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## Justice as Fair Division

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# Justice As Fair Division

Ian Bartrum, Kathryn Nyman & Peter Otto\*

## *Abstract*

*The current hyperpoliticization of the Court grows out of a feedback loop between politicized appointments and politicized decision-making. This Article suggests a change in the internal procedures by which the Court hears and decides particular cases. A three-Justice panel hears and decides each case. Appeal to an en banc sitting of the entire Court would require a unanimous vote of all non-recused Justices. This Article explores several possible approaches in selecting the three-Justice panel. This Article proposes that applying a fair division scheme to the Court's decision-making process might act to reverse this loop and work to depoliticize the Court over time.*

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## I. INTRODUCTION

*“I assume that to each according to his threat advantage is not a conception of justice.”<sup>1</sup>*

Our Supreme Court has always been a political institution.<sup>2</sup> It has been a partisan institution since parties captured American politics in the late 1790s.<sup>3</sup> In some sense, this is an inevitable—even a desirable—state of affairs.<sup>4</sup> Constitutional questions are in part political questions, and whatever value parties add to politics generally, they may bring derivatively to the Court.<sup>5</sup> In other important ways, however, a hyperpolarized Court is neither foregone nor felicitous. Entrenched partisan ideology in the judiciary not only cuts a potential shortcut through our representative processes, but the path it leaves is largely insulated from popular accountability.<sup>6</sup> This, in turn, leads to the intense politicization of the judicial appointments process—particularly for seats on the Supreme Court—with the parties treating vacancies as either existential threats or generational opportunities.<sup>7</sup> In 2016, this produced a constitutional stalemate that left our highest court shorthanded for over a year.<sup>8</sup> This essay assumes that this sort hyperpoliticized Supreme

1. JOHN RAWLS, A THEORY OF JUSTICE 134 (Belknap Press, 1971).

2. See GORDON S. WOOD, EMPIRE OF LIBERTY: A HISTORY OF THE EARLY REPUBLIC, 1789–1815, at 400 (Oxford Univ. Press, 2011) (providing a historical development of the judicial branch).

3. See *id.* at 239.

4. See Richard A. Posner, *The Supreme Court is a Political Court. Republicans' Actions are Proof*, WASH. POST (Mar. 9, 2016), [https://www.washingtonpost.com/opinions/the-supreme-court-is-a-political-court-republicans-actions-are-proof/2016/03/09/4c851860-e142-11e5-8d98-4b3d9215ade1\\_story.html?utm\\_term=.f4f4b9732ada](https://www.washingtonpost.com/opinions/the-supreme-court-is-a-political-court-republicans-actions-are-proof/2016/03/09/4c851860-e142-11e5-8d98-4b3d9215ade1_story.html?utm_term=.f4f4b9732ada).

5. See *id.*

6. See Learned Hand, *Due Process of Law and the Eight-Hour Day*, 21 HARV. L. REV. 495, 500 (1907). Judge Learned Hand put the point well in his response to *Lochner v. New York* over a century ago:

Whether it be wise or not that there should be a third camera with a final veto upon legislation with whose economic or political expediency it totally disagrees, is a political question of the highest importance. In particular it is questionable whether such a power can endure in a democratic state, while the court retains the irresponsibility of a life tenure, and while its decisions can be reversed only by the cumbersome process of a change of the federal Constitution.

*Id.*

7. See Posner, *supra* note 4.

8. See Gregor Aisch, Josh Keller, K.K. Rebecca Lai & Karen Yourish, *Scalia's Supreme Court Seat Has Been Vacant for More Than 400 Days*, N.Y. TIMES (Mar. 20, 2017), <https://www.nytimes.com>

Court is unhealthy for our democracy, and recommends some ways we might avoid it.<sup>9</sup>

We begin by acknowledging the challenge of swimming against the tide in these politically charged waters. Structural change is always difficult to accomplish; all the more so when it requires the cooperation of a majority party that sees advantage in the status quo.<sup>10</sup> With this in mind, we have focused on a reform proposal that would not require any changes to the constitutional text. Again, this is not to say that our proposal is likely to garner enough political support to bear fruit, but at least it does not demand the de facto impossibility of constitutional amendment.<sup>11</sup>

With that said, let us turn to the problem. We suggest that hyper-politicization of the Court grows out of a feedback loop between politicized appointments and politicized decision-making. Partisan decisions beget partisan appointments, and vice-versa. A number of contributors to this symposium have proposed changes to the appointments process.<sup>12</sup> We have instead suggested a change in the internal procedures by which the Court hears and decides particular cases, which we suggest will feed back into the appointments process in a helpful way.<sup>13</sup> This change could be brought about with a simple statutory modification, or perhaps a change in the Court's rules of procedure. Our proposal involves an application of what mathematicians and game-theorists call "fair division theory."<sup>14</sup>

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om/interactive/2016/02/15/us/supreme-court-nominations-election-year-scalia.html?\_r=0.

