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ABSTRACT:

Apportionment issues inevitably arise decennially. Consistent with historical trends, the debates concerning the upcoming 2010 apportionment have already begun to intensify. Deciding which apportionment method to use has generated intense debates among some of the most prominent figures in the Nation's history. Most scholars believe that there is constitutional tension between two fundamental apportionment constraints: apportioning proportionally and representatively. It has been universally accepted that it is "impossible to satisfy both criteria." In order to satisfy both criteria, an apportionment method must both maintain quota and avoid paradoxes. I postulate a new method, the "Webster Plus One" approach, which stands to settle the apportionment method debate by guaranteeing proportional and representative apportionment, while simultaneously maintaining quota and avoiding paradoxes. Because this method finally ensures a constitutional apportionment, it should be implemented by Congress prior to the 2010 reapportionment.

I. INTRODUCTION

The Constitution requires Congress to conduct a decennial apportionment.[1] As part of the decennial apportionment, Congress must choose

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1. U.S. CONST. art. I, § 2, cl. 3.

a method by which to apportion the representatives.[2]

Although choosing what method to use may seem mundane and inconsequential, the choice has helped shape the country's political landscape.[3] In the 1876 presidential election, Rutherford B. Hayes won the presidential nomination by one vote in the Electoral College.[4] Had Congress chosen a different apportionment method, Samuel J. Tilden would have been President.[5] Similarly, in 1930, a different apportionment method would have changed majority control of the Seventy-Second Congress.[6]

Foreseeing the significance of the apportionment issue, our Nation's founding fathers struggled to find an optimal apportionment method.[7] "The involvement of [George Washington, Alexander Hamilton, James Madison, John Quincy Adams, and Daniel Webster] as well as many others, attests both to the complexity of the problem and to its profound political consequences."[8]

Unfortunately, these prominent individuals have been unable to find an optimal solution because the Constitution seems to demand the impossible. "Representatives shall be apportioned among the several States according to their respective numbers."[9] Although this language may not seem to create a patent impossibility, upon close examination, the plain language imposes two seemingly incongruent restraints: (1) the term "apportion" plainly requires proportionality (maintaining quota), and (2) the term "representative" clearly envisions representativeness (avoiding paradoxes).[10]

This article proposes a method to finally resolve this quota-paradox impossibility. The method I propose, "The Plus One" method, is the only method that both maintains quota and avoids paradoxes. Part II of this article provides a condensed history of apportionment and provides a layman's description of the current apportionment methods. Part III describes and

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2. *See*, MICHAEL L. BALINSKI & H. PEYTON YOUNG, FAIR REPRESENTATION: MEETING THE IDEAL OF ONE MAN, ONE VOTE 2 (2nd ed. 2001).

3. *Id.*

4. LAWRENCE D. LONGLEY & NEAL R. PIERCE, THE ELECTORAL COLLEGE PRIMER 21-25 (1996).

5. *See* BALINSKI & YOUNG, *supra* note 2, at 37

6. *Id.*

7. *Id.* at 37-41.

8. *Id.* at 37.

9. U.S. CONST. art. I, § 2. (emphasis added). The Constitution originally provided that "Representatives . . . shall be apportioned among the several States . . . according to their respective Numbers, which shall be determined by adding to the whole Number of free Persons, including those bound to Service for a Term of Years, and excluding Indians not taxed, three fifths of all other Persons." *Id.* Section 2 of the Fourteenth Amendment subsequently modified Article I, § 2, by requiring that all persons be counted including former slaves. U.S. Const. amend. 14(2). Hereinafter, when I refer to Article I, § 2, I am referring to the modified Article I, § 2 provision.

10. *See* discussion *infra* Part IV for a description of these two key terms. The terms are considered incongruent because no method has been developed that meets both criteria.

analyzes appropriate apportionment criteria and argues that the Constitution implicitly requires – as opposed to merely suggests – that an apportionment method maintain quota and avoid paradoxes. Part IV describes my method, the "Plus One" method, and demonstrates that this method is the only method that finally resolves the "impossible quota-paradox problem."[11] Part V concludes that the "Plus One" method creates an optimal solution.

