

# On the Causes and Consequences of and Remedies for Interstate Malapportionment of the U.S. House of Representatives

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Forty years ago, the Supreme Court drew attention to and made considerable efforts toward eliminating *intrastate* malapportionment among U.S. House districts with the one-person, one-vote rule. Today, this rule is significantly, and more severely, violated by a rarely discussed or analyzed form of malapportionment, *interstate* malapportionment. We identify and discuss its causes and consequences, as well as possible remedies. We argue that changing the fixed size of the U.S. House membership is the only solution that meets normative, constitutional, and practical standards. We demonstrate that the current fixed size of the chamber unreasonably corrupts the popular basis of the U.S. House, which is necessary for the proper functioning of American representative democracy.

More than forty years ago the Supreme Court took a profound step toward improving the equality of political representation in the United States. In a series of cases beginning in 1962, the Court established the “one-person, one-vote” rule.<sup>1</sup> Based on Article I and the equal protection clause of the Fourteenth Amendment of the U.S. Constitution, the Court ruled that the malapportionment of legislative districts—that is, the apportionment of voting districts with unequal populations—within states was unconstitutional. In *Wesberry v. Sanders*, the Court considered the malapportionment of U.S. congressional seats in Georgia. Justice Black, writing for the majority, cited Georgia’s Fifth Congressional District (with 823,680 individuals) and Ninth Congressional District (with 272,154 individuals) as egregious examples.<sup>2</sup> The discrepancy was especially troublesome for the Court because the U.S. House is the federal institution meant to represent directly individuals and to be the most egalitarian.

The Supreme Court spoke forcefully against malapportionment by stressing that it was “counter to our fundamental ideas of democratic government,” and if permitted, “it would cast aside the principle of a House of Representatives elected ‘by the People,’ a principle tenaciously fought for and established at the constitutional Convention.”<sup>3</sup> The Court interpreted “chosen . . . by the People” to mean that “as nearly as is practicable one man’s vote in a congressional election is to be worth as much as another’s.”<sup>4</sup> In a series of subsequent decisions, the Court repeatedly enforced its ruling and reiterated its arguments against malapportionment. In *White v. Weiser* (1973), for instance, the Court concluded that Texas had not demonstrated a “good-faith effort to achieve absolute equality” among its congressional districts.<sup>5</sup> The Court, citing the intrastate population discrepancy of 19,275 individuals between two House districts, ordered Texas to reapportion its districts to be “as mathematically equal as reasonably possible.”<sup>6</sup> In the 1980s, the Court further defined the “equal representation for equal numbers of people” requirement of *Wesberry*. In *Karcher v. Daggett*,<sup>7</sup> the Court held that only absolute population equality among districts reflects the principle of population equality found in Article I, Section 2, of the Constitution.

Over the past forty years, the Supreme Court vigorously has corrected the intrastate malapportionment of U.S. House districts.<sup>8</sup> One-person, one-vote has been established as constitutional doctrine and is now nearly universally held by Americans as the democratic standard of political equality and fairness. *Intrastate* malapportionment, however, is only one of the two types of malapportionment. *Interstate* malapportionment of representation

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in the U.S. House is rarely discussed and is acutely problematic.

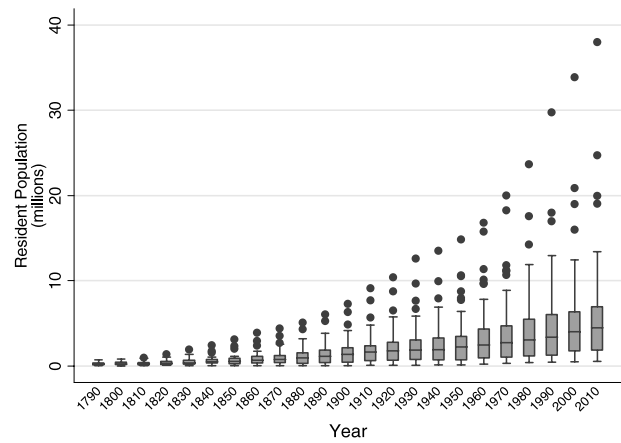
Interstate malapportionment is an unintended and understudied byproduct of four interrelated factors: (1) uneven population distribution among the states; (2) territorially defined congressional districts; (3) current apportionment method; and (4) the fixed and limited size of 435 members in the House of Representatives. Intentionally or not, the House has become systematically malapportioned and is likely to become only more so over time. The constitutional, normative, and practical implications of either form of malapportionment are similar. Intrastate malapportionment and interstate malapportionment, though, are quantitatively different; the latter is currently significantly more severe. Based on the 2000 reapportionment, the interstate population discrepancy between two House districts is as much as 410,012 individuals, which is over twenty-one times greater than the intrastate malapportionment ruled unconstitutional in *White*. Despite the Court's aggressive stance toward intrastate malapportionment, it declined its only opportunity to date to address interstate malapportionment.<sup>9</sup> The question, then, is whether the present practice of apportioning the U.S. House represents every individual within the population "as mathematically equal as *reasonably* possible."<sup>10</sup>

We argue that interstate malapportionment is all too often overlooked by democratic theorists, political analysts, and the public even though it unnecessarily undermines the procedural recognition of the electoral political equality and fairness embodied by the U.S. House. It also inhibits a fuller establishment of the one-person, one-vote principle. We intentionally say "fuller" instead of "full" because an analysis of the causes of interstate malapportionment also points toward a fundamental paradox between the Constitution's mandate, accepted standards of representative legitimacy, and the Court's current requirements for congressional constituencies. Nonetheless, we suggest that changing the fourth factor, namely, the fixed size of House membership, is the most reasonable and measured solution, albeit limited, to the problem of interstate malapportionment.

### The Causes of Interstate Malapportionment

The first cause of interstate malapportionment is uneven population distribution among the states. We assume this requires little verification. Since the founding of the country, its population has grown and so have the average and median state populations. The populations of small and large states, however, have not grown at the same rate, and accordingly, the standard deviation of the mean has increased each year. Figure 1 plots some of the summary statistics for state populations from 1790 to 2010.<sup>11</sup> The

**Figure 1**  
State population: Increasingly dispersed and skewed



shaded boxes define the 25th to the 75th percentile range of state populations; the dash in the middle of the box marks the state with the median population. The "whiskers" extending from the box mark the population of the states that rank one state below the 25th percentile and one state above the 75th percentile. The dots mark extreme values. The distribution in figure 1 demonstrates that the states' populations have become increasingly dispersed and positively skewed. To compare across each decade accurately, we can use the coefficient of variation: the quotient of the mean and its standard deviation. It, in essence, standardizes the mean; the higher the number the wider the distribution. The values increase from 76.9 percent in 1790, to 102.6 percent in 1950, and to 110.1 percent in 2000. When the coefficient is equal to or is greater than 100 percent, it indicates that a state with a population of zero is within one standard deviation of the mean. Although this is a statistical anomaly, the historical data demonstrate an increasingly wide and skewed distribution of state populations. That is, the populations of large states generally have grown at faster rates than those of small states.

By itself, however, the uneven distribution of state populations does not cause interstate malapportionment. The second factor, territorially bounded congressional districts, is a necessary condition. The territorially bounded districts in the U.S. Senate, for instance, are obvious. Each state, regardless of population, is represented by two senators. Senate apportionment is specifically designed to represent states equally, not individuals. To balance the Senate's definition of constituency, the Framers, in the Great Compromise, created the House with the intent that it represents individuals.<sup>12</sup> Nonetheless, the Constitution employs territorial distinctions to define House constituencies. The apportionment of House seats is distributed according to

state populations, each state is required to have at least one representative, and all districts must be contained within state boundaries.

Without these territorial constraints on the distribution and construction of House seats, every House district, less one, easily could have exactly as many constituents as the national average. The one remaining district would be *at most* within  $\pm 218$  individuals of the national district average. Given these territorial constraints, however, the only circumstance in which one-person, one-vote could be achieved and interstate malapportionment avoided would be if each and every state always had a population equal to a whole-number multiple of the national district average. This has never—not even remotely—occurred, and there is no reason to assume that it ever would. Hence, as long as House constituencies are geographically defined, House seats will never achieve political equality and will always be malapportioned among states. The Supreme Court has acknowledged as much:

The constitutional guarantee of a minimum of one Representative for each State inexorably compels a significant departure from the ideal. In Alaska, Vermont, and Wyoming, where the statewide districts are less populous than the ideal district, every vote is more valuable than the national average. Moreover, the need to allocate a fixed number of indivisible Representatives among 50 States of varying populations makes it virtually impossible to have the same size district in any pair of States, let alone in all 50. Accordingly, although “common sense” supports a test requiring “a good faith effort to achieve precise mathematical equality” within each State, *Kirkpatrick v. Preisler*, 394 U.S., at 530-531, the constraints imposed by Article I, 2, itself make that goal illusory for the Nation as a whole.<sup>13</sup>

The third cause of interstate malapportionment is the current apportionment method. Given the presence of territorial House boundaries and the absence of state populations equal to a whole-number multiple of the national district average, true political equality calls for some fraction of a representative. As the Supreme Court aptly notes, representatives are indivisible: a state that deserves 1.5 representatives only can receive one or two representatives, not 1.5 representatives.<sup>14</sup> This seemingly simple fact is perplexingly complicated. “The difficulty is what to do about the fractions. This has vexed both mathematicians and politicians for hundreds of years.”<sup>15</sup>

This may explain, in part, why since the country’s founding, Congress has employed or proposed at least six main apportionment methods, plus variants. Each is known by its author’s or proponent’s name. They include the Adams, Hamilton, Jefferson, Webster, Dean, and Hill methods.<sup>16</sup> Congress formally adopted the Hill method in a 1941 statute, and it has been used since.<sup>17</sup> Each method posits a different manner by which to allocate the population fractions into an indivisible number of representatives among the states. Regardless of the method used, the presence of fractions makes some degree of interstate malapportionment inevitable.