9. See *infra* Parts II–IV.

10. See Eric Posner, *The U.S. Constitution is Impossible to Amend*, SLATE (May 5, 2014, 4:22 PM), [http://www.slate.com/articles/news\\_and\\_politics/view\\_from\\_chicago/2014/05/amending\\_the\\_constitution\\_is\\_much\\_too\\_hard\\_blame\\_the\\_founders.html](http://www.slate.com/articles/news_and_politics/view_from_chicago/2014/05/amending_the_constitution_is_much_too_hard_blame_the_founders.html)

11. See Posner, *supra* note 10. A number of commentators—including some participants in this symposium—have made very thoughtful recommendations for reforms that would seem to require constitutional amendment. See e.g., Eric Segall, *Eight Justices Are Enough: A Proposal to Improve the United States Supreme Court* (Jan. 16, 2017), <https://ssrn.com/abstract=2900555>. We have premised our proposal on the notion that an Article V amendment is not possible. See *infra* Parts II–IV.

12. See e.g., Segal, *supra* note 11.

13. See *infra* Parts II–IV.

14. E.g., STEVEN G. BRAMS & ALAN D. TAYLOR, *FAIR DIVISION: FROM CAKE-CUTTING TO DISPUTE RESOLUTION* (Cambridge Univ., 1996).

## II. THREE-JUSTICE PANELS

As we have said, the appointments process is only the most publicized manifestation of Court's politicization problem.<sup>15</sup> While that process is problematic, it is in fact just a symptom of the larger disease. The primary source of judicial politicization is the emergence of litigation strategies that treat the Supreme Court as a partisan political institution, and a decision-making process that tends to encourage those efforts. At least since *Brown v. Board of Education*<sup>16</sup>—when the Justices waded into the political battle over civil rights in the South—reform-minded litigants have seen the Court as a potential political shortcut for controversial social movements. From voting rights,<sup>17</sup> to abortion,<sup>18</sup> to same-sex marriage,<sup>19</sup> to gun control,<sup>20</sup> to health care,<sup>21</sup> activists on both sides of the political spectrum have counted judicial heads and searched for test cases.<sup>22</sup> And, as a general matter, the Court has played along willingly, granting certiorari and deciding such cases even as political resolutions seemed within reach.<sup>23</sup>

The current way that the Court hears and decides cases is largely a mat-

15. See Posner, *supra* note 4 (explaining that the nomination process is a public display of the inner workings of the partisan court).

16. 347 U.S. 483 (1954).

17. See, e.g., *Reynolds v. Sims*, 377 U.S. 533 (1964) (striking down Alabama's districting plan); *Shelby County v. Holder* 570 U.S. 529 (2013) (striking down Section 4 of the Voting Rights Act).

18. See, e.g., *Roe v. Wade*, 410 U.S. 113 (1973) (striking down a Texas anti-abortion law).

19. See, e.g., *Obergefell v. Hodges*, 135 S. Ct. 2584 (2015) (holding that the Equal Protection clause confers the right to same-sex marriage).

20. See, e.g., *District of Columbia v. Heller*, 554 U.S. 570 (2008) (striking down prohibition on hand guns in the home).

21. See, e.g., *Nat'l Fed'n of Indep. Bus. v. Sebelius*, 567 U.S. 519, 552 (2012) (finding no Commerce Clause authority for the Affordable Care Act's individual mandate).

22. See, e.g., Joan Biskupic, *Special Report: Behind U.S. Race Cases, a Little-Known Recruiter*, REUTERS (Dec. 4, 2012, 9:21 AM), <https://www.reuters.com/article/us-usa-court-casemaker/special-report-behind-u-s-race-cases-a-little-known-recruiter-idUSBRE8B30V220121204> ("Working largely on his own, with the financial support of a handful of conservative donors, Blum sought out the plaintiffs in the Fisher and Shelby County cases, persuaded them to file suit, matched them with lawyers, and secured funding to appeal the cases all the way to the high court.")

