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Revisiting a Signaling Game of Legislative–Judiciary Interaction

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By adding an informational component to the judicial review, Rogers (2001) argued that an independent court can be created and maintained by a legislature. This influential article, however, has one important mistake in its game-theoretical model that changes the equilibrium results and ultimately undermines the theoretical contribution to the discipline. The legislature no longer enjoys informational benefits by having an independent court.

By adding an informational component to the judicial review, Rogers (2001) argued that the court's exercise of judicial veto could be informationally productive. Moreover, he argued that an independent court could be created and maintained by a legislature that solely values the achievement of its own preferred policy outcomes. This is a very interesting and, more importantly, influential argument that has motivated substantial research projects.[1] However, there is one important mistake in this game-theoretical model that changes the equilibrium results and ultimately undermines the theoretical contribution to the discipline. The legislature no longer enjoys informational benefits by having an independent court.

1 Rogers (2001): Contribution and Mistake

The intellectual contributions that Rogers (2001) provided to the discipline are not small. He presented convincing arguments that led us to believe that the court (especially the Supreme Court of the United States) enjoys informational advantages over Congress. He also showed that the court's *strategic* choices (designed to pursue its own interests) consequently benefit the legislature: the legislature can have unfavorable policy outcomes to be corrected later by the court.

- The *convergent* court vetoes legislation when the legislation turns out to be inappropriate, which is beneficial to both the legislature and the court.
- The *divergent* court also vetoes legislation when the legislation turns out to be inappropriate, which is beneficial only to the legislature and not to the court.

While the first type is a "distributive" benefit that comes from the agent who shares the same goal with the principal, the second type is a so-called "informational" benefit. The informationally rich agent is automatically constrained by their rich information when pursuing their own goal, which consequently promotes the principal's goal at the same time. According to Rogers (2001), this informational benefit allows the legislature to *voluntarily* choose to create the independent court system, in which the legislature never punishes judicial veto.

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[1]According to Google Scholar, Rogers (2001) was cited more than 200 times as of 2015.

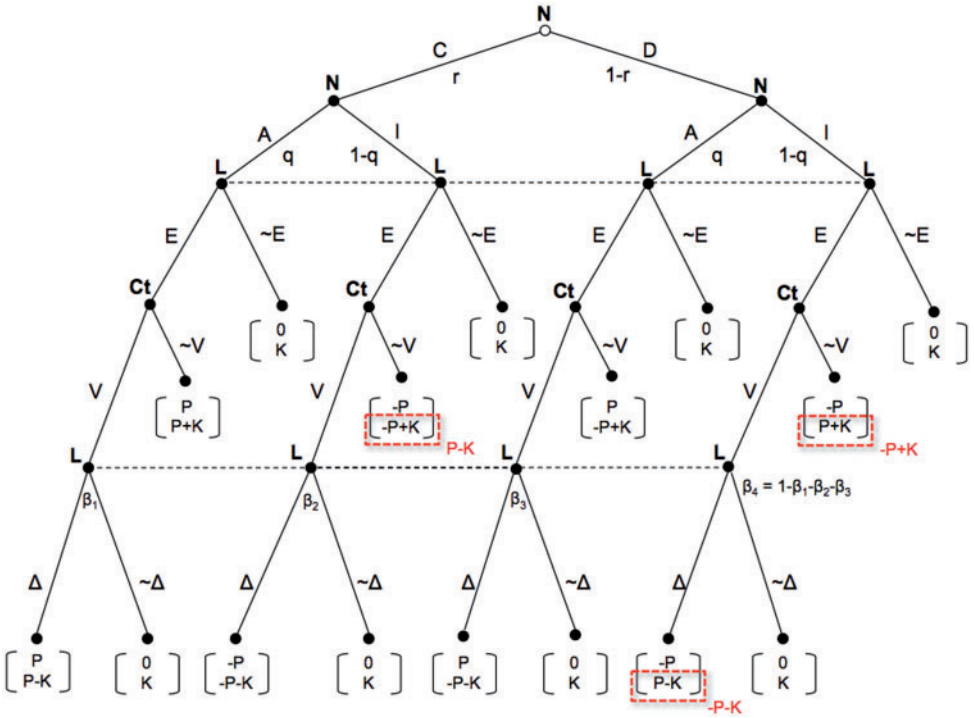

Fig. 1 Game tree with correct payoff values.