II. APPORTIONMENT HISTORY AND BACKGROUND

The decennial census has its history tied to the foundations of our Nation. The Constitution required Congress to conduct a census and apportion the House within three years of Congress' first sitting and reapportion the House every decade thereafter.[12] With one notable exception, Congress has reapportioned the House every decade since 1790; however, for a number of political reasons, Congress did not reapportion the House after the 1920 census.[13] Although this failure constituted a prima facie constitutional violation, it was never adjudicated.[14] Despite the intense historical debates and political importance of apportionment, the Supreme Court has only once granted certiorari to determine the constitutionality of an apportionment method.[15] This section introduces the apportionment methods in non-mathematical terms and provides a brief history of apportionment in the United States.

A. Understanding the Apportionment Methods

The apportionment problem essentially devolves to a problem of rounding.[16] The Constitution requires a representative apportionment founded on the federal system.[17] In a federal system, a state receives seats according to

11. Balinski & Young have argued that there is an impossible tradeoff between "maintaining quota" and "avoiding paradoxes." My method solves this impossible problem by achieving the previously impossible: maintaining "quota" and avoiding "paradoxes." *See infra* Part IV and accompanying text.

12. U.S. CONST. art. I, § 2, cl. 3.

13. Zechariah Chafee, Jr., *Congressional Apportionment,* 42 HARV. L. REV. 1015, 1015-18 (1929) (demonstrating the failure to apportion is unconstitutional, but acknowledging that this had not been challenged in court).

14. *See* BALINSKI & YOUNG, *supra* note 2, at 51.

15. *See* Montana v. Dep't of Commerce, 775 F. Supp. 1358, 1362 (D. Mont. 1991), *rev'd*, 503 U.S. 442 (1992) ("No state has heretofore turned to the judicial branch to challenge the method employed by Congress to apportion representatives among the several states. This case therefore raises an issue of first impression.").

16. *See* Paul H. Edelman & Suzanna Sherry, *Pick a Number, Any Number: State Representation in Congress After the 2000 Census*, 90 CAL. L. REV. 211, 212 (2002).

17. *See id.* at 211.

its population.[18] Allocating seats according to population seems simple: an apportionment method should proportionally allocate seats to the states according to the states' respective numbers.[19] This method is problematic, however, because an apportionment will invariably involve fractions.[20] The various apportionment methods provide different ways to accommodate the fractions.[21]

There are six methods that have been used, or discussed, by Congress. The methods are colloquially named after the person who first proposed the method: Alexander Hamilton (Hamilton method), Thomas Jefferson (Jefferson method), Daniel Webster (Webster method), Joseph Hill (Hill method), James Dean (Dean method), and John Quincy Adams (Adams method).[22] In addition to the aforementioned names, the methods have more technical, mathematical names.[23] Throughout this article I will refer to the methods by their colloquial, non-mathematical names.

This section introduces the methods, explains how the methods work, and should be accessible by the average non-mathematician.[24] The apportionment methods are generally divided into two main categories: the Hamilton method and the divisor methods.[25] For clarity in explanation, I have sub-divided the divisor methods into two separate subcategories that I term: "rounding divisor methods" and "mean divisor methods."[26]

1. Hamilton Method

The Hamilton method is mathematically known as the "method of largest remainders,"[27] and is the only method that is fundamentally different from the

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18. *Id.*

19. *Id.*

20. *Id.* at 212.

21. *See* Edelbman & Sherry, *supra* note 16, at 212.

22. Paul H. Edelman, *Getting the Math Right: Why California Has Too Many Seats in the House of Representatives*, 59 VAND. L. REV. 297, 312-14 (2006); *see also* Efton Park, *The Mathematics of Apportionment*, 7 U. CHI. L. SCH. ROUNDTABLE 227, 228 (2000). The Adams and Dean methods have been discussed by Congress but have never been used.

23. *See* Note, *Apportionment of the House of Representatives*, 58 YALE L.J. 1360, 1369-71 (1949) (describing the mathematical names).

24. This article is the first legal article to demonstrate how the various methods work by referencing the 1792 apportionment. Although some of the methods were not in existence in 1792, the analysis is more easily understood using a simplistic model, which the 1792 apportionment provides. *See* Edelman, *supra* note 20, at 312-14 (providing a general mathematic description of the methods); Park, *supra* note 20 at 228-32.

25. *See* Edelman, *supra* note 22, at 313.

26. Current literature does not typically use these terms, but I find they better demonstrate the differences among the divisor methods.