The fourth cause of interstate malapportionment is that the size of the U.S. House has been fixed at 435 members since 1910.<sup>18</sup> Given the constitutional requirement that each state receive at least one representative, some states always have been apportioned only one representative, irrespective of that state’s fraction of the U.S. population. The U.S. population has grown exponentially while, at the same time, state populations have become increasingly skewed. Small states are becoming smaller relative to large ones (see figure 1). Put another way, while the populations of small states have grown, their relative populations have decreased, which has increased the number of relatively small states. Similarly, as the national average district size has increased, the number of states afforded only their requisite single seat also has increased. Wyoming—the most overrepresented state—has one representative for 495,304 individuals, and Montana—the most underrepresented state—has one representative for 905,316 individuals. As noted above, this produces a population discrepancy (i.e., an interstate malapportionment) between the two of 410,012. Each person in Wyoming is politically equal to 1.82 persons in Montana. The increasing number of small states and the fixed size of House membership also limit the remainder of seats available for apportioning and, thereby, limit the relative political equality of large states. For example, based on figures from the 2000 Census, the apportionment population ratio of California to Wyoming is 69 to 1, but their House-seat ratio is 53 to 1. The underrepresented small states are not the only “victims” of a malapportioned House; the large states—those with districts approximating the national average—also are relatively underrepresented vis-à-vis the overrepresented small states.

Just as important, because House seats are constitutionally apportioned among territorial units (states), and not across the national constituency (individuals), small states are not able to distribute their district population remainders among multiple districts. A state’s population remainder is produced by dividing the state’s population by the number of its House seats. It is the number of *statewide* individuals who will be either over- or underrepresented based on the *national* average of individuals per district. Large states are able to distribute their population remainders among many districts and, thus, each district is more likely to approximate the national average district size. Even if every state constructed its House districts with a perfectly equal numbers of individuals, as required by the Supreme Court’s intrastate malapportionment decisions and its one-person, one-vote rule, interstate malapportionment is unavoidable, and it is exacerbated by the fixed and limited size of the House.

The effects of the four causes of interstate malapportionment just discussed, although easily overlooked, have been predictable.<sup>19</sup> Most basically, the average number of constituents per representatives has increased threefold since

**Table 1**  
**Historic malapportionment of the U.S. House with 435 members**

Year	Average District Size	U.S. Resident Population	Difference: Most Over- and Under-Represented States	Difference: Ten Most Over- and Under-Represented States	Difference: Ten Most and Least Populous States	Difference: Ten Greatest and Least States Discrepancy
1910	212,020	92,228,496	245,426	63,540	42,981	50,945
1920	243,728	106,021,537	282,943	98,199	41,056	69,576
1930	283,224	123,202,624	344,515	114,537	79,840	89,207
1940	303,827	132,164,569	248,984	79,335	53,765	58,456
1950	347,875	151,325,798	235,865	83,986	51,233	59,862
1960	412,237	179,323,175	258,466	135,987	84,910	96,168
1970	467,361	203,302,031	314,939	148,688	98,911	111,568
1980	520,787	226,542,199	297,423	135,330	85,055	96,538
1990	572,466	249,022,783	345,477	130,804	73,522	90,441
2000	646,952	281,424,177	410,012	147,659	82,088	108,765
2010	735,433	319,913,484	481,812	194,257	117,322	141,384

Year	Ten States with Smallest Population			Ten States with Largest Population		
	Average Population	Average Seats	Average Discrepancy	Average Population	Average Seats	Average Discrepancy
1910	282,334	1.5	46,471	4,586,090	21.6	3,490
1920	341,499	1.5	61,067	5,352,073	21.4	20,011
1930	372,128	1.4	82,651	6,476,138	23	2,811
1940	414,397	1.6	58,373	6,902,404	22.9	4,608
1950	481,291	1.6	55,882	8,024,396	23.1	4,649
1960	489,178	1.5	90,575	9,717,622	23.5	5,665
1970	554,600	1.4	103,839	11,151,312	23.9	4,929
1980	677,262	1.4	91,214	12,179,528	23.4	6,159
1990	748,487	1.3	81,936	13,548,839	23.7	8,413
2000	832,986	1.3	90,482	15,257,007	23.6	8,394
2010	906,543	1.3	126,925	17,278,882	23.3	9,603

Year	Ten States with Largest Representational Discrepancy			Ten States with Smallest Representational Discrepancy		
	Average Population	Average Number of Seats	Average Discrepancy	Average Population	Average Number of Seats	Average Discrepancy
1910	402,370	2.2	52,552	3,720,428	17.6	1,607
1920	1,116,706	4.2	72,286	4,147,380	17.2	2,710
1930	427,173	1.4	91,313	5,455,161	19.3	2,106
1940	483,723	1.8	61,521	6,470,149	21.4	3,065
1950	791,546	2.5	62,451	6,487,285	18.7	2,590
1960	570,539	1.7	99,371	8,010,644	19.4	3,204
1970	644,171	1.6	113,907	10,401,585	22.3	2,339
1980	890,670	1.8	99,124	6,688,383	12.9	2,586
1990	1,249,771	2.3	94,234	11,261,918	19.7	3,793
2000	1,718,798	2.6	112,561	11,025,139	17.1	3,796
2010	1,104,221	1.6	144,490	9,623,803	13.1	3,106

1910 (from 212,020 to 646,952 individuals); refer to table 1. Several further examples can illustrate the problem of the population remainder and the severity of interstate malapportionment.

According to figures from the 2000 Census, California's apportionment population was 33,930,798 individuals.

The reapportionment based on these data assigned California 53 congressional seats. If one multiplies the national average district size by California's 53 districts and subtracts its actual apportionment population, the equation produces a population remainder of 357,658 (overrepresented) individuals. California, though, was able, and in

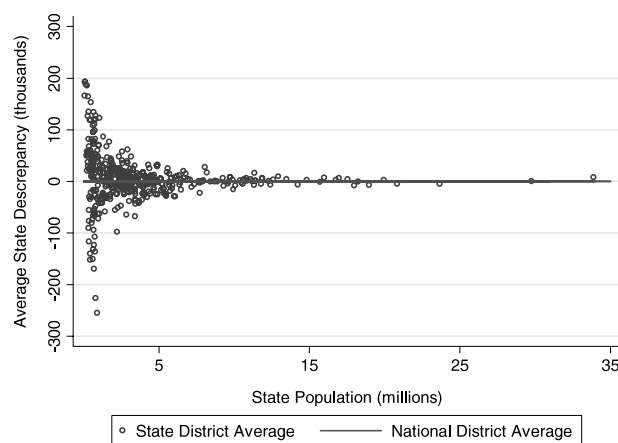


fact was required, to distribute the remainder among its 53 districts as equally as possible. Thus, California's average district size, 640,204, was nearly the national average. The average discrepancy between California's and the nation's average district size was 6,748 individuals. Even so, California was not the best-apportioned state in 2000. Because of the combination of many districts among which Pennsylvania could distribute its population remainder and a population very near a whole-number multiple of the national district average population, the typical Pennsylvania district had an average discrepancy from the national average of only 452 individuals. Conversely, Utah's population of 2,236,714 individuals entitled it to three House seats, resulting in an average district of 745,571 (underrepresented) individuals. This is an average discrepancy between the state and national average district size of 98,619 individuals: more than 14 times that of California and more than 218 times that of Pennsylvania. The population remainder proves more troublesome for states with only one district. For instance, Montana was malapportioned from the national average by 258,364 (underrepresented) individuals—an average discrepancy more than 38 times that of California and more than 571 times that of Pennsylvania.

Interstate malapportionment is not confined to just a few states. After the 2000 reapportionment, the average discrepancy between the average district size of the ten states with the largest populations and the national average district size was 8,424 individuals; for the ten states with the smallest populations, 90,888 individuals. The calculation of the apportionment discrepancy based solely on population, however, underestimates the extent of the interstate malapportionment. For example, North Dakota had only one district but, like Pennsylvania, had an apportionment population very near a whole-number multiple of the national district average population. As such, North Dakota, with 643,756 individuals, was malapportioned from the national average by only 3,196 individuals. The average discrepancy of the ten states with the smallest apportionment discrepancy was 3,796 individuals; of the ten states with greatest apportionment discrepancy, 112,561 individuals: a difference of nearly 30 times.

The problem of remainder distribution is a mathematical identity that systematically causes disproportionate interstate malapportionment. Figure 2 displays average state discrepancy and state population from 1920 through 2000—the period during which the House membership was fixed at 435. The average state discrepancy is the number of individuals that each state's average district is either overrepresented (negative numbers) or underrepresented (positive numbers) relative to the national average district size (the flat line at 0) for each decennial apportionment. The pattern is clear: the smaller the state, the greater the likelihood and the greater the extent to which that state is malapportioned. The fixed size of House membership,

**Figure 2**  
**Interstate malapportionment by state size:**  
**1920–2000 with 435 members**



which limits the ability of a small state to distribute its population remainder adequately, accentuates the problem. If the House were to increase its membership, small states would be apportioned a relatively small number of additional districts and large states would be apportioned a relatively larger number of additional districts. Together, the distribution problem of population remainders would be less acute, which, in turn, would also better approximate equal representation between the small and large states.