23. See, e.g., *Obergefell*, 135 S. Ct. at 2605–06. This is not to suggest that the Court should never step in to protect rights that the representative branches have failed to respect. But as a counter-majoritarian actor, the Court lacks a consistent normative theory. See, e.g., JON HART ELY, *DEMOCRACY AND DISCONTENT: A THEORY OF JUDICIAL REVIEW* 103 (1980) (justifying counter-majoritarian intervention in cases of representative breakdown). We do no more here than suggest a deferential, or perhaps a representation-reinforcing, approach. See Parts II–IV.

ter of statute or custom.<sup>24</sup> Indeed, there is very little relevant constitutional text to guide us.<sup>25</sup> All that Article III requires is that there be a Supreme Court empowered to hear certain cases or controversies.<sup>26</sup> Of these, only those involving a few specified parties fall within the Court's original jurisdiction; all others must arrive on appeal.<sup>27</sup> The Constitution neither specifies a particular number of Justices for the Court, nor establishes a particular method of reaching decisions.<sup>28</sup> Pursuant to the original Judiciary Act of 1789, the Court consisted of six Justices, each of whom rode circuit to sit on lower federal courts.<sup>29</sup> That number shrank to five with the infamous Midnight Judges Act, which President John Adams signed on his way out of office.<sup>30</sup> In 1807, the number climbed to seven,<sup>31</sup> then to nine in 1837,<sup>32</sup> and to ten in 1863.<sup>33</sup> In 1866, Congress reduced the number to seven to prevent President Andrew Johnson from appointing any new members.<sup>34</sup> Three years later it was back to nine, where—President Franklin Roosevelt's New Deal efforts notwithstanding—it has stayed to this day.<sup>35</sup>

The important point is that there is no constitutional magic in the number nine—nor, again, is there any specific requirement on how the Justices reach, or publish, their decisions.<sup>36</sup> At present, a quorum of six Justices is

<sup>24</sup>. See *Supreme Court Procedures*, U.S. COURTS, <http://www.uscourts.gov/about-federal-courts/educational-resources/about-educational-outreach/activity-resources/supreme-1> (last visited Jan. 27, 2018); see also Margaret Meriwether Cordray & Richard Cordray, *Strategy in Supreme Court Case Selection: The Relationship Between Certiorari and the Merits*, 69 OHIO ST. L.J. 1, 3–6 (2008) (describing the Supreme Court's case selection process).

<sup>25</sup>. See U.S. CONST. art. III, §§ 1–3 (1789).

<sup>26</sup>. See *id.* §§ 1–2.

<sup>27</sup>. See *id.* § 2.

<sup>28</sup>. See *id.* §§ 1–3.

<sup>29</sup>. Judiciary Act of 1789, ch. 20, § 1, 1 Stat. 73 (1789).

<sup>30</sup>. Federal Judiciary Act of 1801, ch. 4, § 3, 2 Stat. 89 (1801).

<sup>31</sup>. Seventh Circuit Act of 1807, ch. 16, § 5, 2 Stat. 420 (1807).

<sup>32</sup>. Eighth & Ninth Circuits Act of 1837, ch. 34, § 1, 5 Stat. 176 (1837).

<sup>33</sup>. Tenth Circuit Act of 1863, ch. 100, § 1, 12 Stat. 794 (1863).

<sup>34</sup>. See Judicial Circuits Act of 1866, ch. 210, § 1, 14 Stat. 209 (1866).

<sup>35</sup>. See Circuit Judges Act of 1869, ch. 22, § 1, 16 Stat. 44 (1869).

<sup>36</sup>. See 28 U.S.C. § 2072 (1934). The Rules Enabling Act of 1934 vests the in the Supreme Court the power to make procedural rules. *Id.* Any rule change which would “abridge, enlarge or modify any substantive right,” however, would require a new statutory delegation. *Id.* § 2072(b) (emphasis added). The changes we suggest may require both Congressional and Court action, but there do not appear to be any constitutional hurdles. See James C. Duff, *The Federal Rules of Practice and Procedure*, U.S. COURTS, <http://www.uscourts.gov/rules-policies/about-rulemaking-process/how-rulemaking-process-works/overview-bench-bar-and-public> (last visited Jan. 27, 2018) (provid-

necessary to hear a case, but that is a statutory requirement, which Congress could modify without any constitutional changes.<sup>37</sup> With this in mind, we propose a change in procedure such that a three-Justice panel—not the entire Court—hears and decides each case. Appeal to an en banc sitting of the entire Court would require a unanimous vote of all non-recused Justices. We further propose that the litigating parties select the decisive panel for their case through a fair division scheme.

