suspect if there is an appropriately placed interest group, Congress would be willing to defer to the court's judgment, and the final policy would not diverge too much from the policy Congress would select under full information. However, this is just a conjecture.

Equilibrium institutions. By pushing these models a little harder, it might be possible to get some insights into equilibrium institutions, not just institutional equilibria. The case of tax policy provides an interesting starting point. Posner notes that in the area of tax law, judges are not allowed to do much gap-filling (1990, pp. 56-61). Instead, the Treasury Department and the Ways and Means and Finance Committees maintain large bodies of experts who carefully follow the maneuverings of loophole seekers. As soon as a new loophole is revealed, the tax authorities plug it with a regulation or amendment. In terms of the model, maintaining a corps of experts allows Congress to learn the value of ω in period 2 and change the law. There is little delegation to courts. Why not? The obvious answer is that judges may not always get ω right in such a technically demanding

Actually, Congress writes incomplete statute at t 1. loophole seeker finds and exploits the loophole at t 2. Congress expends resources to plug the gap at t 3.

area as tax law, despite the information revealing properties of trials, and there aren't reliable sounders of fire alarms. Moreover, the cost to Congress when the judges get it wrong is great, in terms of lost revenues, economic inefficiency, and perhaps offense given to powerful interest groups. Consequently, it makes more sense to pay the high cost of maintaining a stable of experts, in effect in-house auditors.

This example suggests a model in which Congress chooses among a variety of institutional setups, with pure delegation to courts (as in the domain of the common law) at one extreme and maintaining a stable of expensive in-house experts (as in tax law) at the other. The point of such a model would be to consider quite precisely the nature of the trade-offs across various institutional regimes.

III. Hierarchy and Doctrine

In thinking about the special features of judicial politics, its helpful to distinguish the *structure of courts* from the *structure of the law*, and both from *legal culture*. In addition to the place of the courts in the separation of powers system, the structure of the courts encompasses the hierarchical nature of the judiciary, the reliance on adversarial proceedings in the courtroom, and various special features such as the use of panels of judges in appellate courts. The structure of the law embraces the concept of legal doctrine, the importance of precedent and the rule of *stare decisis*, the modification of doctrine through the process of judicial holdings, and the particular subdivision of the law into various sub fields (contracts, torts, corporations, and so forth). Legal culture refers to specific norms inculcated in judges and lawyers. These include a concern by judges to retain the respect of their peers by crafting workmanlike opinions and by avoiding too frequent reversals of their opinions, forbearance by judges in order to maintain an aura of legitimacy for the legal system itself, and the importance of "sound" legal argument by counsel.

In this section, I turn from the most macro level of judicial politics to examine the structure of courts and the structure of the law. I discuss the judiciary as a hierarchical organization, focusing on its informational properties. Then I turn to judicial doctrine and the process of legal reasoning.

A. BLACK ROBED BURUEAUCRATS AND THE JUDICIAL HIERARCHY

Are judges black robed bureaucrats? Certainly they are part of a hierarchy. Appellate courts supervise the work of trial courts, federal courts supervise state courts, and the Supreme Court supervises everyone. Lower courts are bound to higher courts via an authority relationship: "Legal decisions are authoritative not when they command a consensus among lawyers, corresponding to a consensus among scientists, but when they emanate from the top of the judicial hierarchy" (Posner, 1990 p 79). Legal procedure is notoriously rigid, like the standard operating procedures of a bureaucracy.

Yet, you may well wonder whether judges are really bureaucrats. The European comparison is interesting. In continental judicial systems, such as Germany and France, there is a career judiciary. Judges are recruited straight out of law school and then rise through the ranks. Promotion hinges on criteria similar to those employed in other meritocratic bureaucracies, such as the civil service. Motivation is assured through similar techniques (Posner, 1985 pp. 15-16). Things are quite different on this side of the Atlantic. Higher ups can't punish, fire, demote, promote, reward monetarily, or use the other forms of motivation typically employed in hierarchies, even the civil service. Posner goes so far as to conclude, "the judge is, at least if he wants to be, principal rather than agent" (*Ibid.* p. 17). This conclusion is disturbing, for law without uniformity and predictability loses much of its attractiveness as a social institution.

Some simple facts about the federal judicial hierarchy are striking.[15] In the early 1990s, 632 district court judges sat in 94 district courts. In 1983, over 277,000 cases were filed in these courts. Typically about 20% of these cases are appealed. In the year ending in June 1990, for example, almost 41,000 cases were appealed to the 168 judges sitting in the 13 courts of appeals. In recent years, somewhat less than 5,000 of these cases continue on to the Supreme Court (most use the certiorari route). Typically about 300 of these cases are decided on the merits, with about 150 receiving careful plenary reviews with full opinion. In short, something like a quarter of a million cases enter the federal judicial hierarchy each year; the highest court issues opinions on about one-half of one-tenth of one percent of these.

It just seems obvious that the Supreme Court cannot be effective in policing doctrine in the lower courts. Consequently, judicial doctrine in this country must be a total shambles. Either that, or the only real factor maintaining doctrinal order within the lower courts is adherence to precedent brought about by a respect for judicial culture. And if culture is so central, then clearly we should turn the study of judicial politics over to specialists in culture, like anthropologists, sociologists, and interpretist social critics.

This intuition is false, or so I argue in this section. My claim is, institutional features of the judicial hierarchy allow it to be extremely efficient from an informational viewpoint (at least in principle). The prospect of review, remote as it is, is sufficient to motivate most judges. Consequently, little intervention from the top is needed to maintain a high degree of doctrinal order within the hierarchy. Fleshing out the argument in detail would require many pages, and proving whether or not the theoretical arguments actually hold in reality is a research agenda in itself. But I hope to convince you that this viewpoint is a reasonable one.

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[15] I crib these statistics from Songer, 1991, Rowland, 1991, and Berch *et al* 1992, the last two of which rely heavily on Posner, 1985.

A simple reviewing game. The following game is a good starting place for studying control and discretion in the judicial hierarchy. There are $n + 1$ players, n lower courts with separate geographic jurisdictions and one higher court with an all-encompassing jurisdiction. Assume each lower court has a single peaked utility function over the unidimensional policy space regnant in its jurisdiction and assume the courts have different ideal points. Endow the higher court with a similar utility function, but assume it cares about policy in all the lower jurisdictions. Call the bliss point of the higher court x_h. To fix ideas, assume its utility is simply the sum of the doctrinal divergences from this bliss point in the lower courts. Assume the preferences of the players are common knowledge. The lower courts move sequentially, setting doctrine to whatever they wish. After the lower courts move, the higher court may review their decisions and set doctrine in a lower court to whatever it wishes. To make matters really stark , assume the upper court can review *at most one decision*, so that n-1 courts will surely escape reversal. Finally, assume a lower court suffers an infinitesimal utility loss, an ε-loss, if its decision is reversed. This tiny loss can be taken to be "judicial culture"; I will suggest shortly that even this degree of judicial culture may be discarded.

Consider the best response of the higher court to moves from the lower courts. In order to make best use of its single review "bullet", the higher court should target the decision of the lower court whose doctrine causes the higher court the greatest loss in utility, setting the doctrine in that jurisdiction to x_h. Given the utility function suggested above, the higher court will reverse the court with the most distant doctrine; call the distance from x_h to that doctrine d. If several courts have doctrines d distance from x_h, the higher court is free to randomize in reviewing them; assume it reviews the first court to set policy at d distance (this avoids certain technical problems in the strategies of the lower courts).