27. BALINSKI & YOUNG, *supra* note 2, at 17.

divisor methods.[28] The Hamilton method works by first choosing the size of the House and then assigning each state its "fair share"[29] rounded down to the nearest integer.[30] For instance in 1791, Virginia's population was 630,560, which constituted 17.44% of the population.[31] The Constitution suggests that Virginia should receive 17.44% of the representatives or, in a House of 105, 18.31 representatives.[32] Under the Hamilton method, all the states' fair shares are rounded down to the nearest whole number.[33] In this case, Virginia's share rounds to eighteen representatives. Inevitably, this leaves a surplus of remaining representatives.[34] The Hamilton method distributes the remaining representatives to the states that are the "most deserving."[35]

Examples provide the easiest way to understand the various methods. For simplicity, I will use the 1790 apportionment because it involves the least number of states and apportions the smallest House. The 1790 Apportionment numbers appear in Table I.[36]

Table I

28. Edelman, *supra* note 22, at 313.

29. *See* BALINSKI & YOUNG, *supra* note 2, at 14.

30. Edelman, *supra* note 22, at 312.

31. *See* BALINSKI & YOUNG, *supra* note 2, at 11, tbl. 3.1.

32. *See id.* at 14, tbl. 3.4. Thus, Virginia's "fair share" is 18.31 representatives. The Constitution requires apportionment according to the respective numbers, thus the idea of proportionality is implicit in the Constitution. *See* Chafee, *supra* note 13, at 1023.

33. Edelman, *supra* note 22, at 312.

34. *See* BALINSKI & YOUNG, *supra* note 2, at 16-17.

35. "Most deserving" is determined by which state has the largest remainder. Representatives are then apportioned according to the largest remainders until all the seats are allocated. *See* BALINSKI & YOUNG, *supra* note 2, at 17.

36. All tables are adapted from BALINSKI & YOUNG, *supra* note 2, at 158, App. B 1790 Congressional Allocations for House Size, 105.

State	Population	Quota	Rounded Quota	Remainder	Hamilton
Virginia	630,560	18.310	18	0.310	18
Massachusetts	475,327	13.803	13	0.803	14
Pennsylvania	432,879	12.570	12	0.570	13
North Carolina	353,523	10.266	10	0.266	10
New York	331,589	9.629	9	0.629	10
Maryland	278,514	8.088	8	0.088	8
Connecticut	236,841	6.877	6	0.877	7
South Carolina	206,236	5.989	5	0.989	6
New Jersey	179,570	5.214	5	0.214	5
New Hampshire	141,822	4.118	4	0.118	4
Vermont	85,533	2.484	2	0.484	2
Georgia	70,835	2.057	2	0.057	2
Kentucky	68,705	1.995	1	0.995	2
Rhode Island	68,446	1.988	1	0.988	2
Delaware	55,540	1.613	1	0.613	2

Under the Hamilton method, the exact quotas are rounded down.[37] As demonstrated from Table I (fourth column), rounding all the representatives down to the nearest whole number allocates the first ninety-seven representatives. The 1790 House was fixed at 105 representatives[38]; thus, the eight "most deserving" states, or the states with the largest remainders, receive the final eight representatives.[39] Accordingly, Kentucky (.995), South Carolina (.989), Rhode Island (.988), Connecticut (.877), Massachusetts (.803), New York (.629), Delaware (.613), and Pennsylvania (.570) would all receive an additional seat because they have the eight largest remainders.

2. "Rounding Divisor Methods"

The "rounding divisor methods" include the Webster, Adams, and Jefferson methods.[40] All divisor methods function by first finding some ratio or "divisor."[41] This divisor is then used to obtain quotients, which are calculated

37. Edelman, *supra* note 22, at 312. As a reminder, "exact quota" is calculated by dividing the state's population by the nation's population and then multiplying that number by the house size. For instance, Virginia's exact quota is calculated by (630,560/3,615,920) X 105 = 18.310, Virginia is then allocated 18 representatives (Virginia's quota rounded down).

38. *See* BALINSKI & YOUNG, *supra* note 2, at 13.

39. *See id.* at 17 (citing HAROLD C. SYRETT, THE PAPERS OF ALEXANDER HAMILTON 226-30 (1966)).

40. *See id.* at 60.