However, there is one important mistake in his game-theoretical model. The payoff values in the game tree do *not* reflect the payoff structure that is explicitly described in the text.[2] In other words, he solved a different model from the one he described in the text.[3]

- When *Ct* (court) turns out to be *convergent* (C) and the statute turns out to be *inappropriate* (I), there is a situation in which *L* (legislature) chooses *E* (enact the legislation) and *Ct* chooses $\overline{V}$ (not veto). Then, *Ct* should receive $-P$, instead of P, because the convergent *Ct* enjoys the same payoff as *L*, and it should additionally receive K, instead of $-K$, because there is no veto and thus no punishment.
- When *Ct* turns out to be *divergent* (D) and the statute turns out to be *inappropriate* (I), there is a situation in which *L* chooses *E* and *Ct* chooses $\overline{V}$. Then, *Ct* should receive P, instead of $-P$, because the divergent *Ct* enjoys the opposite payoff of *L*, and it should additionally receive K because there is no veto and thus no punishment.
- When *Ct* turns out to be *divergent* (D) and the statue turns out to be *inappropriate* (I), there is a situation in which *L* chooses *E*, *Ct* chooses *V*, and *L* chooses Δ (punish the court). Then, *Ct* should receive P, instead of $-P$, because the divergent *Ct* enjoys the opposite payoff of *L*, and it should additionally receive $-K$ because there is punishment.

Figure 1 shows the revised game tree with correct payoff values. The dotted boxes indicate the places where mistakes occur, and the original values are also listed there outside the box.

2 New Equilibria with Correct Payoff Values

Table 1 summarizes two sets of equilibria before and after correcting the payoff values.[4] Notably, *Ct*'s equilibrium strategy has changed under the "Independent Judiciary" equilibrium. Under the

[2]See Online Appendix A for the full specification of the payoff structure used in Rogers (2001), as well as in this memo.
[3]While this research memo deals only with the mistake in payoff values, there are reasons to believe that the legislature's information sets can be revised as well. See Online Appendix B for more discussion on this.
[4]Online Appendix A discusses the full game-theoretical model with proofed equilibria, as well as a few new propositions.

Table 1 Comparison of old and new equilibria

	Old			*New*	
Eq'm 1: Independent Judiciary	*L*: always *E* *Ct*: $\overline{V}$ if *CA* *V* otherwise *L*: always $\overline{\Delta}$			*L*: always *E* *Ct*: $\overline{V}$ if *CA* or *DI* *V* otherwise *L*: always $\overline{\Delta}$	
Eq'm 2: Legislative Supremacy	*L*: always *E* *Ct*: always $\overline{V}$ *L*: always Δ	when $q \geq 0.5$			
Eq'm 3: Legislative Supremacy	*L*: always $\overline{E}$ *Ct*: always $\overline{V}$ *L*: always Δ	when $q \leq 0.5$			

Note: In the new equilibrium, there are more significant changes on L's belief system in Period 3, which is fully listed in Online Appendix A.

old equilibrium, both convergent and divergent *Ct* were needed to veto when *L* enacted a statue that turned out to be inappropriate. This was a pooling strategy that allowed *Ct* to maximize its entire expected utility while divergent *Ct* suffered from its own *strategic* veto on inappropriate statute. However, under the new equilibrium, *Ct* no longer pools its strategy. Rather, it can freely choose to veto (or not) purely based on its *sincere* preferences.