### III. FAIR DIVISION

We explored several possible approaches—some of which appear in the mathematical Appendix—before settling on our recommended method. First, we considered simply assigning a three-Justice panel at random for each case, as is the current practice in the Federal Courts of Appeal.<sup>38</sup> The strength of this approach is that it places the litigants (and Justices) behind a veil of ignorance as they petition for (or grant) certiorari.<sup>39</sup> This could make the stakeholders risk averse, particularly in controversial cases, and thus less likely to pursue a political agenda in the Court.<sup>40</sup> It might, however, provide a perverse incentive in some instances: A litigant who knows she cannot get a majority of the Court might still roll the dice on a three-Justice panel.<sup>41</sup>

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ing a more detailed account of the rule-making/modifying process).

37. 28 U.S.C. § 1 (Supp. 2015).

38. See Michael Abramowicz & Maxwell Stearns, *Defining Dicta*, 57 STAN. L. REV. 953, 1009 (2005) (“In the Courts of Appeals, panels are the product of random draws of three among a larger set of members of the court.”); J. Robert Brown Jr. & Allison Herren Lee, *Neutral Assignment of Judges at the Court of Appeals*, 78 TEX. L. REV. 1037, 1069 (2000) (“All circuits purport to use a system of random assignment of judges and cases. Only a few, however, require random assignment by rule.”). But see Adam S. Chilton & Marin K. Levy, *Challenging the Randomness of Panel Assignment in the Federal Courts of Appeals*, 101 CORNELL L. REV. 1 (2015) (finding evidence of non-randomness in panel formation).

39. See Emerson H. Tiller & Frank B. Cross, *A Modest Proposal for Improving American Justice*, 99 COLUM. L. REV. 215, 216 (1999) (stating that the random selection of the Court of Appeals judges “prevented the use of intracircuit judge-shopping by litigants and protected public confidence in the fairness of the system”).

40. See *id.*

41. See *id.* at 215 (“The random assignment of judges to circuit court panels often produces ideologically unbalanced panels with either three Democratic or three Republican appointees controlling the outcome. Such imbalances often lead to case outcomes that reflect partisan interests.”); see also ADVANCING CRIMINOLOGY & CRIMINAL JUSTICE POLICY 224 (THOMAS G. BLOMBERG ET AL. 2016) (stating that, depending on the subject matter of the case, significant variations in the likelihood of success of a litigant’s case can be based on the “luck of the draw” in the selection of a random three-judge panel).

Further, randomly assigned panels may produce unstable or fractured doctrine, which may actually lead to *increased* politicization over time.<sup>42</sup> For these latter reasons, we rejected the random model.

We next considered a “One Partitions—Other Chooses” (OPOC) approach. Pursuant to this time-honored fair division scheme, one party partitions three possible three-Justice panels, using each Justice once.<sup>43</sup> The other party then chooses which panel will decide the case.<sup>44</sup> This approach yields a final panel that is near the parties’ perception of the Court’s ideological center *relative to their specific case*.<sup>45</sup> In the current context, however, where decisions often break along straight party lines, it may give too much power to the “choosing” party.<sup>46</sup> If the Court remains ideologically divided 5-4, as it now is, the second party could always ensure a 2-1 majority on the final panel—even when that party would face majority opposition in an en banc sitting.

To try to address this weakness, we considered adopting a “Partition—Eliminate—Choose” (PEC) model. There, the first party partitions three panels as before; the second party eliminates one; and the first party then chooses the final panel. This takes power from the second party and gives it to the first—but it ends up creating the same problem in reverse. That is, given a 5-4 Court, the first party can always produce a 2-1 majority on the final panel. Even worse, this scheme does not incentivize the partitioner to create fairly divided panels in the first place. Indeed, her best strategy would be to condense her three least favorite Justices onto one panel, and then

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42. See Robert Weisberg, *Death Penalty Appeals in California*, 28 SANTA CLARA L. REV. 243, 262 (1988) (stating that random panel selections would “yield wildly disparate results among districts . . . since results would be heavily dependent on the random draw of panels within divisions. The problem of randomness goes far beyond inter-district nonuniformity due to differences in legal ideology. It is a problem of wildly disparate case processing as well. Even within districts, division rules and customs vary widely in terms of formality and thoroughness of consultation among judges.”).