Although no system of representative democracy will ever be able to meet the one-person, one-vote rule perfectly, a nation with a heterogeneously distributed population, a federal system of representation with territorial constraints, and a legislature without size adjustments causes unusually severe interstate malapportionment—more severe than the malapportionment found in many intrastate cases. Again, after the 2000 reapportionment, one example of interstate malapportionment was more than 21 times greater than the intrastate malapportionment ruled unconstitutional in *White*.

Although the increase in interstate malapportionment since 1910 is not strictly linear (see table 1), the trend is positive and steep. There are few reasons to anticipate any significant changes in the trend, given the distribution and growth rates of state populations and the attendant constitutional and mathematical issues. Indeed, if each state's population increases at the same rate as it did from 1990 to 2000, the 2010 reapportionment will result in a national average district size of 735,433 and a maximum difference of 481,812 individuals between the most under- and overrepresented districts.<sup>20</sup> In this case, the malapportionment discrepancy increases to almost 25 times worse than that of the malapportionment ruled unconstitutional in *White*. Given that U.S. Supreme Court decisions

and modern democratic theory promote the significance and equality of every individual (“one-person, one-vote”), such variance in the equality of representation is difficult to justify or to ignore.

### Assessing the Remedies for Interstate Malapportionment

Given the nature of the first cause of interstate malapportionment, namely, uneven population distribution among the states, there is little, if anything at all, that can be done about it. The uneven and skewed distribution of state populations is a function of interstate mobility and birth rates. These cannot, or at the very least ought not, be regulated. Reminiscent of Madison’s argument in *Federalist* No.10 about the solutions for the causes of factions: the remedy for the dispersed and skewed state populations is “worse than the disease” because it would require “destroying the liberty which is essential to its existence.”<sup>21</sup>

Assessing the remaining causes is more difficult. To do so, we first need to evaluate the standards by which we judge the adequacy of representative institutions in providing political equality and fairness. In other words, we ask whether interstate malapportionment is something that is normatively unacceptable. Normative acceptability can be assessed, Beitz argues, through a system of complex proceduralism. “Complex proceduralism does not embrace any single value (such as the conservation of power) as definitive of political fairness; it recognizes a plurality of reasons why a procedural regime might be judged to be unfair.”<sup>22</sup> Beitz defines three paradigmatic cases of regulative interests of citizenship that “it would be reasonable to take into account in assessing the arrangement for participation”: recognition, equitable treatment, and deliberative responsibility.<sup>23</sup> These three interests provide a guide based on citizen desires, beliefs, and expectations; that is, the theory does not impose an a priori ideal institutional arrangement.<sup>24</sup> Hence, evaluating each and negotiating among the regulative interests for “any particular issue of procedural design must be treated as a freestanding moral issue to be worked out more or less intuitively in a way that takes account of the historical circumstances in which the procedures are to operate.”<sup>25</sup>

Nonetheless, within the context of each issue and institution, there are constraints. Parties are prevented from “seeking procedural advantages for themselves that conflict with [the regulative] interests which all are assumed to share.”<sup>26</sup> In this way, the desirable procedural choice set is defined by all alternatives that meet these interests and that are objective and reasonable. Objectivity considers that “the weight of the harm should reflect the degree of importance or urgency one could expect others in society to accord to it”; reasonableness considers “the harm to other interests that might be anticipated under the feasible alternative arrangements, again taking into account

their objective importance.”<sup>27</sup> Overall, Beitz presents a powerful theory, in our view, because normative evaluations rest, in part, on the importance of history as well as practical implementations and implications.

To make specific assessments of the representative institutions of the United States, we begin with the theoretical conceptualizations and practical implications of congressional constituencies. We begin again in the Senate, which naturally begs the question why should we be concerned about interstate malapportionment in the House when the interstate malapportionment in the Senate is so much more severe? The assignment of two senators to every state regardless of population makes the Senate one of most malapportioned chambers in the world.<sup>28</sup>

The Senate’s apportionment, however, is explicitly rooted in the Constitution and is specifically designed to represent states, not individuals, equally.<sup>29</sup> This difference derived, Zagari argues, from the Framers’ differing concepts and standards of democracy and representation.<sup>30</sup> In other words, the Framers from small states and from large states were not merely defending material self-interests or attempting to gain procedural advantages. Differently-sized states had different political histories and experiences, and these influenced their conceptualizations of democratic procedures. Rehfeld posits that some members of the Constitutional Convention held that smaller states, on the one hand, had relatively stronger local bonds through their small towns, and thus “place” defined their ideas about representation and democracy; larger states, on the other hand, did not have similar experiences, and thus favored the representation of individuals.<sup>31</sup> Thus, the Framers who advocated representation of states and those who advocated representation of individuals shared the ideals of democracy but simply defined constituency differently because of their experiences.

Since their country’s founding, Americans generally have accepted the Senate’s apportionment as a unique part of American democracy despite its obvious “undemocrateness.” The Senate, then, seems to exemplify Beitz’s argument that political equality and fairness must treat each institution in question as “a freestanding moral issue” and account for “the historical circumstances” that gave rise to the institution. In other words, if Americans generally recognize and accept the inequality inherent in the Senate, then the institution may not violate the normative requirements of political fairness.<sup>32</sup>

In many ways, evaluating the House is more difficult. The Framers agreed in the Great Compromise to split the difference among them by creating the Senate (to represent place) and the House (to represent individuals). After that, “population equality became the central rule of representation” for the lower chamber.<sup>33</sup> Although the Constitution defines House constituencies on the basis of individuals, it also instructs that the distribution and construction of the House districts be territorially bounded.

As we have shown, the constitutional principle of political equality, the constitutionally-mandated definition of House constituencies, and the current practice of apportionment are incompatible. Interstate malapportionment is the invariable result in the House. The Senate was not conceived on principles of individual equality; the House was. And therein is the difficulty.

As the foregoing discussion of the Senate and the House demonstrates, there are different yet legitimate definitions of constituencies and standards of democracy for representative institutions.<sup>34</sup> Rehfeld argues that American electoral constituencies “could be (and could have been) defined by descriptive or ascriptive characteristics: for example, by profession, religion, ideology, or identity. They could be defined by race or political party, as territorial districts most often are defined today.”<sup>35</sup> Or, as in the case of the Senate, constituencies need not be defined in terms of individuals at all. Had the Constitution and its subsequent interpretations defined and assessed House constituencies on a basis other than individual equality, then interstate malapportionment might still be present but it may not be of constitutional or normative consequence. Currently, however, to change the primary definition of constituency in the House to one of these or another possibility would require constitutional amendment. A constitutional amendment, for instance, could alter the definition of the House constituency, could eliminate the territorial boundaries of House districts, or could switch the House from single-member districts to proportional representation. Each of these could go a long way in reducing or eliminating malapportionment and is deserving of greater debate.<sup>36</sup> If we open the discussion to constitutional change, though, we open a Pandora’s Box of uncertainties and endless options.

The infinite number and types of extraconstitutional options and their consequences make analyses infeasible for the discreet scope of this study. Thus, in our context, we view amending the Constitution, for instance, to eliminate the territorial boundaries of House districts as “unreasonable.” Our significantly more modest and pragmatic goal is to assess the constitutional procedures and their interpretations as they now stand. This approach also is normatively appealing because it respects Beitz’s theory of accepting the unique “historical circumstances” that have surrounded institutional design and development. In accepting the uneven distribution of state populations and the constitutional requirements of territorially defined House districts, we also have accepted the inevitability of interstate malapportionment. But, to invoke the language of the intrastate malapportionment cases, we ask whether the current institutional arrangements make individuals “as mathematically equal as reasonably possible.” This consideration also limits us to statutory changes, and it brings us to the final two causes of interstate malapportionment and their practical consequences.

Because none of the different apportionment methods can eliminate interstate malapportionment entirely, the issue is which method objectively embodies current American standards of democracy with the least bias. This may seem like a straightforward empirical question, but it is not. Leading up to the 1930 Census and reapportionment, debate raged among politicians and mathematicians about the value and bias of each method.<sup>37</sup> The debate was pushed forward by Edward V. Huntington, a Harvard professor of mechanics and mathematics who refined a method developed by Joseph A. Hill, the chief statistician of the Division of Revision and Results at the U.S. Bureau of the Census. Huntington and Hill argued that the relative population discrepancies among states, not the absolute discrepancies (i.e., the Webster method, which was advocated by Walter Willcox, a Cornell professor of philosophy) is the most democratic because it was unbiased between small and large states. The other methods, they argued, already have been shown to be overly biased or prone to undesirable anomalies, such as the Alabama paradox, the population paradox, and the new-state paradox.<sup>38</sup>