41. *Id.* at 61. The divisor is determined using iterations until a divisor that properly apportions the states is selected. "[C]hoose as a target some ratio of population to representatives, and then divide this ration or 'divisor' x into the populations of the states to obtain quotients." *Id.* at 61. Thus, there is no magic

by dividing the state's population by the pre-determined divisor.[42] For instance, if the divisor was thirty-three and State A had a population of 100, the quotient would be 33.33. The methods differ in how they round the quotients.[43] The Jefferson method rounds *down* and drops all fractions;[44] thus, in the previous example, Jefferson apportions State A thirty-three representatives. Adams uses the opposite rounding technique and rounds all the fractions *up* to the nearest whole number;[45] therefore, Adams apportions State A thirty-four representatives. The Webster method uses traditional rounding to determine if a state should receive an additional representative:[46] if the remainder is greater than or equal to .5, Webster rounds up, if less than .5, Webster rounds down. Using the simplified example, State A receives thirty-three representatives because the .33 fraction is less than .5.

Again, the various methods are most easily understood by looking at an example. The 1790 apportionment was based on the Jefferson method and used the divisor 33,000.[47] Table II demonstrates how each method would apportion a House of 105 representatives.[48]

Table II[49]

formula to determine the proper divisor.

42. BALINSKI & YOUNG, *supra* note 2, at 61.

43. *Id.*

44. *Id.*

45. *Id.*

46. *Id.* at 61.

47. BALINSKI & YOUNG, *supra* note 2, at 21.

48. This demonstration seems more intuitive to understand how the apportionment methods function today than merely demonstrating how the methods would have apportioned using the 33,000 divisor.

49. *Id.* at 158, App. B 1790 Congressional Allocations for House Size 105 (using only the State and population information of the 1790 Congressional Allocations for House Size); *see also supra* note 46 and accompanying text. Columns C, E, and G provide the quotient for each method based on the divisor. Columns D, F, and H then show the representative apportionments for each of the rounding divisor methods.

Virginia	630,560	19.11	19	18.277	18	17.419	18
Massachusetts	475,327	14.40	14	13.778	14	13.131	14
Pennsylvania	432,879	13.12	13	12.547	13	11.958	12
North Carolina	353,523	10.71	10	10.247	10	9.766	10
New York	331,589	10.05	10	9.611	10	9.160	10
Maryland	278,514	8.44	8	8.073	8	7.694	8
Connecticut	236,841	7.18	7	6.865	7	6.543	7
South Carolina	206,236	6.25	6	5.978	6	5.697	6
New Jersey	179,570	5.44	5	5.205	5	4.960	5
New Hampshire	141,822	4.30	4	4.111	4	3.918	4
Vermont	85,533	2.59	2	2.479	2	2.363	3
Georgia	70,835	2.15	2	2.053	2	1.957	2
Kentucky	68,705	2.08	2	1.991	2	1.898	2
Rhode Island	68,446	2.07	2	1.984	2	1.891	2
Delaware	55,540	1.68	1	1.610	2	1.534	2
Totals			105		105		105

As demonstrated by the table, each method uses a different divisor (33,000 for Jefferson, 34,500 for Webster, and 36,200 for Adams)[50] to apportion 105 representatives. Columns D, F, and H show how the quotients are rounded. Jefferson rounds all the quotients down, Webster rounds up if the remainder is greater than .5 and rounds down if the remainder is less than .5, and Adams rounds all quotients up.[51]

3. "Mean Divisor Methods"

The "mean divisor methods" include the Dean and Hill methods and are slightly more complicated than the "rounding divisor methods."[52] The Dean and Hill methods use algebraically complex formulas based on harmonic or geometric means respectively.[53] In both methods, if the quotient's remainder

50. Other divisors could be used that would provide the same result. However, I have only included one divisor to demonstrate how the various methods work.

51. BALINSKI & YOUNG, *supra* note 2, at 61. For discussion as to the merits of each method *see infra* Part III and accompanying text.

52. *See id.* at 61-2.