43. See David A. Anderson, *The Fair Division of Natural Resources*, 15 J. NAT. RESOURCES & ENVTL. L. 227, 234 (2000) (“[A] divide-and-choose method can sometimes render a division between two adversaries. This solution allows one party to divide the resource into two parts and the other to choose between the two allotments. The divider has an incentive to make as equal a division as possible in order to maximize the value of the inferior (if not equal) part which will be left for her.”).

44. See *id.*

45. See *id.* at 234 (stating that this model has an “equitable appeal”).

46. See *infra* Section V.2. (“If an ‘equilibrium’ partition does not exist, then the selected 3-judge panel will always be greater than [the ideological center] and thus the ideology value of the selected panel will lean toward the preference of [the choosing party].”).



choose against that panel in the final step. This sort of manipulability does not serve fair division purposes.<sup>47</sup> Thus, while the random, OPOC and PEC schemes each have strengths, we settled on a fourth possibility.

In our recommended model, the petitioner partitions three possible panels; the respondent eliminates one panel, and then repartitions the remaining Justices into two new panels; and the petitioner then chooses a final panel. Let us call this “Partition—Eliminate—Repartition—Choose” (PERC).<sup>48</sup>

1. Petitioner creates three potential three-judge panels, using each of the nine Justices one time;
2. Respondent removes one panel;
3. Respondent repartitions the remaining six Justices into two new panels;
4. Petitioner chooses one of the reorganized panels to decide the case.

We can offer a proof that the PERC approach will produce a final panel that reflects the parties’ perception of the Court’s ideological center in regard to their particular case.<sup>49</sup> Of course, this may or may not correspond with the Justices’ larger ideological reputations as “liberal” or “conservative.” Using this model, only the party with a sympathetic majority on the entire Court can ensure a 2-1 majority on the decisive panel, and it cannot count on ideological outliers muddying the juridical waters.

We concede up front that this approach has several apparent weaknesses. First, it seems likely to place a greater workload on a few Justices, and to give a few Justices more time off.<sup>50</sup> This presents a resource problem that needs an administrative solution—but, in principle, it is actually a good result. We want less radical Justices making a higher percentage of decisions.<sup>51</sup> Second, and more problematic, this approach will likely exacerbate

47. See Anderson, *supra* note 43, at 234 (the purpose of fair division is “equal division between two parties”).

48. See *infra* Section V.3.

49. See *infra* Section V.3. (concluding that “the result will tend to be the middle panel for both players, which is more equitable”).

50. See Chilton & Levy, *supra* note 38, at 6 (“[S]trict randomness will often not be desirable or even feasible in many circuit courts. As one example, in circuits that do not have designated court weeks but instead hear cases on a rolling basis, strict randomness could lead to one judge being assigned to panels two or even three weeks in a row whereas others could have a gap of several months between assignments. Such a schedule would clearly prove unworkable over time, rendering strict randomness inconsistent with sound court administration.”).

51. See CHRISTOPHER L. EISGRUBER, REPAIRING THE SUPREME COURT APPOINTMENTS PROCESS: THE NEXT JUSTICE 179 (Princeton Univ. Press 2009) (stating that moderate judges are

the “What Will Justice Kennedy Do?” problem.<sup>52</sup> In the short term, at least, it will almost certainly increase the chances that a few centrist Justices make some of our most important constitutional law. In the longer term, however, this will likely become less problematic as the Court becomes more centrist as a body.

Moreover, we maintain that this method’s several strengths substantially outweigh its weaknesses. The most important strength is that it moderates and stabilizes the Court’s decision-making, which, in turn, moderates and stabilizes our constitutional doctrine.<sup>53</sup> A stable body of doctrine works to discourage both litigants and Justices who hope to see radical political changes emerge from the Court.<sup>54</sup> An added benefit is that we can expect Justices with outlier views on a broad range of issues to sit on relatively few panels. As a general matter, this might encourage them to produce temperate and well-reasoned opinions—rather than politicized dissenting rhetoric—at least if they hope to get selected for future panels.<sup>55</sup>

Finally, this approach makes it less likely that a President will appoint true outliers to the Court—and, of course, such appointees will be less problematic if they are selected. A President who wants to make a substantial impact will choose more moderate appointees, who will be more likely to sit on the panels that decide actual cases.<sup>56</sup> By the same token, a successful out-

more likely to adhere to the “institutional responsibility to be impartial and respect procedural values”).