Despite a 1929 National Academy of Sciences report commissioned by House speaker Nicholas Longworth endorsing the Hill method, the issue remained unresolved for the 1930 reapportionment. Because of a coincidental distribution of state populations in 1930, the Hill and Webster methods produced the same apportionment and, thus, Congress balked. According to the 1940 Census, however, the state populations were not similarly aligned. The Hill method, as opposed to the Webster method, would provide one more seat to Arkansas and one less to Michigan. The majority party of Congress, the Democrats, with their base of support in the solidly Democratic South, passed and the president, Democrat Franklin D. Roosevelt, signed legislation designating use of the Hill method. It has been used since, but that has not ended the debate. Reexaminations have questioned Huntington’s work.<sup>39</sup> Furthermore, Balinski and Young prove that “Webster’s method is the one and only unbiased divisor method”<sup>40</sup> and that the Hill method is actually biased in favor of small states. Darcy, though, argues that one-person, one-vote is best approximated by minimizing the absolute differences in constituency size and, thus, the Dean method most fully embodies the principles of the Constitution.<sup>41</sup>

After the 1990 Census, the Supreme Court had the opportunity to judge the constitutionality and fairness of the different apportionment methods. In *U.S. Commerce v. Montana* (1992), Montana asserted that the Hill method was unconstitutional and that the Dean method was closer to democratic standards. If the Dean method were to be used instead of the Hill method, Montana, not Washington, would have received the last apportioned House seat (number 435).<sup>42</sup> Montana argued that if it were to receive

the additional seat, it would increase its number of seats from one to two, which would decrease its average district discrepancy from 231,189 to 170,638. Meanwhile, the state of Washington would lose one seat (from nine to eight), which would increase its average district discrepancy from 29,361 to only 38,527. Furthermore, Montana argued that the sum of absolute differences in the two states would be 260,550 under the 1990 apportionment but would be lower, 209,165, under the alternative apportionment. Fundamentally, this argument invoked the question of which apportionment method and fairness measurement best approximated “one-person, one-vote.” Did minimizing the sum of squared differences (the Hill method) better approximate the democratic standard or the sum of absolute differences (the Dean method)?

The Court concluded that it did not possess the capacity to validate one mathematical method over another, and left resolution of this important constitutional question up to Congress and the public. Writing for the majority, Justice Stevens explained:

What is the better measure of inequality—absolute difference in district size, absolute difference in share of a Representative, or relative difference in district size or share? Neither mathematical analysis nor constitutional interpretation provides a conclusive answer. In none of these alternative measures of inequality do we find a substantive principle of commanding constitutional significance. The polestar of equal representation does not provide sufficient guidance to allow us to discern a single constitutionally permissible course.<sup>43</sup>

After nearly eighty years of silence since the enactment of the 1929 act, it is important that there be an open and public discussion to assess the apportionment methods and which method best approximates the democratic standards of representation commonly accepted for the House. In addition, there are certainly some noteworthy consequences for the states that would gain or lose seats. Had Montana prevailed in *U.S. Commerce v. Montana*, it would have doubled its representation in the House. Overall, however, changing apportionment methods would do little to diminish interstate malapportionment. If we compare a switch in methods among the three most-promoted (the Dean, the Hill, and the Webster), only a few of the states and districts would be affected. For the ten apportionments from 1910 to 2000 (the period of the 435-member House), 4,350 seats were apportioned. The *cumulative* number of seats that would change (i.e., counting, as in *U.S. Commerce v. Montana*, the switch of one seat from Washington to Montana as a change of two seats), comparing the Dean method to the Hill method, is 14 (0.32 percent), comparing the Hill method to the Webster method, is 20 (0.46 percent), and, comparing the Dean method to the Webster method, is 32 (0.74 percent).<sup>44</sup> In addition to being quite small, such change actually might worsen interstate malapportion-

ment. As the Court noted, any change from the Hill method would heighten interstate malapportionment as measured by the sum of squared differences. Without “objective” harm and a “reasonable” alternative measure, it is difficult to argue that a change in the apportionment method is a significant or appropriate remedy for interstate malapportionment.

The fourth cause of interstate malapportionment is the fixed and limited size of House membership. The apportionment of representatives and the size of their chamber were hotly debated by the Framers. James Madison, in *Federalist Nos. 55, 56, and 58*, argues in favor of a system of decennial augmentations to the number of House seats and their allotment among the states in accordance with changes in the national and state populations. He asserts repeatedly that the Constitution would ensure such changes. “The foresight of the [constitutional] convention has accordingly taken care that the progress of population may be accompanied with a proper increase of the representative branch of government.”<sup>45</sup> And, “The unequivocal objects of these regulations [in the U.S. Constitution] are, first, to readjust, from time to time, the apportionment of representatives to the number of inhabitants, under the single exception that each State shall have one representative at least.”<sup>46</sup>

Madison’s insistence on periodic apportionment augmentations rests on at least two premises. The first is the normative standard of equal representation of individuals that the Framers agreed to in the Great Compromise. Periodic enumerations and reapportionments would ensure that the standard is met, given the constantly changing populations of the states. The delegates to the 1787 Convention were keenly aware that the failure to do so would jeopardize House members’ communication and contacts with their local constituencies—a point to which we shall return. The second premise is that the state-based definition of constituency and apportionment of the Senate makes accurate individual-based apportionment of the House imperative. It follows that decennial adjustments to the size of the House membership are of paramount concern for the constitutional balance of power and the proper functioning of American democracy.<sup>47</sup> The framers intended the House to be the most egalitarian federal institution and the legislative partner of the Senate. Thus, for individuals to be well represented in the overall legislative process, the House requires periodic enumerations and responsive adjustments to its apportionment of representation.

This concern was so paramount to the first Congress that it passed a constitutional amendment to guarantee apportionment augmentations. The amendment was included in the original *twelve* amendments sent to the states for ratification. The ten that were ratified were to become known, of course, as the Bill of Rights. The first of the original twelve amendments passed by Congress on September 25, 1789, stated the following:



*Article the first.* . . . After the first enumeration required by the first Article of the Constitution, there shall be one Representative for every thirty thousand, until the number shall amount to one hundred, after which, the proportion shall be so regulated by Congress, that there shall be not less than one hundred Representatives, nor less than one Representative for every forty thousand persons, until the number of Representatives shall amount to two hundred, after which the proportion shall be so regulated by Congress, that there shall not be less than two hundred Representatives, nor more than one Representative for every fifty thousand persons.<sup>48</sup>

The amendment was ratified by one state less than required to add it to the Constitution. In a strange twist of history, the other amendment that failed, which concerned congressional pay raises and was originally passed by six states and rejected by five, became the 27th Amendment to the Constitution in 1992.<sup>49</sup> If a sufficient number of states had ratified the apportionment amendment, it would have mandated that in 2000 the House have between 200 and 5,619 members. Clearly, with or without the apportionment amendment, the appropriate number of representatives in the House remains unresolved.

Although not constitutionally mandated, the House adjusted the number of seats in the chamber after every decennial Census from 1790 through 1910. The 1910 reapportionment increased the chamber to 435 members. Congress, however, failed to pass reapportionment legislation after the 1920 Census.<sup>50</sup> That failure occurred primarily for political reasons, not the functional one of legislative efficiency, which often is cited today in support of maintaining 435 members.<sup>51</sup> Between 1910 and 1920 the U.S. population grew by nearly 15 percent, but unevenly. The population grew fastest in the Northeast; overall it became younger, majority urban, and more ethnically diverse. This was in part due to the then-unprecedented volume of immigration. Congressional opposition to increasing the number of House members arose among legislators from states that did not experience large population increases and who had nativist and big-city fears.<sup>52</sup> The legislative stalemate kept the House, by default and not statutory design, at the then-existing size of 435 members.

Congress remained deadlocked on a new House apportionment over the next decade, failing to legislate a new apportionment. Under increased pressure due to the pending 1930 Census, President Hoover called a special session of Congress, which passed the 1929 Apportionment Act. The act established a mechanism for future automatic reapportionments of the existing number of members if Congress failed again to act in accord with its decennial constitutional responsibility. Because Congress abdicated its once-active and decennial role relative to the House's representativeness, House membership has remained at 435 despite the fact that the 1929 act and its minor 1941 amendment do not explicitly specify a numerical size.<sup>53</sup>

After 1910, the U.S. population grew tremendously but, as discussed, unevenly, creating an increasingly skewed population distribution among the states. The distribution combined with territorially defined districts, the apportionment method, and the fixed size of House membership are all elements that combine to create significant interstate malapportionment. The remedy for the first element would do more harm than good; the remedy for the second element would require extreme constitutional amendments; and the remedy for the third element would result in minimal changes in House seats and might even increase interstate malapportionment. None of these elements meets both objective and reasonable requirements of a feasible alternative. To remedy the fixed size of the House would require only a statutory change. That begs the questions: Ought Congress increase its size? If so, to what? And, what effects would returning to the tradition of reapportioning the House to the growing U.S. population have on interstate malapportionment?

To answer the first question we reexamine the standards of House representation and the House definition of constituency. The intrastate malapportionment cases have established the one-person, one-vote rule as the constitutional standard by which to measure the democratic legitimacy of the House. It makes the equality of individuals the definition of the House constituency. This, however, is a relatively modern constitutional interpretation; it first was stated in *Reynolds v. Sims* (1964).<sup>54</sup> Neither the Framers nor the Constitution says that each district must consist of an equal number of individuals. For instance, the apportionment amendment passed by the First Congress indicates that its primary concern was the absolute size of electoral districts, not necessarily the equality of district size. In language similar to that in *U.S. Commerce v. Montana*, the Supreme Court in *Colegrove v. Green* (1946) ruled that equal apportionment among districts was a political, not a constitutional, matter.<sup>55</sup> Justice Felix Frankfurter, writing for the majority in *Colegrove*, wrote:

The short of it is that the Constitution has conferred upon Congress exclusive authority to secure fair representation by the States in the popular House and left to that House determination whether States have fulfilled their responsibility. If Congress failed in exercising its powers, whereby standards of fairness are offended, the remedy ultimately lies with the people. Whether Congress faithfully discharges its duty or not, the subject has been committed to the exclusive control of Congress.<sup>56</sup>

Later, in *Baker v. Carr* (1962), the court overruled *Colegrove v. Green*, opening the door for a subsequent wave of Court cases that established the modern one-person, one-vote rule. The cases arose mainly from disputes in southern states, among them Tennessee, Georgia, and Texas, and in the historical circumstances of southern racial segregation and disenfranchisement, the civil rights movement, and the Voting Rights Act (1965). In essence, it constructed this "quantitative" rule to mitigate the qualitative problems of

geography, class, ethnic, and racial bias.<sup>57</sup> In so doing, the Court established the ideal of one-person, one-vote as a constitutional rule, thereby imposing a particular standard by which to evaluate the democratic legitimacy of the “representativeness” of House districts.