Now consider the best response of a lower court to the reviewing strategy of the higher court and to the moves of its predecessors. Consider in particular the strategy of

the *last* lower court to move. If this court sets doctrine farther from x_h than the most distant doctrine of the preceding courts, it will be reviewed with certainty, find its doctrine set to x_h and in addition suffer an ε utility loss. Accordingly, it will set its doctrine as best it can but certainly no farther from x_h than the most distant preceding doctrine. (This implies it sets its doctrine to either $x_h - d$, $x_h + d$, or its bliss point). The same logic applies to the next to the last court, and so back to the first court to move. Now consider the strategy of this court. If it moves some distance d from x_h it knows that no succeeding court will move further away, so that it will be reviewed with certainty, receive x_h and suffer in addition an ε utility loss. Accordingly, its best action is to set policy to x_h. Therefore, all the succeeding courts must do the same. *Control in the hierarchy is perfect.* The basic intuition is well conveyed by the Japanese proverb, "the nail that sticks up will be driven in." No court wishes to be the nail that sticks up more than the others. Competition to avoid sticking out drives all the courts to hunker down (as it were) as hard as they can.

Notice the following as well. There are two major judicial systems in the U.S., the federal and the state courts. The two systems are entirely distinct, except for one "bit of glue" (Segal and Spaeth, 1993, p 21): the Supreme Court can reverse state supreme courts. The above logic suggests that this little bit of glue is sufficient to bind the entire system with chains of steel. The Supreme Court controls its own hierarchy and the very top of 50 others, and hence controls everything.

It is instructive to see what does *not* drive this striking result (a *theoretical* result in the simple reviewing game; I am not asserting perfect control actually exists). The result does not depend on sequential moves by the lower courts. This is worth thinking about, because if the lower courts do not see each other's moves until all have finished moving, their moves are effectively simultaneous. So, suppose all the lower courts announced their doctrinal decisions simultaneously, with the higher court then reviewing at most one court. No lower court wishes to be the most distant court, so in any

equilibrium at least two courts must move to the most distant position from x_h; call this distance d. Neither has an incentive to move farther from x_h even if by doing so it moves closer to its ideal point, for such a move surely triggers a review. However, each always has an incentive to move slightly closer to x_h even if it means moving farther from its ideal point. A very small move toward x_h yields nearly the same utility as remaining distance d from x_h and not being reviewed, and assures the court that it escapes review. So, such a deviation is always profitable. The argument applies to any distance d other than zero. Therefore, the only (pure) strategy equilibrium is for all courts to move to x_h with all escaping review: control is again perfect.

Nor does the result really hinge on the ε utility loss. To see the importance of the epsilon loss, note that without it the first court to move would be indifferent between setting doctrine to x_h and setting doctrine to its bliss point and being reviewed. If the first court sets its doctrine to its bliss point, all the succeeding courts can set doctrine no further from x_h and escape review. Depending on the location of the first mover, there might be a great deal of doctrinal discretion within the hierarchy. However, the dependence of perfect control on a *deus ex machina* in the form of an epsilon loss due to "judicial culture" is more apparent than real. Assume the lower courts do not suffer an ε utility loss following a reversal but instead the higher court faces a review cost k when it reviews a lower court. This review cost creates a degree of slack within which the lower courts can maneuver: if the doctrinal divergence in a jurisdiction is small enough, the higher court will not find it worth while to intervene. Accordingly, the optimal strategy for the first court is to exploit the available doctrinal slack to the utmost *but no more:* if the first court pushes the higher court harder, none of the succeeding courts will push as hard; the first court will be reviewed and receive x_h rather than some (perhaps only slightly) more congenial policy. All the subsequent courts follow suit, so that doctrine in all the lower courts is clustered around x_h, with the maximum degree of dispersion

determined by k. Control is not perfect but if k is small relative to the dispersion of the lower court's bliss points in the policy space, control is nearly perfect.

Two factors actually drive the "perfect control" result. The first is the inability of the lower courts to make binding agreements among themselves. If several of the lower courts could write a binding contract forcing themselves to move distance d from the higher court, all might find the agreement profitable in expectation even though one judge would surely be reviewed. Such an agreement would constitute a kind of judicial riot that would overload the capacity of the higher court to maintain order. But there is no mechanism by which judges can bindingly agree to doctrinal deviations.[16] Absent such a mechanism, the higher court can play the lower courts off one another in order to control their behavior. Implicit competition drives the lower courts all to toe the line perfectly.

The second critical assumption is the transparency of the actions of the lower courts. The model assumes the higher court can see the lower courts' decisions perfectly, so it can direct its single bullet at the worst malefactor. It is the implicit threat to shoot the worst deviator -- an entirely credible threat if decisions are transparent -- that keeps all the courts in line.

Transparency is the real Achilles heel of the simple reviewing game. To see why, suppose instead the higher court could not see the decisions of the lower courts at all. Suppose, in other words, the decisions of the lower courts were completely hidden from the upper court even after they were announced. Then all the lower courts would deviate to their ideal points, and the higher court would direct its single review at the lower court with the most distant ideal point.[17] If the Supreme Court could review more than one

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[16] The higher court would have a strong incentive to find ways to make such agreements unravel in advance, as it were. For example, the higher court could announce that if a group of judges entered into a binding agreement to deviate, it would direct its review at the most senior judge in the cabal. The cabal would then unravel. It might be possible to set up an infinitely repeated version of the inspection game in which there are log-rolling equilibria supported via trigger strategies. Turnover in the hierarchy, of which there is a great deal, would tend to undermine implicit collusion among lower courts.

[17] The most distant lower court would prefer to set a doctrine other than its ideal point if by doing so it could escape review. But if actions are truly hidden there is no way it could convince the higher court that

lower court, it would begin with the court with the most extreme ideal point and work its way down the courts in order of distance of ideal points. When the Court's revolver was empty (as it were) all the remaining courts would escape review. Only if the Supreme Court could review many cases, or if the hierarchy were quite homogeneous, would doctrinal order be maintained.[18]

This point is worth underscoring: if actions are perfectly transparent, control will be perfect, or nearly so. If actions are completely obscure, control requires a huge amount of reviewing, presumably much more reviewing than we actually see. Or, "judicial culture" in the form of utility losses from reversals must loom very large in the calculus of judges.[19] It seems unappealing and implausible that such losses bear the entire weight of maintaining order in the judicial hierarchy. In short, the information structure within the judicial hierarchy emerges as a critical factor -- perhaps the critical factor -- in maintaining doctrinal order.

A fire alarm model. McCubbins and Schwartz, in their classic article on monitoring, distinguish two types of oversight. "Police patrols" are systematic reviews of

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it had not deviated to its ideal point. And if the lower court were sure it would escape review, it would deviate to its ideal point. This is an example of a "pig in a poke" games; see Lupia (1992) and Cameron and Jung (1993) for analyses of such games.

[18] Another no-deviation equilibrium hinges on random reviews. Suppose the Supreme Court cannot see decisions *unless* it reviews. To prevent deviations to an ideal point $\bar{x}$ it must be the case that the probability of review r is such that

$$(1-r)u(\bar{x})+r(u(x_h)-\varepsilon)\leq u(x_h)$$

where u(·) is the utility to a lower court of a position in the policy space. As $\varepsilon \to 0, \quad r \to 1$ if the expression is to remain true. If epsilon is small, the conclusion in the text still holds.

[19] The random reviewing equilibrium requires

$$\varepsilon \geq \left(\frac{1-r}{r}\right)[u(\bar{x})-u(x_h)]$$

(1-r)/r is on the order of 2500. Since lower court justices *do* appear to follow the desires of the Supreme Court most of the time (Segal and Spaeth, 1992, 337-345; Songer, 1991), it would appear either that epsilon is large, or that the term in braces is small, or that decisions are not really hidden (so this equation simply does not apply). I find it hard to believe that epsilon is really very large since no real sanction mechanism aside from the reversal itself is brought to bear on errant judges. The term in braces would be small if the lower court justice pretty much shared the preferences of the Supreme Court, but we know that there is a considerable degree of ideological diversity in the judicial hierarchy [references]. The term would also be small if judges simply don't care about judicial doctrine, but this seems incompatible with simple observation.

on-going operations, while "fire alarms" are episodic responses to occasional alarms from other parties. In a world in which the decisions of lower courts are scarcely transparent -- how can the Supreme Court really follow the decisions in a quarter million trials? -- the Court could never maintain doctrinal order if it had to rely on police patrols. But the Supreme Court does not have to rely on police patrols. It can use fire alarms; in fact, fire alarms are intrinsic in a system for dispute resolution that allows losers to appeal on high.