52. See Elizabeth Slattery, *Is Kennedy Still the Swing Vote on the Supreme Court?*, HERITAGE FOUND. (Jun. 26, 2015) <http://www.heritage.org/courts/commentary/kennedy-still-the-swing-vote-the-supreme-court> (“For many of the highest-profile U.S. Supreme Court cases, it all comes down to one man. Though only 20 percent of cases each term are decided by one vote and 65 percent in the last term were unanimous decisions, litigants often craft arguments aimed at capturing his vote and pander to him at oral argument. Anthony Kennedy runs the court, according to conventional wisdom.”).

53. See Lewis F. Powell Jr., *Stare Decisis and Judicial Restraint*, 47 WASH. & LEE L. REV. 281 (1990).

54. For three Justices’ interesting take on this argument, see the opinion of the Court in *Planned Parenthood v. Casey*, 505 U.S. 833, 864–69 (1992). See also Powell Jr., *supra* note 53.

55. See *infra* Section V.3.

56. See *infra* Section V.3. It remains possible, of course, that a President *could* select outliers, perhaps with the hope of moving the Court’s ideological center over time. See Timonny M. Hagle, *STRATEGIC RETIREMENTS: A Political Model of Turnover on the United States Supreme Court*, 15 POL. BEHAV. 25, 25–26 (1993). But because most Justices now time their retirements to coincide with a like-minded Presidency, it is unlikely that a President could accomplish this kind of macro change under normal circumstances. See *id.* “Playing the long game” in this way would, at the very least, involve the substantial risk of an ineffectual appointment. See *id.*

lier stands less chance of influencing actual decisions. In this way, our proposal helps to mitigate the political spectacle of the appointments process, without modifying the structure of that process at all.<sup>57</sup> By treating politicized litigation and decision-making as the Court's underlying disease, we are able to recommend a therapy that provides a strong incentive for the President to avoid selecting ideological outliers. This, in turn, helps alleviate the symptoms of a politicized appointments process.

#### IV. CONCLUSION

While it may be inevitable that the Supreme Court remains a political body, it need not be a hyperpolarized partisan institution.<sup>58</sup> We suggest that the current climate on the Court is the product of a politicizing feedback loop.<sup>59</sup> The Court enters into—and may shortcut—controversial political debates, which make lifetime seats on the bench incredibly important.<sup>60</sup> This then politicizes the appointments process, which in turn leads to a more politically active Court, and so on.<sup>61</sup> We suggest that applying a fair division scheme to the Court's decision-making process might act to reverse this loop and work to depoliticize the Court over time.<sup>62</sup>

We suggest a change to procedure whereby a three-Justice panel—not the entire Court—decides each case.<sup>63</sup> The litigating parties select that panel through a fair-division scheme.<sup>64</sup> The Petitioner partitions three three-Justice panels, using each Justice once.<sup>65</sup> The Respondent then eliminates one panel, and then reorganizes the remaining Justices into two new panels.<sup>66</sup> The Petitioner then chooses the final panel.<sup>67</sup>

This would produce a panel near the ideological center of each case, which may produce more stable and moderate doctrine.<sup>68</sup> Further, it would

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57. *See supra* notes 54–56 and accompanying text.

58. *See supra* Part I.

59. *See supra* notes 6–8 and accompanying text.

60. *See supra* notes 6–8 and accompanying text.

61. *See supra* notes 6–8 and accompanying text.

62. *See supra* Part III.

63. *See supra* Part II.

64. *See supra* Part III.

65. *See supra* Part III.

66. *See supra* Part III.

67. *See supra* Part III.

68. *See infra* Section V.3.

discourage outlier appointments, because such Justices would serve on relatively few decisive panels.<sup>69</sup> Over time, we suggest that these incentives would reverse the hyperpoliticization feedback loop, and tend to ensure that fairness—not arbitrary political power—is the primary force shaping constitutional doctrine.<sup>70</sup>

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69. *See supra* notes 56–57 and accompanying text.