The Court has since reaffirmed the rule’s centrality by repeated advertence to it. Beitz argues that the rule has become so widely accepted in the United States as the standard of democratic legitimacy that it “has become a settled matter,”<sup>58</sup> that “it is hard to discern much contemporary disagreement about it.”<sup>59</sup> As such, quantitative issues of political equality and fairness have practically been relegated to history.<sup>60</sup> In the contemporary United States, issues of equality and fairness, per Beitz, are principally only ones of qualitative, not quantitative, representation.

Still, as we have shown, the malapportionment that “has become a settled matter,” namely, intrastate malapportionment, is only one of two types of malapportionment problems. Beitz and others have overlooked interstate malapportionment. If the normative precept of one-person, one-vote is currently the judicially and publicly accepted basis of political equality and fairness in the House, there is no normative, logical, or constitutional reason to prejudice one type of malapportionment over another. The same reasoning and enforcement ought to be applied to interstate malapportionment that is applied to intrastate malapportionment. If increasing the size of House membership would considerably mitigate malapportionment and more fully meet the accepted standards of democratic legitimacy and definitions of constituency, then an alternative procedural arrangement (e.g., size of the chamber) may be both objective and reasonable. Thus, under present conditions, at least two of Beitz’s regulatory interests—recognition and equitable treatment—would be unduly violated. According to complex proceduralism, the inequality of interstate malapportionment in the House and thus, possibly, the fixed size of House membership can be deemed politically unfair and normatively suspect. In that vein, a number of social scientists have also argued that the fixed size of House membership undermines the original constitutional intent and is too small to meet the present needs of representation adequately.<sup>61</sup>

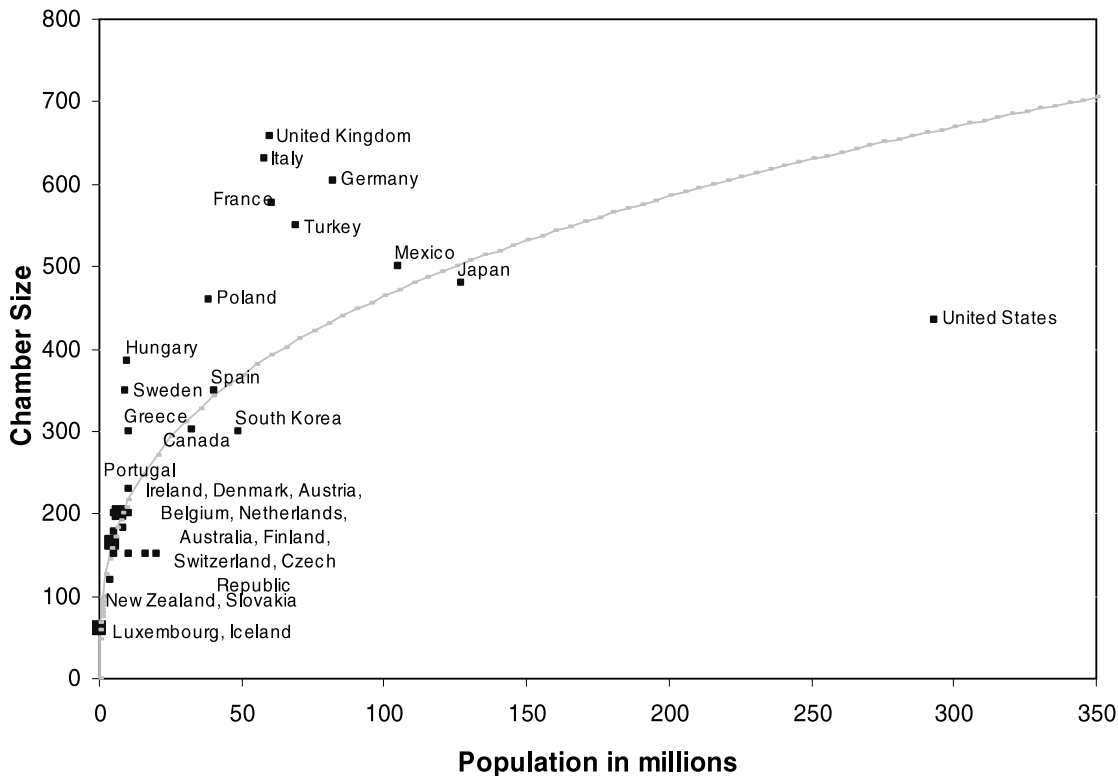
The determination of the normative claim, though, rests on the feasibility and impact of alternative procedural arrangements. We have argued that the full implementation of one-person, one-vote is impossible under current constitutional arrangements. Given the first three causes of interstate malapportionment, the only remaining means of fully implementing the constitutional rule mandated by the Court is increasing House membership to that of the size of the apportionment population: everyone is a representative. De facto direct democracy, though, is wholly infeasible, impractical and unwise.<sup>62</sup> In this way, “unfixing” the size of the House membership is admittedly a strategy limited by the capacity of the chamber. Nonethe-

less, it is the one remedy best able to achieve the goal of minimizing interstate malapportionment. But, if de facto direct democracy is not a viable option, how does one determine the best size of a legislature? The standards of democracy discussed thus far have not yielded an answer. Additional standards of legitimacy that are also democratically important and consistent with one-person, one-vote may be useful.<sup>63</sup> There are many such possible standards: stability; the ease with which consensus can be achieved; the need to reduce the level of conflict within the institution; and among others, the desire to increase the racial, ethnic, or gender diversity of the chamber. None of these, however, provides much purchase on defining the appropriate size of the House. As mentioned above, Madison, in *Federalist* No. 55, adds another standard: communication demands. He argues that the size of the House membership should be increased in relation to the population so the representatives will “possess a proper knowledge of the local circumstances of their numerous constituents.”<sup>64</sup> At the same time, he worries that the number of representatives “ought at most to be kept within a certain limit, in order to avoid the confusion and intemperance of a multitude.”<sup>65</sup>

The two communication demands have competing logics. More members would decrease constituency size and thereby ease communications demands between representative and constituency. More members, however, also increase the membership size of the legislature and thereby increase the internal difficulties of communicating, organizing, and legislating. Rein Taagepera, in his seminal article “The Size of National Assemblies,” embraces these competing dimensions.<sup>66</sup> He demonstrates that the optimal membership size of legislature is the one that minimizes the cumulative communication demands. He argues that the cumulative demands are minimized when the size of the chamber is the cube root of the nation’s population. In other words, the cube root metric best approximates cross-national democratic commitments intended to maximize the ability of legislators to communicate with their constituencies as well as among themselves. He calls his finding the “cube root law of assembly size.” The “cube-root law” has, since the early 1970s, been widely examined, used, and accepted among comparative political scientists.<sup>67</sup>

We invoke communication demands as an *additional* standard for three reasons. First, it is consistent with the standards of democratic legitimacy as stated by the Framers and the Constitution. Second, it is not contradictory but in fact complementary to the Court’s constitutionally interpreted standard of “one-person, one-vote.” Third, it provides a discrete upper threshold to the size of the House and, thus, avoids the otherwise intractable problems of objectively determining the appropriate, yet limited, size of the chamber. The “cube-root law” furnishes what we view as an objective and reasonable answer to the question: if

**Figure 3**  
**Populations and sizes of lower chamber, OECD countries**



Congress were to increase the membership size of the House, how many members should it have?

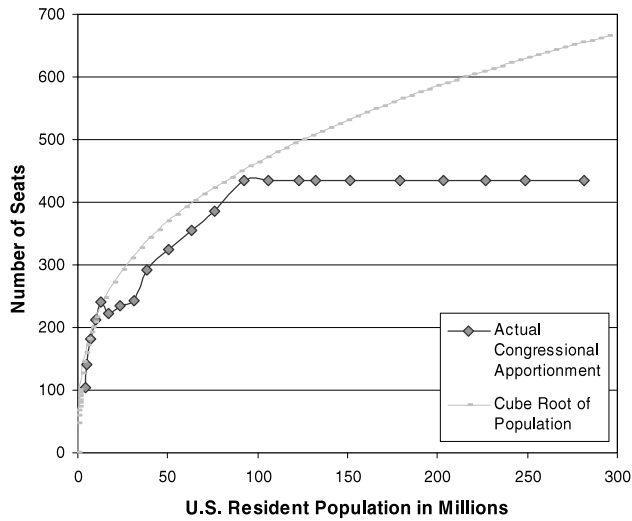
The U.S. apportionment population in 2000 was 281,424,177, and the cube root of that number is approximately 655. This suggests that the House is undersized by 220 members and that the communication demands of House members with their constituents have not been reasonably minimized. Contemporary journalistic and anecdotal accounts lend credence to this conclusion. More systematic interview accounts from a number of decades ago by Dexter (1968) and Fenno (1978) document the difficulties that House members already were having in communicating with their constituents.<sup>68</sup>

Taagepera's cube-root equation has been accurate in estimating the legislature size-to-population ratio for most advanced democracies. Figure 3 plots the population of all of the countries from the Organization of Economic Co-operation and Development (OECD), the size of their lower chambers, and a cube-root trend line.<sup>69</sup> The sizes of most countries' lower chamber hew closely to the cube-root trend line or err on the side of more representatives. The U.S. House stands alone in the degree to which its lower chamber is malapportioned relative to the national population. When compared to all countries for which there are data (n = 228), the U.S. House is still an outlier.