53. *See id.* ("The harmonic mean of two numbers is their *product* divided by their *average*."). For instance, to calculate the harmonic mean of 1 and 2. *Id*. First, 1 is multiplied by 2, which equals 2. Two (the product) is then divided by 1.5 (the average). *See id.* at 62. 2/1.5 = 1.33. *See id.* The harmonic mean of 1 and 2 is 1.33. BALINSKI & YOUNG, *supra* note 2, at 61-62. The "geometric mean" is calculated by taking the square root of the product of two numbers. *Id.* Thus to calculate the geometric mean of 1 and 2, 1 is multiplied by 2, which equals 2. *See id.* Then take the square root of 2 = 1.414. *Id.* The way the Dean and Hill method works is that if the "fair share" is greater than the harmonic or geometric means the quota is rounded up. *See* Edelman, *supra* note 2, at 313 n.96. If the "fair share" is below the harmonic or geometric means the quota is rounded down. *See id.*

exceeds the mean, the quotient is rounded up.[54] If the quotient's remainder is less than the mean, the quotient is rounded down.[55]

Table III[56]

State	Population	Hill & Dean Divisor	Geometric Mean	Harmonic Mean	Hill Apportion	Dean Apportion
		34,800				
Virginia	630,560	18.120	18.493	18.486	18	18
Massachusetts	475,327	13.659	13.491	13.481	14	14
Pennsylvania	432,879	12.439	12.490	12.480	12	12
North Carolina	353,523	10.159	10.488	10.476	10	10
New York	331,589	9.528	9.487	9.474	10	10
Maryland	278,514	8.003	8.485	8.471	8	8
Connecticut	236,841	6.806	6.481	6.462	7	7
South Carolina	206,236	5.926	5.477	5.455	6	6
New Jersey	179,570	5.160	5.477	5.455	5	5
New Hampshire	141,822	4.075	4.472	4.444	4	4
Vermont	85,533	2.458	2.449	2.400	3	3
Georgia	70,835	2.035	2.449	2.400	2	2
Kentucky	68,705	1.974	1.414	1.333	2	2
Rhode Island	68,446	1.967	1.414	1.333	2	2
Delaware	55,540	1.596	1.414	1.333	2	2
Totals					105	105

In the 1790 example, the Hill and Dean methods use the same divisor and result in the same apportionment.[57] However, Table I instructively shows how to calculate the Geometric and Harmonic means.[58] Also, Table I demonstrates that the Geometric mean is *always* higher than the Harmonic mean.

B. Historical Background

Congress has used the Hamilton, Jefferson, Webster, and Hill methods at

54. *See id.*

55. *See* Edelman, *supra* note 22, at 313 n.96. If the quotient equals the mean, the quotient is also rounded up. *See id.*

56. *See* BALINSKI & YOUNG, *supra* note 2, at 158, App. B 1790 Congressional Allocations for House Size 105. In this example, the Hill and Dean methods both used the same divisor. This is not always the case. *See id.* at 62. Typically the Hill and Dean methods will use different divisors. *See id.* This table is not as instructive, because the apportionments for Dean and Hill are the same. However, if for instance Delaware had a quotient of 1.400, then Hill method it would receive one representative and under Dean it would have received two representatives.

57. *See id.*

58. *See* BALINSKI & YOUNG, *supra* note 2, at 48-49 (giving an example where the Dean and Hill methods differ).

various points in the Nation's history.[59] This section provides a brief history of apportionment in the United States and discusses several previous apportionment battles.

The 1790 apportionment debate demonstrates the complexity, depth, and importance of the issue. As with much of the history of the Founding Fathers, the debate engaged several prominent figures, namely: James Madison, Alexander Hamilton, Thomas Jefferson, and George Washington.[60]

The Federalists, led by Alexander Hamilton, and the Jeffersonians, led by Thomas Jefferson, disagreed on both the size of the House and the method for apportioning the House.[61] The Federalists argued that the House should be fixed at 120 representatives and should be apportioned using the Hamilton method.[62] Jeffersonians argued that the Constitution did not require a fixed House, but envisioned a House that grew proportionately with the population; Jeffersonians, unsurprisingly, advocated for the Jefferson method.[63] Jeffersonians also argued that permanently fixing the House size would vest too much power in too few hands and create an "unsafe depository of public trust."[64] Jeffersonians claimed that "[a] larger House would not be 'so easily corrupted as a small body[.]'"[65] After considerable debate,[66] Congress eventually compromised and passed the March 6th Apportionment Act of 1792.[67] This proposal apportioned 120 representatives according to the Hamilton method.[68]

The annals of American history record the March 6th Act, not because it set the apportionment standard, but because Washington used his first veto to strike down the Act.[69] Even though the March 6th Act was purported as a compromise between the Federalists and Jeffersonians, Jefferson did not fully

59. *See* Park, *supra* note 22.