70. *See supra* notes 56–57 and accompanying text.

## V. APPENDIX

## A. Introduction

Mathematics has long been interested in the fair distribution of goods, often referred to as cake. In traditional fair division problems, a group of people seek to divide a cake in such a way that everyone agrees that they received their fair share. In the simplest case of two people dividing a cake, this can be accomplished using the “I cut, you choose” method in which the first player cuts the cake into two pieces and the second player chooses a piece. The first player is motivated to cut the cake into two pieces he considers equally valuable, and the second player gets their favorite piece of the division. Hence both parties are satisfied with their piece.<sup>71</sup>

The current question differs from the classical cake cutting problems in that we seek to find one subset of judges for both players, almost as if we were choosing one piece of cake for the players to share. But as opposed to being cooperative, the two players’ interests are diametrically opposed. Nonetheless, mathematics can give some insight into methods of assigning judges that meet some fairness criterion. What follows are two methods that achieve certain fairness goals for choosing a subset of three Supreme Court justices to hear cases. The framework under which the methods are derived are as follows:

Let  $S$  be the set of all partitions of the nine justices into three groups of three justices such that each justice belongs to exactly one group. There are  $\frac{9!}{3!3!3!} = 280$  such partitions in  $S$ . Denote by  $P = \{P^1, P^2, P^3\}$  a partition in  $S$  where  $P^i$  is the  $i$ th 3-judge panel in the partition  $P$ .

Assume each of the 9 justices has an “ideology value” that take values in the unit interval  $[0, 1]$  where the interval represents a (normalized) ideological scale. The justices’ values could vary from case to case.

We denote by  $I^*$  the “center” value of all 9 justices’ ideological values. The center  $I^*$  could be a straight average of the 9 justices’ ideology values or some weighted average depending on the particular case.

Following the standard language of fair division theory, we will call the two sides of the case player one and player two and denote by  $I_1$  and  $I_2$  the ideology values assigned to a 3-judge panel by player 1 and player 2, respectively. While we will discuss the implication of our methods for the case

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71. For a survey of fair division theory, see Brams & Taylor, *supra* note 14.

where  $I_1 = I_2$ ; i.e. both sides agree on the ideology values of each possible 3-judge panel, in general, we do not assume that they are equal.

Lastly, we will assume that player one prefers a 3-judge panel whose ideology value  $I_1$  is closer to 0 on the  $[0, 1]$  ideological scale and player two prefers those for which  $I_2$  is closer to 1.

### B. One Partitions, Other Chooses Method

The One Partitions, Other Chooses (OPOC) method of selecting a 3-judge panel is defined as follows:

(a) Player one chooses a partition  $P = \{P^1, P^2, P^3\}$  from one of the 280 possible partitions in  $S$ .

(b) Player two selects one of the three 3-judge panels from the chosen partition  $P$ .

For the chosen partition  $P = \{P^1, P^2, P^3\}$ , without loss of generality, we assume that

$$I_1(P^1) \leq I_1(P^2) \leq I_1(P^3)$$

i.e. the 3-judge panels in  $P$  will be listed in order of player one's preferences. With respect to this ordering, we have the following optimal strategy for player one.

**Optimal Strategy for Player One:** Under the One Partitions, Other Chooses method, the optimal strategy for player one is to choose a partition  $P = \{P^1, P^2, P^3\}$  such that  $I_1(P^3)$  is minimized.

Since  $I^*$  represents the "center" value of all 9 justices' ideology values, player one's ideology values of the three 3-judge panels in  $P$  cannot all lie on one side of  $I^*$ ; i.e.  $I_1(P^i) < I^*$  for all  $i = 1, 2, 3$  or  $I_1(P^i) > I^*$  for all  $i = 1, 2, 3$  cannot hold. This leads to our first main result of the OPOC method.

**Proposition 2.1** Under the One Partitions, Other Chooses method, if player one follows the optimal strategy, then player one will choose a partition  $P = \{P^1, P^2, P^3\}$  where his least preferred 3-judge panel  $P^3$  will be as close to the entire court's center  $I^*$  as possible but always greater than it.

For the case where the ideology values of player one and player two agree; i.e.  $I_1 = I_2$ , the above proposition implies that the selected 3-judge panel by player two from the chosen partition  $P = \{P^1, P^2, P^3\}$  of player one will always be  $P^3$  since the common ideology value of  $P^3$  will be the greatest and thus most preferred by player two. This yields the following corollary.