Consider the incentives of a losing litigant who knows that his loss is due solely to the lower court's willful disregard of the higher court's doctrine. The loser knows that if the upper court hears the case, he will surely win. If the benefit of winning is large, the cost of appealing small, and review given appeal sufficiently probable, then he surely will appeal. Conversely, consider a losing litigant who knows that his loss stems from the lower court following rather than flauting the upper court's doctrine. Such a litigant has no incentive to appeal for he will surely lose and in addition pay the cost of appealing. Segal, Songer, and Cameron present some empirical evidence that supports this notion of doctrinally rational appeals.

If losers appeal rationally, the result is a simple signaling game in which an appeal serves as a reliable signal to the upper court that its preferred doctrine has been violated in a given case.[20] In this game, a lower court that flouts doctrine can be reasonably confident the upper court will become aware of the fact, simply because the loser has a strong incentive to sound a fire alarm.

We are now back to something that begins to resemble the simple reviewing game but now we still may wonder about doctrinal control. The problem is, the Supreme Court can review only about 3% of the nearly 5,000 cases appealed to it annually. How can the

[20] The empirically minded may be protesting at this point that this model implies that the Supreme Court reverses all the cases it accepts. The Court does reverse about 2/3 of the cases it hears, but it affirms the others. In a few moments, I will present another model in which the Supreme Court affirms some cases. The theoretically minded may be wondering why pre-trial negotiation does not dispose of these cases before they reach the Supreme Court. I do not have a good answer to this problem.

Court target the most doctrinally significant cases? The answer is, rely on more fire alarms. Many are available. Third parties such as the ACLU and NARAL offer *amicus* briefs in cases that the Supreme Court is considering for cert. The Solicitor General (SG) screens cases involving the government and offers briefs on others in which the government has an interest, in effect recommending in both instances that the Court hear the cases. Litigants invariably note in their briefs any conflicts in the holdings of different circuits, if applicable. Some litigants are represented by lawyers with a reputation for specializing in the most interesting or important cases (McGuire and Caldeira, 1993). All these are fire alarms. The judicial politics literature refers to them as "cues," and it is easy to show statistically that the Court responds to them (Caldeira and Wright, 1988; Segal and Spaeth, 1992, 195-197, Perry, footnote 10, p. 7). The SG, for example, is phenomenally successful in getting the court to accept the cases he recommends, and winning those cases when the court hears them.

It is worth spelling out the logic of judicial fire alarms in this simple signaling model, since the judicial literature rarely takes this step (Perry, 1991, for example, frequently invokes signaling theory but never specifies what it is that is being signaled). Third parties with special interests have incentives to monitor the relative handful of cases that concern them so they know well the decision in the lower court and understand the legal stakes. They then can offer signals, essentially in the form of endorsements, to the Court. They have little incentive to recommend to the higher court a case they know the higher court will decide adversely from their perspective. Consequently, when the Supreme Court sees a case screened by the Solicitor General or accompanied by an *amicus* brief from the ACLU it knows the signalers believe the Court will rule their way. This observation explains why the Solicitor General is so successful when the Court takes a case he recommends -- one of the reasons he recommended it was his expectation the court would rule his way. It does not explain why the Court follows his recommendation to take the case. Suppose, however, the Court and the signaler tend to view the legal

stakes or *importance* of cases the same way. Because the Court will be able to hear only a few cases, both the signaler and the Court will profit if the signal tells the Court which cases are important. A brief from the SG or a well-known group with a sophisticated appreciation of doctrine or the presence of a litigator known for his ability to ferret out the importance cases may carry great weight as the Court allocates its limited budget of reviews.

Here is the picture that emerges. Within the judicial hierarchy, most of the actors at the lower levels take actions that are opaque so far as the highest court is concerned. Nonetheless, the lower courts can confidently expect that if they deviate very far from the doctrinal preferences of the Supreme Court, the Court will learn about it, because of the incentive of losing litigants to appeal. Moreover, the informational properties of the cert process allow the Court to direct its reviews with considerable precision, picking out the most significant cases.

All this is conjecture. No has yet worked out the informational properties of a game with multiple lower courts, hidden offers, costly appeals, fire alarms, and an effort-constrained reviewer. However, this crypto-model does a good job of tying together several literatures in judicial politics. In addition it leads to interesting questions about the construction of political institutions. Did the office of the SG come into being in order to exploit the Court's cert process, or did the presence of the SG allow the Court to adopt a fire-alarm rather than police-patrol based review process? Similarly, did the growth of interest groups that shared the courts doctrinal priorities allow the court to adopt its cert procedure, or did the Court's cert procedure encourage the growth of doctrinally sophisticated groups? Or both?

Incomplete contracting and law creation. All this is logical enough but it misses the feel of the most interesting action in the judicial system, law creation. The real issue, many would claim, is not whether lower court judges flout established doctrine -- they rarely do. Rather, the interesting issue is that often there is no doctrine, the Supreme

Court itself doesn't know what it wants to do, and the Circuit Courts just make up doctrine as they go along. How can the Supreme Court maintain order in a process like that?

Consider again the incomplete contracting model of Section IIC in which an implementation factor ω is unknown at time 1 when the law is written. I argued that legislative drafters might leave a gap in the law so a court, learning ω at time 2, could fill it. Suppose a lower court learns ω at time 2 by hearing the case, as I argued, but the higher court, not having heard the case, does not learn ω. In this rather peculiar situation, the lower court understands what the higher court wants better than the high court itself does. Can an effort constrained higher court exercise doctrinal control under such circumstances? The answer is yes, at least according to the analysis in Cameron, Segal, and Songer (CSS).

The key to the CSS analysis is the Banks auditing game. If the higher court can see the lower court's nominal policy x, then x may serve as a signal about the private information ω. In fact, the higher court can key a randomized auditing strategy on the value of x in such a way that the lower court is encouraged to reveal its private information by the way it sets x. The nominal policy x becomes a cue for cert (Songer). The average degree of congruence between the lower court's doctrine and the upper court's full-information policy depends on the higher court's review costs, which create a kind of slack in the system that lower courts can exploit. However, if review costs aren't too high, there should be quite a lot of doctrinal congruence between the top and the bottom of the hierarchy. In addition, the CSS model exhibits a striking responsiveness result: if the preferences of the higher court shift, the doctrine of the lower court shifts (weakly) in the same direction. Songer, Segal, and Cameron present empirical evidence supporting the responsiveness result.

One way to interpret the CSS model is, *if* the cert process reveals "x," the lower court's nominal policy, doctrinal control can work fairly well. This interpretation

underscores the importance of unraveling the informational properties of the cert process. However, PPT has scarcely begun this analysis (Schwarz, 1991, in an interesting effort along these lines.) I believe a convincing analysis will have to take into account judicial procedure in a more imaginative way than has been attempted. I turn to judicial procedure in the next section.