60. *See* BALINSKI & YOUNG, *supra* note 2, at 13-22. Other persons played significant roles in shaping the discussion but these four provided the rallying points for the various discussions. *See id.*

61. *See id.* In many ways, this can actually be seen not as a new debate, but a continuation of the debates surrounding ratification of the Constitutional Convention. *See generally* Chafee, *supra* note 13, at 1020-25 (arguing that the debates after the Constitutional Convention never stopped).

62. *See* BALINKSI & YOUNG, *supra* note 2, at 15-17. Hamilton's position was that the Constitution imposed a requirement that representatives cannot exceed one per 30,000 persons. *Id.* at 15. Thus, Hamilton argued that because the Nation had a population of approximately 3.6 million persons, the House should be fixed at 120. *Id.*

63. *See id.* at 18 (citing THOMAS JEFFERSON, *Opinion on the Bill Apportioning Representation*, *in* 6 THE WORKS OF THOMAS JEFFERSON 460, 463-64, 465-66 (Paul L. Ford ed., 1904)).

64. *See* BALINSKI & YOUNG, *supra* note 2, at 13.

65. *Id.* (quoting 3 Debates and Proceedings in the Congress of the United States (1849) (speech of Rep. Giles, November 11, 1791)).

66. *See* BALINSKI & YOUNG, *supra* note 2, at 13-17 (giving the full description of the struggle).

67. JOURNAL OF THE SENATE 1789-1793, 2D CONG. 404-06 (March 6, 1792).

68. *See* BALINSKI & YOUNG, *supra* note 2, at 16-17.

69. *See id.* at 20-21.

support the Act.[70] While the March 6th Act awaited Washington's approval, both Hamilton and Jefferson privately convened with Washington.[71] Hamilton, supporting the Act, argued that his method "resulted from a logical process."[72] He also argued that his method was easily administrated and replicated.[73] Jefferson, fearing that the Act could permanently fix the House at 120 representatives, argued that his method was more easily administrable.[74]

In addition to the merits of his method, Jefferson argued that the March 6th Act was unconstitutional.[75] Jefferson argued that a House of 120 representatives exceeded the constitutional requirement that Representatives shall not exceed one for every thirty thousand.[76]

Washington agreed with Jefferson. In written explanation accompanying the veto, Washington explained: "'[t]he Constitution has also provided that the number of Representatives shall not exceed one for every thirty thousand.'"[77] Washington argued that because it was possible, under a 120 member House, that individual representatives may have constituencies with less than 30,000 persons, the bill was unconstitutional.[78] Undeterred, Congress promptly passed, and the President signed, the Apportionment Act of March 14, 1972, which provided for a 105 member House using the Jefferson method.[79]

As years passed, support waned for the Jefferson method and it was eventually rejected. Evidence began to demonstrate that the Jefferson method systematically favored the larger states over the smaller states.[80] Acknowledging that a method that systematically favors a certain type of state does not apportion according to the states' respective numbers, Congress

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70. *See id.* at 21-22 (citing JEFFERSON, *supra* note 63, at 469).

71. *See id.* at 16-20.

72. *Id.* at 16.

73. BALINSKI & YOUNG, *supra* note 2, at 16.

74. *See id.* at 18.

75. *See id.* at 15.

76. *See id.*; *see also* DAVID P. CURRIE, THE CONSTITUTION IN CONGRESS: THE FEDERALIST PERIOD 1789-1801 132-33 n.24 (1997). The Constitution explicitly states that representatives cannot exceed one per 30,000. *See* BALINSKI & YOUNG, *supra* note 2, at 15. This, however, can be interpreted in one of two ways. *See id.* at 15, 21. Hamilton argued that 30,000 referenced the national average. *Id.* at 15. For instance, if the population was 3.6 million, then the House could permissibly include 120 members. *Id.* However, an alternative view is that no individual representative could represent less than 30,000 persons. *Id.* at 21. The second approach, ultimately persuaded Washington. *Id.*

77. BALINSKI & YOUNG, *supra* note 2, at 15 (quoting 32 THE WRITINGS OF GEORGE WASHINGTON FROM THE ORIGINAL MANUSCRIPT SOURCES, 1745-1799 16-17 (John C. Fitzpatrick ed., Government Printing Office 1931-1944) [hereinafter Washington]).