Among those countries, only India has a larger negative discrepancy (i.e., too few representatives) between its chamber size and the cube root of the population.<sup>70</sup> Other scholars have also called for the U.S. House to be apportioned in line with the cube-root law.<sup>71</sup>

The history of House membership demonstrates that when Congress adjusted the apportionment size of the House, its size coincidentally conformed to the cube-root law. Figure 4 plots the size of the House and the U.S. population after each decennial reapportionment since 1790. Because the U.S. population increased each decade, the plotted points are also in chronological order. Every decade from 1790 to 1910, the House apportionment changed, including a decrease in the House membership size in 1840. These decennial adjustments map closely with the cube root of the U.S. population. In some ways, this endorses the logic inherent in Madison's arguments and in the "cube-root law." After 1910, the flat line in figure 4 indicates the fixed size of the House membership at 435. The growing discrepancy from the cube root of the U.S. population is apparent: from 1790 to 1910, the House membership size and reapportionment closely followed what today would be consistent with the cube root of the population. Only after 1910 does the apportionment of the U.S. House increasingly diverge from its

**Figure 4**  
U.S. House apportionment, 1790–2000

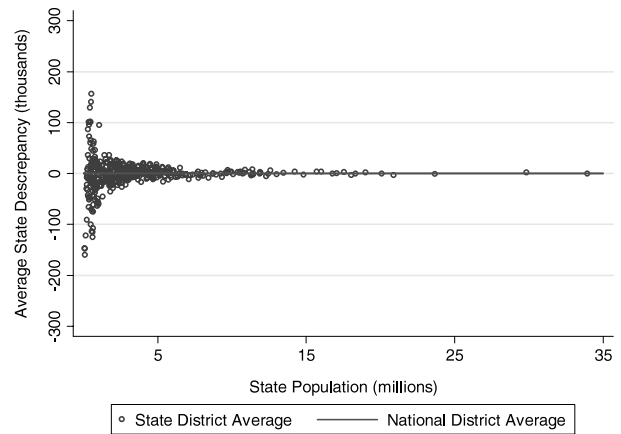


historical tradition and the present practice of most advanced democracies.

Given the uneven distribution of state populations, the territorial basis of congressional representation, and the vexations attendant upon apportioning population remainders, interstate malapportionment will never be absolutely eliminated. A U.S. House apportioned to the cube root of the population, however, would significantly diminish its extent. Figure 5 plots the average state discrepancy (the difference between a state’s average district size and the nation’s average district size) of all states from 1920 (the first failure to reapportion) through 2000. Negative values indicate overrepresented states; positive values, underrepresented states; and the flat line (at 0) is the national average for each decade. Similar to figure 2, some interstate malapportionment remains. Unlike figure 2, the average district discrepancies for most of the states hew closely to the national district average. The chart, however, may visually underrepresent the change. The current constitutionally accepted measurement standard of one-person, one-vote set by *U.S. Commerce v. Montana* is the sum of squared difference of each state’s average district size from the national average. The cumulative sum of squares from 1920 to 2000 for the 435-members chamber is 1.06 E+12, and the sum of squares for the cube root chamber is 4.32 E+11, a decrease in interstate malapportionment of almost 60 percent.

Focusing on the current apportionment, table 2 displays the apportionment population, the average district size, and the average discrepancy between the state and national average district size for all states in a 435-member chamber and a 655-member chamber. The average interstate malapportionment among the states with

**Figure 5**  
Interstate malapportionment by state size: 1920–2000 apportioned by cube-root



the greatest discrepancies between each state’s average congressional size and the national average in the hypothetical 655-member House (the average would be 67,650 individuals) is reduced by 40 percent compared to the 435-member House. Among the ten states with the smallest discrepancies (the average would be 1,443 individuals), interstate malapportionment is reduced by 65 percent. Among the ten smallest states (the average discrepancy would be 66,080 individuals), it is reduced by 27 percent; and, among the ten largest states (the average discrepancy would be 3,701 individuals), it is reduced by 56 percent.<sup>72</sup> Measuring interstate malapportionment with the sum of squared differences also shows a substantial decrease (53 percent) between a 655-member House and the current 435-member House.<sup>73</sup>

The decline in interstate malapportionment with a 655-member chamber is in part due to the fact that only one state, Wyoming, would have the minimum of one House member. Although not every state would decrease the discrepancy between its average district population and the national average, the representation of every individual regardless of state residence would become more equal (as measured by the sum of squared differences); the average national district population would decrease from 646,952 to 429,655 individuals; and, most important, one-person, one-vote would be more fully realized. Hence, increasing the membership of the U.S. House of Representatives to the cube root of the U.S. apportionment population in order to aid in remedying interstate malapportionment is a practical and normatively feasible alternative.

This might well have been an advantageous argument for Montana. Perhaps foreseeing the conservative line of reasoning of the Court in *U.S. Commerce v. Montana* (foreshadowed in *Colegrove v. Green* in 1946), Montana may have been wise not to argue against the constitutionality



**Table 2**  
**2000 apportionment of the U.S. House**

State	Resident Population	With 435 House Seats			With 655 House Seats		
		Number of Seats	State Average District Size	Discrepancy from National Average <sup>1</sup>	Number of Seats	State Average District Size	Discrepancy from National Average <sup>1</sup>
Alabama	4,461,130	7	637,304	-9,648	10	446,113	16,458
Alaska	628,933	1	628,933	-18,019	2	314,467	-115,189
Arizona	5,140,683	8	642,585	-4,367	12	428,390	-1,265
Arkansas	2,679,733	4	669,933	22,981	6	446,622	16,967
California	33,930,798	53	640,204	-6,748	79	429,504	-151
Colorado	4,311,882	7	615,983	-30,969	10	431,188	1,533
Connecticut	3,409,535	5	681,907	34,955	8	426,192	-3,463
Delaware	785,068	1	785,068	138,116	2	392,534	-37,121
Florida	16,028,890	25	641,156	-5,797	37	433,213	3,558
Georgia	8,206,975	13	631,306	-15,646	19	431,946	2,291
Hawaii	1,216,642	2	608,321	-38,631	3	405,547	-24,108
Idaho	1,297,274	2	648,637	1,685	3	432,425	2,769
Illinois	12,439,042	19	654,686	7,734	29	428,932	-723
Indiana	6,090,782	9	676,754	29,801	14	435,056	5,401
Iowa	2,931,923	5	586,385	-60,568	7	418,846	-10,809
Kansas	2,693,824	4	673,456	26,504	6	448,971	19,315
Kentucky	4,049,431	6	674,905	27,953	9	449,937	20,282
Louisiana	4,480,271	7	640,039	-6,913	10	448,027	18,372
Maine	1,277,731	2	638,866	-8,087	3	425,910	-3,745
Maryland	5,307,886	8	663,486	16,534	12	442,324	12,669
Massachusetts	6,355,568	10	635,557	-11,395	15	423,705	-5,951
Michigan	9,955,829	15	663,722	16,770	23	442,862	3,207
Minnesota	4,925,670	8	615,709	-31,243	11	447,788	18,133
Mississippi	2,852,927	4	713,232	66,280	7	407,561	-22,094
Missouri	5,606,260	9	622,918	-24,034	13	431,251	1,596
Montana	905,316	1	905,316	258,364	2	452,658	23,003
Nebraska	1,715,369	3	571,790	-75,162	4	428,842	-813
Nevada	2,002,032	3	667,344	20,392	5	400,406	-29,249
New Hampshire	1,238,415	2	619,208	-27,745	3	412,805	-16,850
New Jersey	8,424,354	13	648,027	1,075	20	421,218	-8,438
New Mexico	1,823,821	3	607,940	-39,012	4	455,955	26,300
New York	19,004,973	29	655,344	8,392	44	431,931	2,276
North Carolina	8,067,673	13	620,590	-26,362	19	424,614	-5,041
North Dakota	643,756	1	643,756	-3,196	2	321,878	-107,777
Ohio	11,374,540	18	631,919	-15,033	26	437,482	7,827
Oklahoma	3,458,819	5	691,764	44,812	8	432,352	2,697
Oregon	3,428,543	5	685,709	38,756	8	428,568	-1,087
Pennsylvania	12,300,670	19	647,404	452	29	424,161	-5,494
Rhode Island	1,049,662	2	524,831	-122,121	2	524,831	95,176
South Carolina	4,025,061	6	670,844	23,891	9	447,229	17,574
South Dakota	756,874	1	756,874	109,922	2	378,437	-51,218
Tennessee	5,700,037	9	633,337	-13,615	13	438,464	8,809
Texas	20,903,994	32	653,250	6,298	49	426,612	-3,043
Utah	2,236,714	3	745,571	98,619	5	447,343	17,688
Vermont	609,890	1	609,890	-37,062	2	304,945	-124,710
Virginia	7,100,702	11	645,518	-1,434	17	417,688	-11,967
Washington	5,908,684	9	656,520	9,568	14	422,049	-7,606
West Virginia	1,813,077	3	604,359	-42,593	4	453,269	23,614
Wisconsin	5,371,210	8	671,401	24,449	13	413,170	-16,485
Wyoming	495,304	1	495,304	-151,648	1	495,304	65,649
US	281,424,177						
National Average District Size:			646,952			429,655	
Sum of Squared Differences:				3.55E+11			1.67E+11