B. DOCTRINE-SETTING GAMES

A substantial part of the PPT of Congress analyzes floor rules, the construction of amendment agendas, gate keeping authority, jurisdictional rules such as multiple referrals, and other fine-grained details of procedure. Congressional scholars undertake this abstruse and often technically demanding work because they believe, along with most sophisticated observers of Congress, that the details of procedure are important in determining outcomes. Concern with structure and procedure is one of the hallmarks of neoinstitutionalism in congressional studies. In contrast, the PPT of courts has tended to ignore the fine grain of judicial procedure (work by Kornhauser and Schwartz stand out as exceptions). Similarly, many empirically oriented specialists in judicial politics, in contrast with their colleagues who study Congress, downplay the importance of procedure.[21] This neglect of institutional detail stands in considerable contrast with what is offered in textbooks on legal method and taught in the classrooms of law schools, where enormous amounts of effort are expended training law students to manipulate the rules of the legal game -- "to think like lawyers." Perhaps what is written in legal textbooks is just humbug to overawe the credulous. Perhaps what goes on in law schools is just a

[21] It is an interesting sociological fact that political scientists who specialize in judicial politics retain a much more austere form of behaviorism then almost any other group in the profession. Perhaps this methodological Puritanism is a lingering response to the legal formalism that once dominated thinking about the law, both in political science and the legal profession. If congressional scholars had to contend with such an arid and overbearing formalism, perhaps in reaction they would still be applying Michigan voting models to congressmen, rather than just assuming goal driven behavior and moving on to study the logic of strategic behavior in institutions.

conspiracy among the professoriate to fleece aspiring lawyers (and more power to them). But many close observers of the legal system, including some political scientists, believe otherwise. Epstein and Kobylka (1992) for example conclude their empirical study of Supreme Court decision making on abortion and the death penalty by noting

> "the law," as legal actors frame it, matters, and it matters dearly ... Interested advocates spend an immense amount of time forging and fashioning arguments grounded in "the law," and there is substantial evidence that the less ideologically driven justices take these arguments seriously and account for them in explaining the positions they take. In this sense, the life of the law *is* experience, but it is not experience in the absence of logic; rather it is experience filtered through logic. To ignore this is to ignore much of the dynamics of legal change, and much of what separates it from other paths of policy alteration. . .explications of legal change cannot focus wholly on political factors without distorting the process they seek to explain. (pp. xiv, 310-311).

In this section I offer a few ideas for positive political theorists who suspect that Epstein and Kobylka are right. The main difficulty, it seems to me, is not creating a formal vocabulary for studying judicial procedures, which is actually easy to do. Rather, the tough part is figuring out how to use the apparatus in an interesting way: what's a good question? In exactly what sense does "the law" matter? Nonetheless, perhaps it is time for positive political theorists to devote the same attention to judicial procedure that we have to congressional procedure.

In this section I outline a doctrine-setting game that differs from standard spatial voting games and seems closer to what actually goes on in courts. A useful point of departure is the following comment by Judge Posner:

> A court is a public body for resolving disputes in accordance with law. In every case the court must determine what the facts are and what their legal significance is. If the court determines their legal significance by applying an existing rule of law unchanged, it is engaged in pure dispute resolution. But if to resolve the dispute the court must create a new rule or modify an old one, that is law creation. (1985, p. 3)

The interesting part of the comment is not the observation that judges create law, but rather the ideas of *facts*, *rules*, and *legal significance*. I will try to show how each one of

these ideas can be approached with relatively minor modification of the spatial models familiar to positive political theorists.[22]

Facts and cases. The basic building block in this approach is the *fact space*, X. The fact space will typically be a part of a Euclidean space, but could conceivably be a lattice.[23] We discuss some examples shortly, but an illustrative fact space could be an interval on the line, representing "relative degree of negligence of plaintiff and defendant." Or, one dimension of a fact space might be "degree of negligence by the plaintiff." Another dimension might be "degree of negligence by the defendant," and the fact space could be constructed by taking the Cartesian product of the two dimensions. (Figure 2 provides an example). A fact space thus represents a set of states of nature.

A *case* is simply a vector (i.e., a point) in a fact space. Hence, cases are bundles of facts. Some of these facts are legally relevant; others are not. A *finding of fact* or questions of fact concerns the placement of a case in the fact space of relevance to judicial doctrine. Typically, higher courts accept matters of fact established in lower courts and restrict themselves to questions of law.

Judicial doctrine. *Judicial doctrine* can be thought of as a function from facts or states of nature to legal outcomes or judgments, i.e.,

$$d: X \rightarrow \{0,1\}$$

The doctrine function maps vectors in the fact space into elements in the judgment space, where 0 and 1 indicate a judgment for one or the other of the disputants. In this sense, legal doctrine is exactly a rule, as suggested by Posner. The outcome space can easily be extended to incorporate penalties or transfers of wealth, if appropriate, but for simplicity I assume dichotomous judgments.

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[22] Throughout this section, I assume courts are unitary actors or can be treated as such. This is an abstraction, of course, but it allows me to focus on other questions. Kornhauser, 1992a and b, study collegial courts.

[23] A lattice affords a natural way to represent dichotomous fact situations (e.g., defendant was negligent or not negligent), so that legal rules applied to complicated fact situations resemble Boolean algebra (see the discussion of liability law in Kornhauser, 1989). However, Euclidean fact spaces can be seen as more basic than lattices (e.g., one can consider what *level* of care implies the defendant was negligent or not). I consider only Euclidean fact spaces.

The essential characteristic of a judicial doctrine, understood as a fact-to-outcome function, is that it partitions the fact space, assigning to every member of a given partition a particular outcome. In other words, it creates a set of equivalence classes in fact space. This feature of legal doctrine -- the creation of equivalence classes in fact space -- is well recognized in the traditional literature on jurisprudence. Oliphant, for example, notes that

> No identical case can arise. All other cases will differ in some circumstance, -- in time, if in no other, and most of them will have some differences which are not trivial. *Decision* in the sense of *stare decisis* must, therefore, refer to a proposition of law covering a group of fact situations ... as a minimum, the fact situation of the instant case and at least one other. To bring together into one class even this minimum of two fact situations however similar they may be, always has required and always will require an abstraction. . . Classification is abstraction. An element or elements common to the two fact situations put into one class must be drawn out from each to become the content of the category and the subject of the proposition of law which is thus applied to the two cases. (quoted in Berch *et al* p. 69)

We can rephrase such traditional jurisprudential language in the following way. It is extremely unlikely that any two randomly chosen vectors in a fact space are absolutely identical (in fact, equality of the vectors is an event of measure zero). But, we wish to declare that some vectors are similar or different, in the sense that the associated judicial decision in a dispute should be the same in the first case and different in the second. A doctrine function tells us which vectors belong in the same class and which in different classes.

This definition of judicial doctrine is almost identical to that of an "extended rule" suggested by Kornhauser (1992a, 1992b). The fact space X is very similar to "C," the set of all possible cases, in those papers.

Judicial preferences. In this setting, judges have preferences over doctrine, in other words, preferences over functions that partition the fact space. This may seem strange, but Savage uses a similar formulation in his classic *Foundations of Statistics*

(1954).[24] As a practical matter, preferences over partitions can be easy to implement. For example, if the fact space is a line segment and the judge wishes to divide the segment in two, the judge's utility function can be taken to be a measure of the distance between the actual boundary of the two partitions and his ideal boundary point. In this somewhat special case, familiar distance metrics can be used, such as a quadratic loss function (Cameron, Segal, and Songer).

From the perspective of traditions in empirical political science, this conceptualization of judicial preferences is completely compatible with the apparatus of the "attitudinal model" commonly employed in empirical studies of judicial decision making (Segal and Spaeth, 1993). In fact, it fits much better with Glendon Shubert's original formulation than does a standard spatial model of a policy space.[25] This way of thinking about judicial preferences also seems broadly compatible with "fact-pattern" analyses, in which legal facts in cases are used (often very successfully) as predictors of judicial rulings (Segal, 1984 (search and seizure cases); George and Epstein, 1992 (death penalty cases); Hagle, 1992 (obscenity cases)). Teasing out the exact relationship between such studies, based on regression analysis of actual decisions, and a theoretical conception of legal doctrine as an incrementally partitioned fact space, would be a worth while project for a talented political methodologist.

Are preferences like this compatible with legal realism? No, if one takes preferences over doctrine as primitive, as Kornhauser (1992a and b) seems to do. But there is no reason to take doctrinal preferences as primitive. I have already argued that preferences over judicial policy are induced by preferences over social outcomes. Analogously, preferences over judicial doctrine (partitions) can be induced by preferences

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[24] I thank Susan Elmes for pointing this out to me.