This seemingly small change in *Ct*'s strategy consequently affects *L*'s interests rather significantly. Under the old equilibrium, divergent *Ct* corrected *L*'s mistake when a statute was inappropriate even though it was against *Ct*'s narrow self-interest. This was the informational benefit from the independent court system, which was Rogers' key argument. However, under the new equilibrium, *L* does *not* enjoy this benefit anymore. Now, convergent *Ct* always works with *L*, and divergent *Ct* always works against *L*. Even with an independent court, the legislature cannot acquire *additional* benefit that comes from the court system in general (i.e., informational benefit) on top of the benefit that comes from the convergent court (i.e., distributive benefit). Simply speaking, we now cannot observe the major contribution of Rogers (2001).

In order to see the change more vividly, Fig. 2 plots the type-probability combinations that support the old and new sets of equilibria. First, the A and B regions that are supported by the "Independent Judiciary" equilibrium have significantly reduced in size from panel (a) to panel (b). On average, the legislature will have a harder time justifying the court system that works independently.

Second, the comparative static has changed from being asymmetric to symmetric in *L*'s belief on a statute's appropriateness (q). In panel (a), when *L* was more likely to believe that a statue would be inappropriate ($q \leq \frac{1}{2}$), *L* could choose an independent judiciary no matter what *Ct* was (convergent or divergent). However, when an appropriate statute was expected ($q \geq \frac{1}{2}$), the independent judiciary system depended upon which *Ct* would be (r). This asymmetry came from the pooling strategy that *Ct* used for inappropriate statute. Now, in panel (b), without *Ct*'s pooling strategy, the effect of r becomes simply symmetric, about $q = \frac{1}{2}$.

Third, in a different perspective, the comparative static is now asymmetric in *L*'s belief on *Ct* (convergent or divergent). Quite reasonably, the independent judiciary system now cannot be created and maintained when *L* believes that divergent *Ct* is more likely ($r \leq \frac{1}{2}$): no correction is expected and a divergent "agent" will pursue its own goal. However, when *L* believes that convergent *Ct* is more likely ($r \geq \frac{1}{2}$), it depends on *L*'s belief on a statute's appropriateness (q). If the state looks too obvious in either direction, appropriate or inappropriate (i.e., q goes to either 1 or 0), *Ct* has no choice but to follow *L*. However, if the state looks rather ambiguous (i.e., q is around $\frac{1}{2}$), *Ct* can enjoy its preferred situation, which is an independent judiciary.

Substantively speaking, under the Rogers' original model, the legislature was less dependent upon the characteristics of the court. In addition, it could even expect an informational benefit from the divergent court. Thus, the independent court system with judicial review power was not entirely

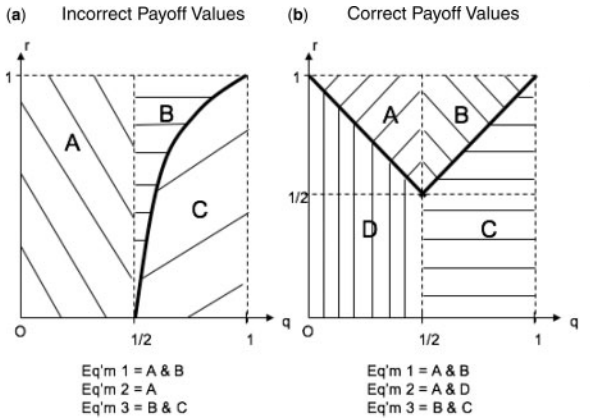

Fig. 2 Probability combinations of types under equilibria.

against the interests of the legislature. However, after correcting Rogers' mistakes in payoff values, the legislature depends more on the court and the informational benefit disappears. Thus, the legislature does not have an incentive to have an independent court system. In sum, we no longer observe Rogers' contribution to the literature.

3 Conclusion

Despite a creative attempt to add an the informational component to the judicial review, Rogers (2001) made an important mistake in payoff values. Correcting them gives us new equilibrium results that are not consistent with his original, and ground-breaking, arguments. Now, an independent court does not provide the legislature with informational benefits on top of distributive benefits. That is, we no longer observe Rogers' big contribution to the literature.

Conflict of interest statement. None declared.

Reference

Rogers, James R. 2001. Information and judicial review: A signaling game of legislative–judicial interaction. *American Journal of Political Science* 45(1):84–99.