**Corollary 2.2** Suppose both players agree on the ideology values of all 3-judge panels with common ideology values  $I$ , then under the One Parti-

tions, Other Chooses method, if player one follows the optimal strategy, the following statements hold:

(i) If an “equilibrium” partition  $P^*$  exists, where for all  $P^i \in P^*$ ,  $I(P^i) = I^*$ , then player one will always choose the equilibrium partition and ideology value of the selected 3-judge panel will equal  $I^*$ .

(ii) If an “equilibrium” partition does not exist, then the selected 3-judge panel will always be greater than  $I^*$  and thus the ideology value of the selected panel will lean toward the preference of player two.

In summary, while the One Partitions, Other Chooses method encourages the ideology value of the selected 3-judge panel to be close to the entire court’s ideology center, part (ii) of Corollary 2.2 is a significant drawback of the OPOC method. We address this issue with our second method discussed next.

### C. Partition, Eliminate, Repartition, Choose Method

The Partition, Eliminate, Repartition, Choose (PERC) method of selecting a 3-judge panel is defined as follows:

- (a) Player one chooses a partition  $P = \{P^1, P^2, P^3\}$ .
- (b) Player two eliminates one of the three 3-judge panels,  $P^i$ , from  $P$ .
- (c) Player two then repartitions the remaining 6 judges into two 3-judge panels (possibly into the same panels as player one originally divided them).
- (d) Player one chooses their preferred panel from these two panels.

While not perfect, the PERC method has some advantages over OPOC, especially for player one. Notice that essentially each side gets to eliminate one panel, and the remaining panel is the one chosen. Player one is motivated to choose a balanced first partition. For if player one divided the judges into panels he found quite unfair, player two could eliminate the first player’s favorite “stacked” panel. And since player two has the option to redistribute the remaining six judges after the first panel elimination, player one does not have the option of stacking one panel with player two’s favorite judges and eliminating it.

Given a modest assumption of players’ preferences, player one can guarantee that the chosen panel is better than their least favorite panel, and in many cases will be as good as their second favorite panel.

Assumption: If a judge on a panel is replaced with a judge that a player assesses to be more favorable to their cause, the value that player assigns the new panel is greater than the value they placed on the old panel. If a judge is replaced by a judge the player assesses to be equally favorable to their

cause, the value that player assigns to the panel is unchanged.

**Proposition 3.1** Let player one's partition be represented by  $P = \{P^1, P^2, P^3\}$  where player one's most preferred panel is  $P^1$  and least preferred panel is  $P^3$ . Under the PERC method,

(i) player one can guarantee that the three-judge panel chosen will be strictly better than panel  $P^3$ , according to their own preferences  $I_1$ .

(ii) player two can guarantee that the chosen panel will have a value at least as great as their second favorite panel in  $P$ .

*Proof.* Suppose after eliminating one panel, player two returns the two remaining panels from  $P$ . Then one of them must be  $P^2$  or  $P^1$ , and so player one can choose a panel they value more than  $P^3$ .

If, on the other hand, player two repartitions the remaining six justices, the panels returned to player one will be the result of exchanging one judge from each of the remaining original panels. Let  $A$  and  $B$  be the two judges exchanged and suppose that player one prefers judge  $A$  to judge  $B$ . Then, by our assumption, the panel that replaced judge  $B$  with judge  $A$  is more favorable to player one. And thus, player one has the choice of at least one panel, which is more desired than  $P^3$ . If player one is indifferent to judges  $A$  and  $B$ , then player one values the returned panels as much as the original panels, and so one panel must be as desired by player one as either  $P^2$  or  $P^1$ .

The claim regarding player two follows from the fact that player two may eliminate their least favorite panel in  $P$ . The opportunity to repartition the remaining judges gives player two the chance to present player one with two partitions both of which are better in player two's eyes to their second favorite panel in  $P$ .

In summary, player two had their first choice of panels in the partition  $P$  presented to them under the OPOC model, but may wind up with their second favorite panel under PERC. While this is a step down for the second player, in the case the two players largely agree on the ideology of the panels ( $I_1 = I_2$ ), the result will tend to be the middle panel for both players, which is more equitable. And in the case that the second player found all of the judge panels disagreeable in the original panel, they have an opportunity to contribute to the partitioning under the PERC method.



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