[25] In the interest of brevity, I just assert this point. But it is not hard to show using an amendment agenda and a status quo policy that Shubert's conceptualization, as presented in Segal and Spaeth, 1993, pp. 67-69, is logically incompatible with the standard spatial model of voting. Reinterpreting Shubert's "i-points" as indifference points between two alternatives also leads to contradictions.

over social consequences. Let me use "ω" as a short-hand way to refer to possibly complex mappings between legal doctrine and social outcomes. After hearing a case, a judge learns something about ω; if he has preferences about social outcomes, his new knowledge will induce preferences over judicial doctrine. This, it seems to me, is the essence of legal realism.

Legal reasoning, holding, and dicta. Given this apparatus, just what is it that judges *do*? Dean Edward Levi's description of legal reasoning remains a classic:

> The steps [in legal reasoning] are these: similarity is seen between cases; next the rule of law inherent in the first case is announced; then the rule of law is made applicable to the second case. . . The scope of a rule of law, and therefore its meaning, depends upon a determination of what facts will be considered similar to those present when the rule was first announced. The finding of similarity or difference is the key step in the legal process. (Edward Levi, 1949, pp. 1-2)

Justice Neely puts the matter in characteristically pithy fashion: "By defining the class, we arrive at the result" (1980, p. 10). Or, to put it in terms of doctrine functions and fact spaces, what judges do when they create law is *set boundaries in fact spaces*. Questions of law concern the partitioning of a fact space.

To understand how judges partition fact spaces, it is helpful to understand the concepts of "issue" and "holding." Consider the unit interval [0,1] as a fact space. Suppose no doctrine function has been defined over the space so the fact space represents a gap in the law, a set of contingencies or states of nature about which the law is silent. Now consider some point, x, in the interval, a state of nature that actually arises. Litigation brings the case to court. The court could simply announce a decision about which litigant wins (an element of $\{0,1\}$), but that is not how courts work. The institutional rule is,

> the court can decide the particular dispute only according to a *general* rule which covers a whole class of like disputes. Our legal theory does not admit of single decisions standing on their own. If judges are free, or

> indeed forced, to decide new cases for which there is no rule, they must make a rule as they decide. (Llewellyn, 1960, p. 41).[26]

In other words, the court must define an equivalence class. The "issue" is, in which equivalence class does the case lie? The "holding" gives the answer.

Here is an example taken from Berch *et al.*: "Should a 16 year old automobile driver be judged by the standard of ordinary care applicable to a 16 year old child, rather than that applicable to an adult?" The Supreme Court of Oklahoma when confronted with this question in *Baxter v. Fugett* issued the holding, "no." We can represent the legal situation via Figure 2. The fact space involves two dimensions, age of defendant and degree of care. To the right of p, doctrine is clearly defined: if one is older than 21 (let us say), there is a clear standard of care distinguishing negligent from non-negligent driving. To the left of p, the law is silent. The case, shown as x_1, falls into the gap below p. What standard of care applies in this region? The lower court held the driver was not negligent, a bid to establish a lower standard of care for 16 year old drivers. Given the court's ruling, it seems logically required that younger and more careful drivers could not be not negligent either, as shown in Figure 3.[27] The higher court reversed the lower court's doctrinal bid, presumably implying that older and less careful drivers also must be negligent (see Figure 4).

Signaling down revisited. This example shows the inherent ambiguity of a system that sets law incrementally through holdings. A court may use a ruling to shift the boundary of an equivalence class but rarely will a single ruling complete the process of doctrinal change, thereby establishing a complete legal regime change in Kornhauser's apt phrase. Absent a complete legal regime, there may be some uncertainty about where the court wants the bounds ultimately to lie (I suggest why in a moment). What then is the precedential effect of a single ruling, like the Oklahoma court's ruling? The ruling has

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[26] One may well wonder why in equilibrium this is an institutional rule, but that it is seems beyond dispute. This is one of the four "certain assumptions" that Llewellyn advises law students to learn so well "you can juggle with them standing on your head and in your sleep."

[27] This is "reasonably certain minimum rule" discussed by Llewellyn, 1960, pp. 74-75 and 85.

filled a gap, and so it has a clear precedential effect in the newly completed part of the fact space. However, consider Holmes's famous prediction theory of the law: "the prophecies of what the courts will do in fact, and nothing more pretentious, are what I mean by the law" (1897, p. 163). From this perspective, the impact of a holding is not just that it fills a doctrinal gap. Its impact also derives from it's effect on people's expectations about how the court will fill the remaining gaps. The same argument applies when an appellate court uses a holding to change an existing boundary in a complete legal regime, flatly changing the law rather than filling gaps. The effect of the holding is not just its impact on doctrine but its impact on people's predictions about how far the court will go in shifting the boundaries in the future.

Returning to Figure 4, what could a lower court infer about the precedential value of *Baxter*? Case x_2 involves an older and less careful driver, falling into the gap filled by *Baxter*. *Baxter*, it seems clear, established a relevant precedent for that case. Participants in legal proceedings could confidently anticipate the highest court would rule the driver negligent in such a case. What about x_4, in which a 16 year old exercises enough care to escape liability under the adult standard? It seems very likely that the court would find such drivers not negligent, but perhaps the court wants to establish an even tougher standard for younger drivers than older ones. So the precedential value of the holding is pretty clear for this case but not completely certain. What about x_3, where an even younger driver acts like the driver in Baxter? A lawyer might try citing Baxter as a precedent, to suggest such a driver is also negligent. But perhaps the Oklahoma Supreme Court will find that a lower standard applies to 10 year old drivers, so again there is room for error in using *Baxter* to predict the behavior of the upper court.

The game between courts (and litigants and lawyers, too, of course) is what I called "signaling down" in the previous section. Signaling down is much more complicated in this setting. Signaling may concern the upper court's doctrinal preferences (what its utility function is). But more interesting, I think, is signaling about "ω", the link

between doctrine and social consequence. In the earlier model, I assumed once a court learned ω it knew all there was to know about the link between policy and consequences. Suppose instead that the value of ω is localized in the fact space (in a moment I will suppose each observation of ω is noisy as well). Then hearing a single case reveals information about the doctrine-consequence link for that case and probably for proximal cases as well. However, the greater the distance to another case in the fact space, the more likely the link changes. Even if outside observers know the court's preferences about social outcomes perfectly well, if they are unsure themselves about ω then they cannot be entirely certain what the court will do when it hears a new case that differs factually from the old one. On the other hand, if the ω's are correlated (as they surely must be) the observers will be must less uncertain than if the court had not heard the first case at all.

This signaling game, or something similar, seems to underlie Posner's observation,

> The strength of adjudication as a method of creating law comes from the fact that the court is able to focus on arguments and evidence developed in the setting of an actual dispute; there is an analogy to the physical law that the power of an electromagnetic bean is inverse to its breadth. But the narrowness of the court's focus limits its ability to rule intelligently on factual situations remote from the one before it; and this in turn limits its ability to formulate sound rule of *general* application until the decision of many similar cases has shown that the same result ought to hold despite the factual differences in the cases. (1985, pp. 249-250)

Holdings can be seen as costly signals, because a holding does fill a gap and the ruling may stand (the logic is the same as in signaling versions of take-it-or-leave-it bargaining games, like Banks, 1990). However, judges also send what are clearly costless signals. An example is a statement of the "*ratio decidendi*," the reasoning behind the judgment. A judge may explain why he thinks his holding is correct, and he may state clearly what he thinks doctrine in the fact space should be. But the statement is not a holding and its precedential value depends solely on how it affects the beliefs of observers. Less dramatically, judges sometimes indicate how they might hold if confronted with other cases that differ factually from the instant case. Such costless statements are called

"*dicta*" (especially by later actors who seek to limit the impact of an earlier holding). Signaling theory suggests that the costless signals of *dicta* may be very important in shaping the expectations of observers. Casual observation certainly seems to confirm this expectation. It is hard otherwise to understand why so much effort goes into writing lengthy opinions, collecting and distributing them, and parsing their every phrase. The wild fact situations thrown at first year law students seem designed to teach them how to distinguish holdings from *dicta* and how to interpret and manipulate both.