<sup>1</sup>Positive values indicate the average number of overrepresented individuals per district. Negative value indicate the amount by which the average district is underrepresentative.

of the apportionment method, but rather against the constitutionality of the 1929 Automatic Apportionment Act and the fixed size of House membership.<sup>74</sup> The Framers and the Constitution were silent on the method of apportionment and, mathematically, there is no single best method of apportionment. The Court, therefore, had little basis from which to rule that the legislatively designated Hill method did not most closely approximate the constitutional standard of “one-person, one-vote.” There is a considerably stronger foundation, however, for concluding that the 1929 Appropriations Act is unconstitutional. As noted, the Framers were not silent on the regular need for fulfillment of Article I’s legislative procedures, or on their expectations for House membership increases relative to population growth. In addition, as the Court recognized in its reapportionment decisions, the Constitution acknowledges the lineage of House’s legitimacy to the representation of “persons.” Furthermore, Montana could have argued that one-person, one-vote would be more fully realized because the sum of squared differences used in the Hill method would have been reduced from 2.87 E+11 to 1.48 E+11. Moreover, Montana’s practical concerns also would have been met, as the number of its House seats still would double (from one to two) and its average district discrepancy would decrease considerably (from 231,189 to 5,925 individuals). For the time being, however, the Court has relegated interstate malapportionment to the political realm, in which the consequences of increasing the size of House membership seem all the more considerable.

### Consequences of Increasing the Size of the House

We have identified a significant and serious concern that has received little attention in the popular press and academic literature: interstate malapportionment among U.S. House districts. We have also suggested one possible reform to ameliorate the problem: increasing the size of the House membership to the cube root of the U.S. resident population. Nonetheless, there are naturally more than a few critiques of enlarging the House that are, at the very least, viscerally appealing.<sup>75</sup> For instance, do we really want *more* politicians? Increasing the number of members would also create practical challenges, such as accommodating them within the physical dimensions of the chamber and its offices. A larger House membership might mitigate malapportionment at the expense of greater political acrimony.<sup>76</sup> Or, because a larger membership would diminish the relative strength of each individual member, would it not make such a reform unlikely to pass? There is no way conclusively to rebut these and other critiques.<sup>77</sup> Such concerns are real.

Notwithstanding that interstate malapportionment presents serious constitutional, normative, and practical

concerns, which undermine the political equality and fairness that define the standards of American democracy and representation, increasing the size of House membership is the only feasible alternative reform that would have a significant impact on the population discrepancies without amending the Constitution. Furthermore, minimizing interstate malapportionment by increasing the size of House membership could have additional positive effects throughout the federal system.

Apportionment can have considerable distribution consequences.<sup>78</sup> Generally, malapportionment benefits the smaller rural states, a fact most evident in the malapportionment of the Senate and its effects on the distribution of federal funds. The small, rural, and overrepresented states tend to receive a greater share of federal largess.<sup>79</sup> Although the malapportionment of the Senate is more severe than the malapportionment of the House, the logic holds there, too. It was for political and distributional reasons that the rural states initially blocked the legislation to increase the size of House membership in 1920. The rural benefits of malapportionment still persist. For instance, Cho demonstrates significant distributional effects in financial expenditures among state legislatures, which also have small population discrepancies compared to those in the U.S. Senate. Interestingly, Cho also finds that malapportioned districts particularly favor rural areas.<sup>80</sup>

If the rural/urban divide corresponds with partisan preferences—as Lang and Sanchez argue—the effects of malapportionment are not limited to Congress and the distribution of federal funds.<sup>81</sup> They also extend to the election of the president. Each state is assigned Electors to the Electoral College equal to the total number of its senators and representatives. Like the Senate, the College is biased in favor of the small states. As the House becomes increasingly malapportioned, the Electoral College becomes further skewed in favor of the small rural states, accentuating the difference between the popular vote and the Electoral College vote. A better-apportioned House might make such outcomes less likely. The 2000 presidential election is a case in point. In 1990, the apportionment population was estimated at 249,022,783. Had the House been reapportioned in accordance with the cube-root rule, it would have had 629 seats with an average national district size of 380,187 individuals. Every state except Alaska and Wyoming would have had at least two representatives. The Electoral College then would have had 732 members for the 2000 election. And, if all of the states voted the same way, Al Gore would have won 368 Electoral College votes, beating George W. Bush’s 364.<sup>82</sup> Neubauer and Zeitlin compare the effects of a range of House sizes on the 2000 Electoral College vote.<sup>83</sup> They demonstrate that—although not strictly linear—the larger the size of the House, the more the Electoral College would approximate the popular vote, and, thus, the more likely Gore would have been elected president.

An increase in the membership of the House could have other positive externalities as well, such as increasing the likelihood that more African-Americans, Hispanics, and women would be elected.<sup>84</sup> Leib and Webster argue for a larger House in the wake of the Court's rulings that found unconstitutional the practice of gerrymandering majority-minority districts.<sup>85</sup> Furthermore, Canon argues that black legislators better represent both black and white constituents.<sup>86</sup> By increasing group representation and reducing communication demands, a larger House might have the effect of improving descriptive and substantive representation.<sup>87</sup> Kromkowski and Kromkowski suggest that increasing House membership could open the political space necessary to consider formal House representation for Washington, D.C., and Puerto Rico.<sup>88</sup>

Further, the relationship between the number of votes a political party receives and the number of seats that it wins varies with the size of the legislative chamber.<sup>89</sup> The smaller the chamber, the more the majority party will be disproportionately overrepresented. For example, in a chamber of one seat, the candidate receiving the plurality of votes wins all of the seats while the candidate(s) receiving less than a plurality of votes wins no seats. Lucas and McDonald argue that because single-member districts have been assumed to produce a votes-to-seats ratio close to the cube-root law, the House should be reapportioned to the cube root of the U.S. population.<sup>90</sup> They show that in the context of strong partisanship—as many argue currently describes the congressional parties<sup>91</sup>—the current underapportioned House may increase the number of seats won by the majority by 33 percent.<sup>92</sup> When the House majority party also tends to represent the rural areas and smaller states, the overrepresentation of the majority further biases the House in favor of these areas and states, and against urban areas and larger states.

## Conclusion

During the 1960s, the Supreme Court took aim at a highly undemocratic form of disenfranchisement: intrastate malapportionment. It did so with a doctrine that underscores the recognition of the essential equality of every individual required by the U.S. Constitution and, more generally, representative democracy. Today, however, the problematic effects of another type of malapportionment, interstate malapportionment, rarely are discussed. Unlike the sets of undemocratic intentions and conditions that triggered the Court's original intervention, the causes of contemporary interstate malapportionment are more difficult to attribute to nefarious intentions. Instead, the causes are the uneven distribution of state populations; the territorially-based House districts; the apportionment method; and the fixed and limited House membership. Nonetheless, interstate malapportionment

should be considered no less significant than intrastate malapportionment. The presence of systematic and disproportional interstate malapportionment poses serious constitutional, normative, and practical problems, which warrant appreciably greater consideration. We suggest that increasing House membership from its current size of 435 to the cube root of the nation's resident population is the only feasible alternative procedural remedy that more fully achieves the current principles, interpretations, and standards of the Constitution.

Our suggestion is made with due caution and the recognition that “no political problem is less susceptible of a precise solution than that which relates to the number most convenient for a representative legislature.”<sup>93</sup> No doubt, there would be many difficulties associated with enlarging House membership, not least of which would be securing passage of the necessary statutory legislation. In so doing, however, Congress would return to the decennial tradition of public debate and legislative action that existed until 1910. In addition, Congress regularly has proven to be capable of reforming its institutions, passing measures that have been commonly viewed as orthogonal to the interests of many individual legislators. The Bipartisan Campaign Reform Act of 2002<sup>94</sup> is one recent example. Any debate on interstate malapportionment and House membership size should address both current and long-term problems associated with inaction, as well as the likely direct and derivative benefits of this arguably long-overdue reform. This study draws attention to these issues because interstate malapportionment undermines fundamental constitutional principles and democratic standards of representation. Furthermore, in that the Court has left the debate to the public sphere, and because the uneven population growth among the states seems destined to continue, the concerns raised here are likely to become more acute.

## Notes

- 1 See *Baker v. Carr*, 369 U.S. 186 (1962); *Gray v. Sanders*, 372 U.S. 368 (1963); *Wesberry v. Sanders*, 376 U.S. 1 (1964); *Reynolds v. Sims*, 377 U.S. 533 (1964).
- 2 *Wesberry*, 376 U.S. at 8.
- 3 *Ibid.* at 8.
- 4 *Ibid.*
- 5 *White v. Weiser* 412 U.S. 783, 790 (1973). The original wording is drawn from *Kirkpatrick v. Preisler*, 394 U.S. 526, 531 (1969). In the latter case, the Court found that the population discrepancy of 25,802 individuals between Missouri's largest and a smallest congressional district was unconstitutional.
- 6 *White*, 412 U.S. at 790.
- 7 *Karcher v. Daggett*, 462 U.S. 725 (1983).