Although this framework utilizes a spatial setting, the doctrine-setting game is quite different from legislative policy making games. For example, the difference between open and closed rules simply doesn't arise. The court is not freely selecting a policy (open rule), not is it exactly choosing between two definite policies (closed rule). Rather, the placement of a case in the fact space is whatever it is. Deciding what *dicta* and holding really *mean* requires deciphering signals. Ultimately, the doctrinal impact of a holding depends on the interpretation of other actors.

Case selection. Schwartz astutely notes that if courts really set policy under an open rule, it is hard to understand why legal participants put so much emphasis on case selection -- one civil rights case (say) is as good as another for a court setting policy (1992, p. 233). It is also hard to understand why observers of the legal system see a lot of path dependence in the law. Fuller claims, for example, that "Often an entire field of law is influenced permanently by the particular form taken by the first case arising in the field" (quoted in Berch *et al* p 40). In contrast, case selection becomes very important in the doctrine-setting game because of the emphasis on incremental decision making. Test cases, bridge cases, and what might be called invitational or window-opening cases become understandable.

An invitational case signals observers that a court is inclined to fill a gap or move the boundaries in the fact space. Accordingly, it opens the window for test cases. The court's willingness to create or alter doctrine may arise because of a change in its

composition (preferences change) or because it suspects that the doctrine-consequence link has altered with time. In either case, the court's holding or *dicta* invite litigants to test boundaries and lower courts to experiment with doctrine. In terms of the liability example, *Baxter* might be a window case, and x_5 a good test case.

Many examples of invitational cases can be found. For example, *Gregg v. Georgia* apparently was an invitational case in death penalty law (George and Epstein, 1992, pp. 331-332). In obscenity law *Redrup v. New York* (a 1967 case) and *Miller v. California* (a 1973 case) played this role (McGuire and Caldeira, 1993). McGuire and Caldeira present data that suggest these two cases led obscenity lawyers to submit floods of cases to the Supreme Court, to test the limits of emerging doctrine. Tushnet suggests that the Supreme Court's holding on university cases persuaded the NAACP to attempt a direct attack on segregation in the 1950s (1987, p. 107). Then, after the Court's decision striking down segregated education, it invited cases on remedies in order to ponder how to proceed next (p. 143). Many other examples can be found in Wasby, 1992.

Fuller discusses the idea of a doctrinal bridge between existing rules and new law:

> Pollock in his treatise on contracts admits the reasonableness of the decision [in *Shuey v. United States*] but adds the remark that "it seems a rather strong piece of judicial legislation." ... had such a case [intermediate between existing law and *Shuey*] existed before the *Shuey* case is it likely than anyone would have regarded that decision as a "strong piece of judicial legislation"? Pollock's attitude was influenced by the purely fortuitous circumstance that there did not exist a case which could operate to carry his mind, without shock, from the older cases to the decision in the *Shuey* case. The possibility that a doctrinal bridge may be lacking represents, then, an additional element of fortuity in the development of case law, operating to make the litigant's rights depend on the chronological order in which his case comes up. Furthermore it is an element which is especially likely to be operative in fields where social practice is changing rapidly. [Quoted in Berch *et al.* p. 41]

These examples suggest some rather complicated models that have the flavor of optimal search or bandit problems in stochastic dynamic programming (Ross, 1983). (These are not signaling models but bear on the larger signaling game). Suppose the

Supreme Court believes "ω" may have shifted. Suppose each case it hears provides some information about ω, but hearing a case has a review cost or prevents the court from hearing another case that might bring a better doctrinal reward. How many cases should the court hear before it announces a general rule (using *dicta*), and switches its attentions to another area of the law? What happens to the number of cases heard in each area and the breadth of *dicta* as the number of cases presented to the court rises, so the opportunity cost of reviewing each one increases?[28] Alternatively, suppose the Court believes that ω may vary over the fact space. What is the optimal placement of cases in the fact space that best trades off review costs and the probability of getting a boundary in the wrong place? As a simple example, assume the fact space is the unit interval and assume the court wants to establish only two partitions. These problems shouldn't be too hard to solve in this setting. The solutions, I suspect, would convey the nature of the tradeoffs nicely.

Consider as well the problem of an optimal litigation strategy for an interest group. An obvious issue involves the optimal placement of bridge and test cases to best utilize litigation resources. However, a particularly interesting and tricky problem is optimal concessions, an issue that Epstein and Kobylka claim proponents of abortion and opponents of the death sentence faced in recent years (1992). Suppose the composition of the Supreme Court changes, so that the court wants to alter a doctrine that the group favors. Critically, the court itself is unsure how far to go, until it has a chance to examine specific cases -- it gropes its way to a new doctrine. Moreover, the court is unwilling to expend unlimited resources on hearing cases. Consequently, if the group offers the Court a concession case, one that moves doctrine in the direction the court favors but not too far in that direction, the Court may decide to quit hearing more cases -- the new doctrine may be close enough to what the court suspects is its preferred policy to satisfy it. The concession acts as a kind of doctrinal fire break in the fact space. As I read Epstein and

[28] Strauss, 1987, contains many interesting observations about the doctrinal consequences of case load. I suspect that the type of bandit or search model I am proposing would tend to confirm his conjectures.

Kobylka, 1992, in recent years abortion and anti-death sentence groups may have missed the chance to build these sorts of fire breaks and got worse doctrines than they had to.

Welfare implications. This type of thinking is suggestive, but the real informational properties of doctrinal signaling games are not at all clear, at least to me. However, legal scholars have been quick to claim that the system of *stare decisis* has very desirable normative properties. Macey, for example, notes that using precedent allows judges to

> free-ride on the expertise of other judges in those areas of the law in which they do not specialize, and create new law in those areas in which they feel they have expertise. This phenomenon is particularly obvious in multi-judge panels such as those that exist on federal circuit courts of appeals Judges will hear these cases in panels of three, and opinions often will be assigned to judges on the basis of their experience, interest, and expertise. Thus judges can trade their expertise for the expertise of other judges. (Macey, 1989, p. 103)

In addition, "stare decisis allows judges to reduce the probability of error because it permits them to check their results against those of other judges trying similar cases" (Macey & Miller, n.d., p. 24).

Neely goes even farther:

> Miraculously, it is possible for a judge without the slightest knowledge of economics to apply this body of law [e.g., contracts, antitrust, corporations, securities] merely by reviewing precedent. Without ever having heard of Adam Smith or John Maynard Keynes, a judge can consult accepted economic wisdom by following the rules in previous cases -- even those cases where the economic reasoning either was not explicit or was written in such a way as to emerge as utter nonsense. When a judge looks at five cases with similar facts, all decided the same way, he need not understand the reasoning behind them in order to decide the sixth case the same way. It is, therefore, unnecessary for everyone in the system to understand the total structure. The system yields good results because in this respect it is set up like the army: an organization designed by geniuses which can, when necessary, be executed by idiots. (Neely p 215)

The basic claim is that the system of precedent allows boundely rational courts to muddle though to relatively good results. The doctrine-setting game I described operationalizes bounded rationality as an inability to perceive the doctrine-consequence

link much beyond the instant case. If this approach has merit, then it is conceivable that we might be able to evaluate the welfare properties of a precedential system.

Judicial heresthethics. I'll conclude this section by briefly noting the applicability of Riker's heresthetics to judicial doctrine-setting. Riker's heresthetics deals with the art of political manipulation. Prominant among heresthetical devices is introducing a new dimension. Llewellyn vividly describes how courts use the same tactic:

> If a later court, in pondering a case substantially equivalent, does not like the results achieved by the earlier court, then it may reach a contrary result in either of two ways. Either it may reject the rule laid down by court number one; and this is not so likely. Or it may accept that rule as a formula, may cite the prior case as authority, and yet interpret the raw evidence before it differently, saying that due to the difference in the facts, the rule does not apply. . . [Harmonizing two apparently discordant rulings] is achieved by taking a *distinction*, by picking out some feature which differentiates the cases, but which neither court has stressed, and by insisting that this differentiating feature is what accounts for the results. The differentiating feature may be a point of fact; it may be a difference in the procedural set-up of the cases. In either event its striking aspect, from our angle, is that the distinction taken occupied no great amount of the attention of the two courts under discussion. (1960, pp. 66-67)

This process of introducing new dimensions in a fact space, either to arrive at a different conclusion about two proximal cases in a fact space or the same conclusion about two distant cases, is a wonderful example of judicial heresthetics.