- 8 See Rogowski 1981 for a theoretical discussion of representation and the case history of intrastate malapportionment.
- 9 *U.S. Commerce v. Montana*, 503 U.S. 442 (1992).
- 10 *White*, 412 U.S. at 790, emphasis added.
- 11 The state population figures for 2010 are, of course, estimates. They are calculated by extrapolating from the population growth rates between 1990 and 2000 for each state. Only resident populations were readily available for the entire time series. Resident and apportionment populations differ in that the latter also includes overseas residents. The difference is relatively insignificant. In 2000, there was a total of 574,330 residents officially registered overseas; the state with the largest number (California) had 59,150 overseas residents (0.175 percent); the state with the largest percentage (Hawaii) had 5,105 overseas residents (0.421 percent).
- 12 Madison, *Federalist* No. 58, in Kesler and Rossiter, eds., 1999, 325.
- 13 *U.S. Commerce v. Montana*, 503 U.S. at 464.
- 14 *Ibid.*
- 15 Balinski and Young 1982, 1.
- 16 For a discussion of the methods, the historical use, and the value of each, see Balinski and Young 1982; Darcy 2004; Huckabee 2000, 2001; *U.S. Commerce v. Montana*, 503 U.S. 442 (1992).
- 17 Act of November 15, 1941, 1, 55 Stat. 761–762, 2 U.S.C. 2a.
- 18 The House was briefly increased to 437 members in 1959 to accommodate the statehood of Alaska and Hawaii. It returned to 435 members after the 1960 reapportionment.
- 19 See Celler 1951.
- 20 Population growth rates are calculated using the 1990 and 2000 U.S. Census, and apportionment was assigned using the Equal Portions (Hill) Method as described by the U.S. Census.
- 21 Madison, *Federalist* No. 10, in Kesler and Rossiter, eds., 1999, 72–73.
- 22 Beitz 1989, 100.
- 23 *Ibid.*
- 24 *Ibid.*, 107.
- 25 *Ibid.*, 106.
- 26 *Ibid.*, 105.
- 27 *Ibid.*, 109. “Reasonableness” is our label of Beitz’s concept.
- 28 Samuels and Snyder 2001.
- 29 Dahl 2002 argues that the apportionment of the Senate is a fundamental flaw of the Constitution.
- 30 Zagari 1987.
- 31 Rehfeld 2001, 2005.
- 32 Beitz 1989, 94.
- 33 Rehfeld 2001, 76. The principle of population equality, though, was certainly not broadly defined. See, for instance, the Three-Fifths Clause of the Constitution.
- 34 Beitz 1989; Rehfeld 2001, 2005.
- 35 Rehfeld 2001, 54.
- 36 See, for instance, Guinier 1994 and Lijphart 1998.
- 37 Balinski and Young 1982, 46–59.
- 38 *Ibid.*, 70. The Alabama paradox arises when an apportionment formula assigns a state fewer representatives when the size of the chamber increases. The population paradox arises when a state with a faster growth rate loses a seat to a state with a slower growth rate. The new-state paradox occurs when a new state is provided its “fair” representation and the chamber’s size is accordingly increased, but the apportionment for other states is nonetheless affected.
- 39 Balinski and Young 1982 (51) state that Huntington omitted tables from his work that would have supported the Webster method.
- 40 *Ibid.*, 76. Also see Young 2001.
- 41 Darcy 2004. Balinski and Young 1982 (53) concur that the Dean method minimizes the absolute difference in constituency size but argue that it does not minimize each state’s distance from the quota, or its fair representation.
- 42 This is the only seat that would have changed after the 1990 Census if the Dean method had been adopted.
- 43 *U.S. Commerce v. Montana*, 503 at 464. It may be significant to note that Justice Stevens writes about measuring “inequality” instead of invoking the intrastate standard of political equality.
- 44 Because each state is constitutionally guaranteed at least one seat, it could be argued that counting all 435 seats overestimates the number of seats eligible to change and thus underestimates the effects of changing apportionment methods. If we assume, then, that only 385 seats are actually eligible to change, then the percentages of seats that change are 0.36 percent, 0.52 percent, and 0.83 percent, respectively.
- 45 Madison, *Federalist* No. 56, in Kesler and Rossiter, eds., 1999, 317.
- 46 Madison, *Federalist* No. 58, in Kesler and Rossiter, eds., 1999, 324.
- 47 *Ibid.*, 325.
- 48 Mount 2004.
- 49 Gregory Watson, a University of Texas undergraduate, rediscovered this ‘sleeping amendment’ in 1982. In a paper for an Introduction to American Politics course, he argued that because no time limit had been placed on the amendment (similar to the apportionment amendment) it could still be ratified. Despite receiving a grade of C on the paper, he pursued the issue with each state. With some later assistance by Ralph Nader and others, he eventually



- persuaded enough states to pass the amendment. The Archivist of the United States ruled on May 18, 1992, that the original Second Amendment was finally ratified as the Twenty-seventh Amendment (Dean 2002).
- 50 Eagles 1990. The 66th Congress's House Census Committee proposed increasing House membership to 483 and the 67th Congress's House Census Committee proposed increasing the House membership to 460 (Lucas and McDonald 2000, 373). Neither proposal succeeded.
- 51 Evans and Oleszek 1998; Overby 1992.
- 52 Ibid. These are basically the same alignments in the concomitant debate over apportionment methods discussed above.
- 53 Kromkowski and Kromkowski 1991.
- 54 Rehfeld 2001, n5.
- 55 *Colegrove v. Green*, 328 U.S. 549 (1946).
- 56 Ibid. at 554.
- 57 Tribe 1978.
- 58 Beitz 1989, 141.
- 59 Beitz 1989, xv.
- 60 Beitz 1989, 8, 141–142.
- 61 Anderson 2000; Kromkowski 2002; Kromkowski and Kromkowski 1991, 1992; Lijphart 1998; Lucas and McDonald 2000; Zimmerman and Rule 1998.
- 62 Madison, *Federalist* No. 10, in Kesler and Rossiter, eds., 1999, 73–74.
- 63 Beitz 1989.
- 64 Madison, *Federalist* No. 55, in Kesler and Rossiter, eds., 1999, 339–340.
- 65 Ibid.
- 66 Taagepera 1972.
- 67 Lijphart 1994; Shugart and Carey 1992; Taagepera and Shugart 1989.
- 68 Dexter 1968 and Fenno 1978.
- 69 The data are from the 2004 U.S. Central Intelligence Agency's Factbook. See <https://www.cia.gov/cia/publications/factbook/>.
- 70 The ten worse negatively apportioned lower chambers belong, in descending order, to: India, United States, Bangladesh, Pakistan, Philippines, Columbia, Peru, Saudi Arabia, Kazakhstan, and Nigeria. The lower chamber's membership size is not the most important issue determining the quality of representation in many of these countries.
- 71 Kromkowski and Kromkowski 1991; Lijphart 1998; Lucas and McDonald 2000.
- 72 The percentages are simply the difference between the 2000 average aggregate discrepancy for each category for the 435-member chamber and the 2000 average aggregate discrepancy for each category for the 655-members chamber, divided by the former.
- 73 The sum of squares for the 435-member House is 3.55 E+11; the sum of squares for the 655-member House is 1.67 E+11. The sum of absolute differences (the Dean method) is also reduced (by 30 percent) from 7.56 E+6 to 5.31 E+6.
- 74 Kromkowski and Kromkowski 1991, 135.
- 75 Huckabee 1995; Evans and Oleszek 1998; Overby 1992; Rush 1998.
- 76 Buchanan and Tullock 1962; Dahl and Tufte 1973, 91–96.
- 77 Kromkowski and Kromkowski 1991 list twenty-five possible benefits that, for the most part, add to the benefits discussed here.
- 78 Kromkowski 2002, xvii.
- 79 Lee 1998, 2000.
- 80 Cho 1976, 71.
- 81 Lang and Sanchez 2006.
- 82 This result is based on the assumption that Bush won Florida; all of the districts of Maine and Nebraska still voted for Gore and Bush, respectively; and that Washington, D.C. only has three electoral votes. Washington, D.C. had a population of 606,900 in the 1990 U.S. Census. This amount is large enough to have earned two “ghost” members in the U.S. House and thus four Electoral College votes. However, the Twenty-Third Amendment to the Constitution states that the number of electors assigned to Washington, D.C. should “in no event [be] more than the least populous State.” Because Alaska and Wyoming still would have had three electoral votes, so would the District.
- 83 Neubauer and Zeitlin 2003.
- 84 Darcy and Choike 1986.
- 85 Leib and Webster 1997.
- 86 Canon 1999.
- 87 Mansbridge 1999.
- 88 Kromkowski and Kromkowski 1991, 143.
- 89 Lee and Oppenheimer 1997; Lucas and McDonald 2000; Taagepera and Shugart 1989.
- 90 Lucas and McDonald 2000, 377.
- 91 Bond and Fleisher 2000.
- 92 Lucas and McDonald 2000, 377–78.
- 93 Madison, *Federalist* No. 55, in Kesler and Rossiter, eds., 1999, 309.
- 94 Moscardelli and Haspel 2007.

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