Another example of judicial heresthetics is framing an issue. Lower courts with their superior ability to find facts and ability to move first often seem able to frame the legal issues in disputes. In other words, they have some flexibility in defining the dimensions of the fact space, restricting the maneuvering room of higher courts. Or so oral folklore suggests.

Because the creative element in heresthethical maneuvers looms so large, its hard to say very much systematically about them. Llewellyn indicates as much: "We have passed out of the realm of pure logic. . . Logic and science can tell us, and tell us with

some certainty, what the doctinal *possibilities* are. . . But they give us no certainty as to *whether* the possibility embodied in the argument will be adopted by a given court" (*Ibid*). I doubt judicial heresthethics will ever prove predictive, but it may be a useful way to understand retrospectively what happened during judicial doctrine-setting.

IV. Conclusion

From the viewpoint of theory, the best endowed sub fields of American politics are Congress and electoral theory. The worst endowed sub fields are probably the presidency and judicial politics. The reason usually offered for the paucity of good theory about presidents is the "small *n* problem," the difficulty of finding systematic empirical patterns in the small number of available cases. Without some empirical patterns to work with, it is often said, there is little to build theory about. From this viewpoint, the development of rich theory about elections and Congress is easy to explain, for these sub-fields are blessed with an abundance of good data. The paucity of good theory about judicial politics is a puzzle, though, because the systematic empirical evidence about courts collected by political scientists is truly impressive. Nor is an unwillingness to adopt the rational choice paradigm the answer. Walter Murphy's *Elements of Judicial Strategy* bears comparison with its contemporary, Anthony Downs's *Economic Theory of Democracy*, as a piece of rational choice analysis. Yet the latter has borne much richer fruit than the former.

I am willing to entertain the hypothesis that building theory about courts is simply more difficult than building theory about elections or Congress. The central concepts and problems in judicial politics -- interpretation, reasoning by analogy, *stare decisis*, gap filling, inter-branch power relations -- are just hard to get a handle on. They are tough nuts to crack.

At long last, though, we have some theory. I don't think you can read Ferejohn and Shipan, 1990, or Eskridge and Ferejohn, 1992, without a shock of recognition: the model in these papers really is capturing part of what courts do in the separation of powers

system. Moreover, the theory is usable for understanding specific cases of inter branch politics; Gely and Spiller, 1990, is a case in point. Nonetheless, most of the tough nuts remain to be cracked. It would be presumptuous to claim that the models I roughed out in this paper do more than hint at methods that may eventually prove useful. Some, or perhaps most, of these models will prove deadends. I do believe, though, that incomplete contracting and asymmetric information ultimately will assume a central place in modeling judicial processes.

The benefits from building a good theory of judicial politics extend beyond one sub field. If I am right that modeling judicial processes requires concepts from both legislative and bureaucratic politics, as well as concepts unique to judicial politics, then a good theory of judicial politics would help us understand not just courts but other political institutions as well. What makes a court different from a legislature or a bureaucracy? What is it good for, that legislatures and bureaucracies are not? How can different arrangements of courts, bureaucracies, and legislatures hang together in equilibrium, and what are the trade-offs across stable configurations of institutions? A good theory of courts would go a long way toward helping us answer these questions. The study of judicial politics has long been a parochial enclave for devotees of an exotic and mysterious institution. That day may be coming to an end.

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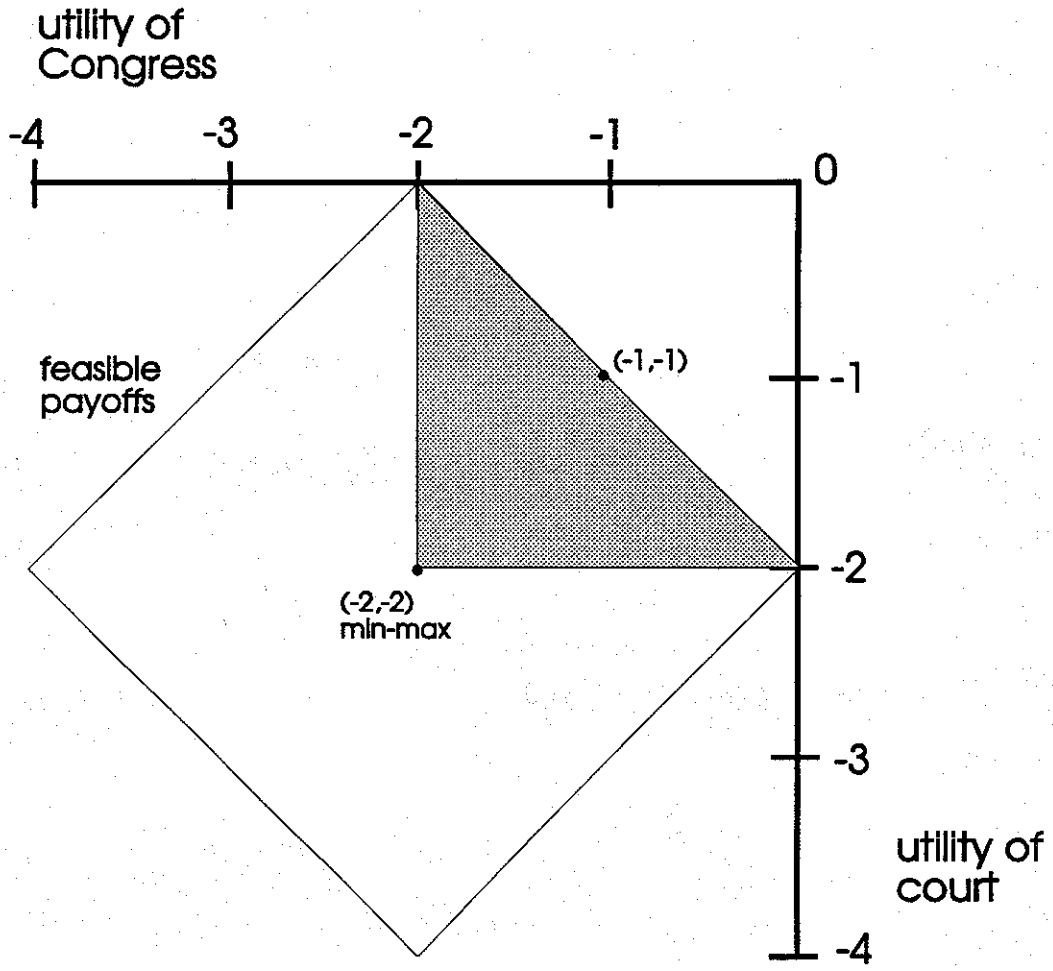

Figure 1. Infinitely repeated version of the standard game

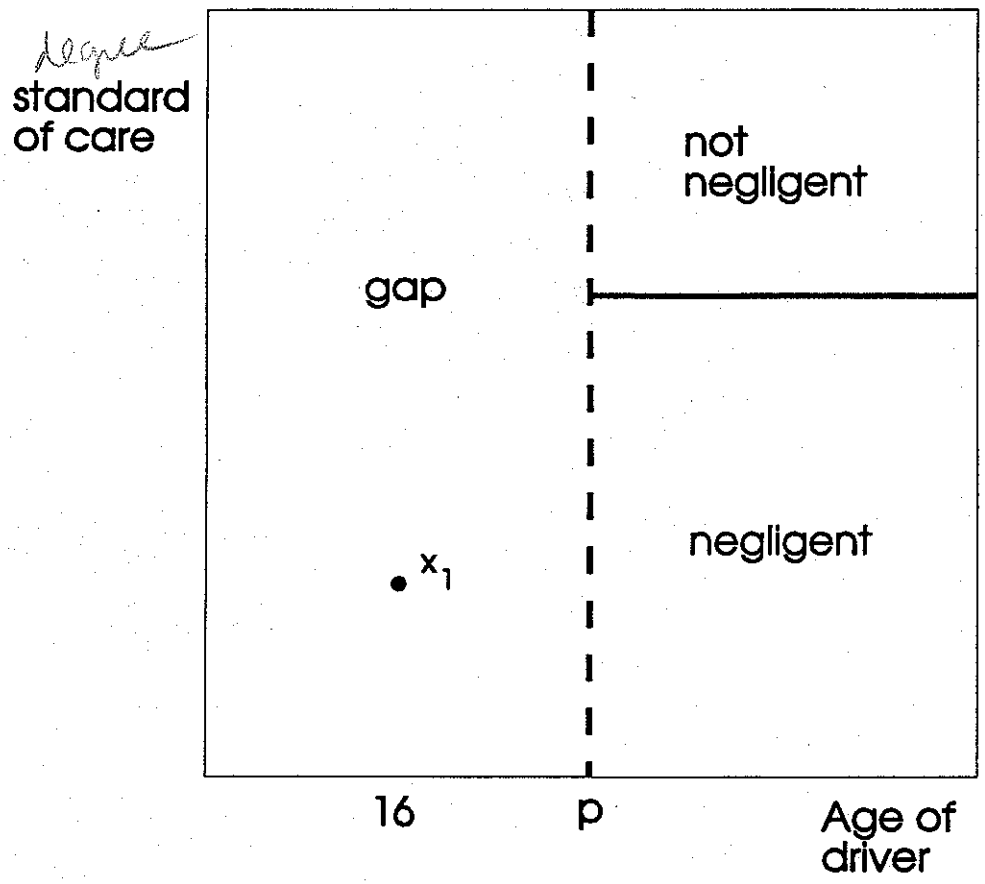

Figure 2. Doctrine before Baxter

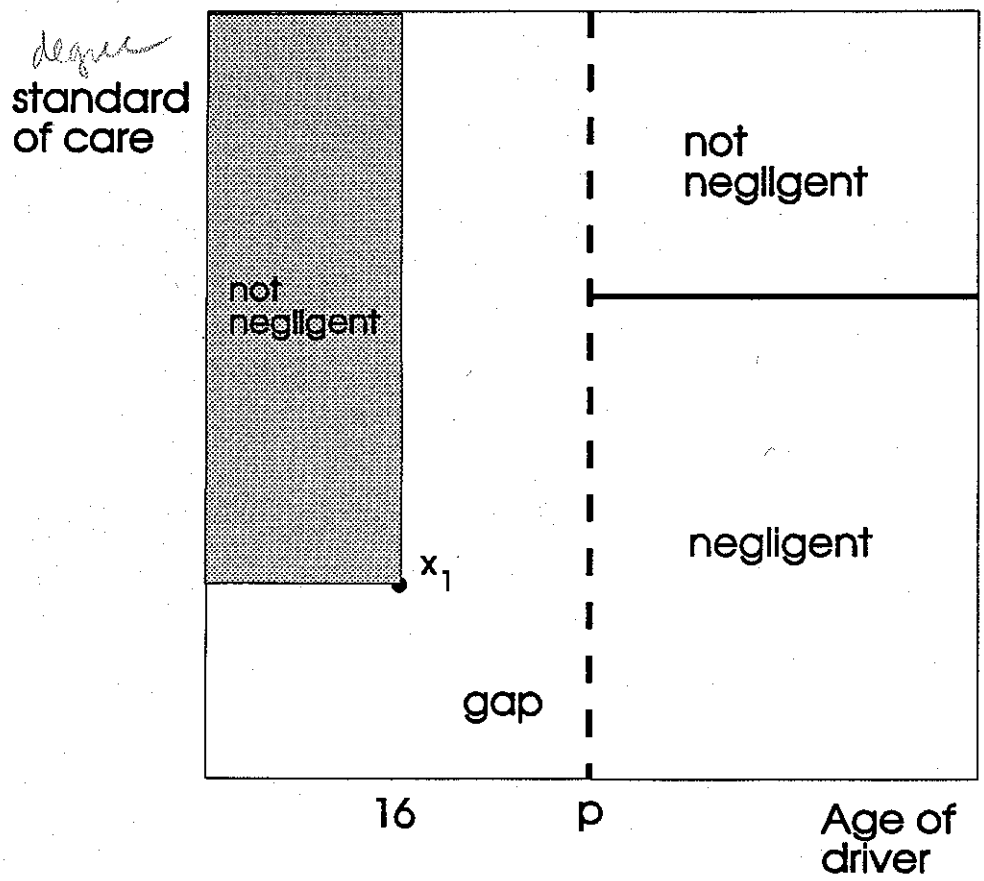

Figure 3. Lower court's doctrine-setting

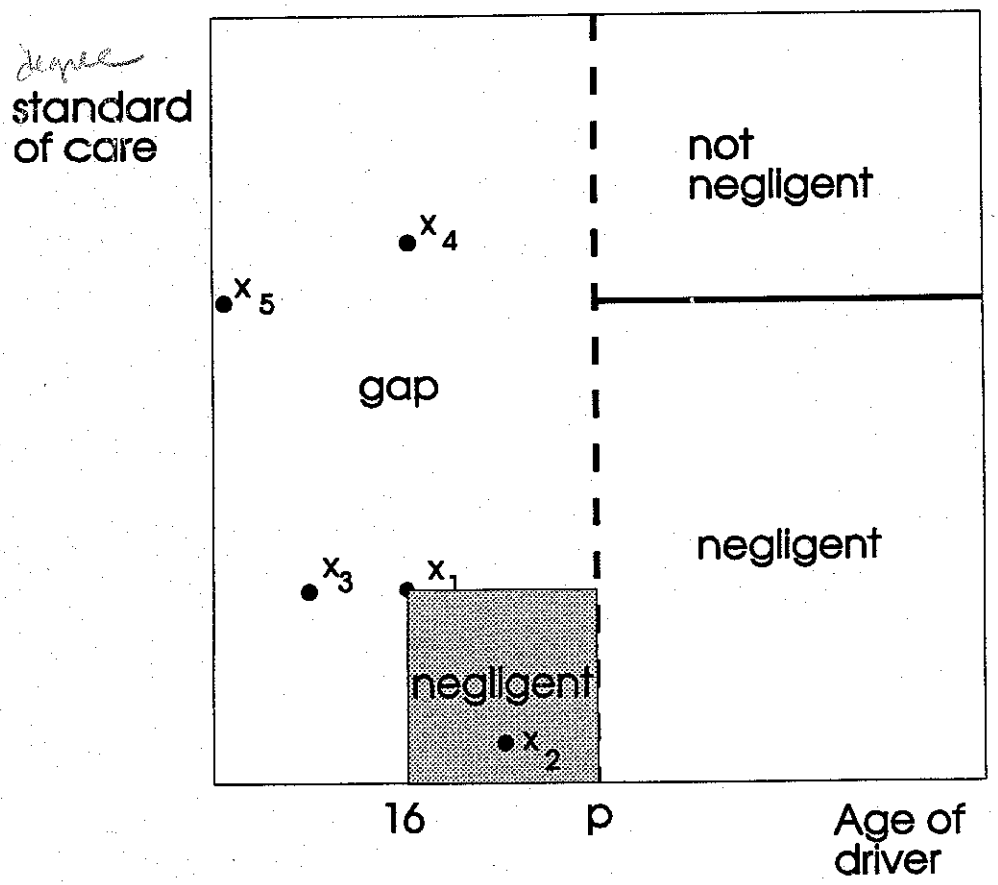

Figure 4. Higher court's doctrine