78. BALINSKI & YOUNG, *supra* note 2, at 21 (citing WASHINGTON, *supra* note 75, at 16-17).

79. *Id.* at 21. Although Jefferson wanted a larger House, he was willing to accept a smaller House if the smaller House used his method. *See id.* at 19. Additionally, to obtain 105 members, Congress set the divisor at 33,000. *See id.*

80. *See infra* Part IV.D and accompanying text.

abandoned the Jefferson method in 1830.[81] From 1830 to 1910, Congress used both the Webster and Hamilton methods, and chose the method ad hoc.[82]

This ex post, ad hoc apportionment decision eventually became problematic. After World War I, America experienced expansive industrialization and urbanization.[83] The 1920 census showed that the population had increased by fourteen million people;[84] however, despite this intense population growth, the rural states' population declined by five million.[85] Many prominent members of Congress understood that if they reapportioned according to the 1920 census, their states would lose power and, more importantly, the Congressmen could lose their seats.[86] Thus, the House was not reapportioned after the 1920 census.[87]

This failure led to an important apportionment improvement. After nine years of intense debates, Congress passed the Reapportionment Act of 1929.[88] The 1929 Act provided for an automatic reapportionment beginning with the 1930 census.[89] The Act did not specify an apportionment method, but it automatically applied the most recently used method.[90]

Hoping to resolve the apportionment debate, Congress also commissioned the National Academy of Sciences (NAS) to study the various methods.[91] The NAS study analyzed the Adams, Dean, Hill, Webster, and Jefferson methods,[92]

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81. Chafee, *supra* note 13, at 1022.

82. *Id.* at 1022-27. The Hamilton method was rebadged under the auspices of Samuel F. Vinton's name, but the method was indistinguishable from the Hamilton method and I will refer to it as the Hamilton method for simplicity and clarification. *See* BALINSKI & YOUNG, *supra* note 2, at 37.

83. BALINSKI & YOUNG, *supra* note 2, at 51.

84. *Id.*

85. *Id.*

86. *See id.*

87. *Id.* Although the failure to apportion is prima facie unconstitutional, the apportionment failure was never adjudicated. *See* Chafee, *supra* note 13, at 1039 n.60 (relying on the necessary and proper clause of the Constitution). At the time, many thought the Court would see this as a non-justiciable issue. *See id.* at 1019. However, the Court has subsequently held that apportionment questions lie outside the political thicket. *See* Dep't of Commerce, 503 U.S. at 459.

88. Reapportionment Act of 1929, Pub. L. No. 71-13, 46 Stat. 26 (codified at 2 U.S.C. § 2a (1996)). For a discussion on the debates *see* BALINSKI & YOUNG, *supra* note 2, at 52-57.

89. Reapportionment Act of 1929, Pub. L. No. 71-13, 46 Stat. 26 (codified at 2 U.S. C. §2a (1996)).

90. BALINSKI & YOUNG, *supra* note 2, at 57 (The act provided that the method could be modified by Congress, but stipulated that if Congress could not agree, the reapportionment would be based on the most recently used method.).

91. Lawrence R. Ernst, *Apportionment Methods for the House of Representatives and the Court Challenges*, 40 MGMT. SCI. 1207, 1210 (1994).

92. *See id.* at 1207-08, 1210. The NAS only looked at the divisor numbers and did not compare the Hamilton method because it had been deemed unpalatable. *See id*. The Adams and Dean methods are considered possible apportionment alternatives but neither has ever been used in the United States. *See id.* at 1207, 1209.

and it concluded that the Hill method was preferable.[93] Despite NAS's findings, however, the 1930 House was apportioned according to the Webster method.[94]

Had it not been for political influences, presumably, the Webster method would still be used today.[95] However, the Webster and Hill methods differed for two states after the 1940 census: Arkansas and Michigan.[96] Arkansas had been a safe Democratic seat, whereas Michigan was traditionally Republican.[97] If the House was apportioned according to Webster, the Republicans would have gained an extra seat.[98] However, if Congress could legislate for the Hill method, the Democrats would have gained a seat.[99] A bill requiring the Hill method was quickly proposed.[100] Every Democrat, except those from Michigan, voted in favor of the bill, and every Republican voted against it.[101] On November 15, 1941, Franklin Delano Roosevelt signed Public Law 291 providing for an automatic apportionment based on the Hill method.[102] The Hill method has now been entrenched in apportionment history for close to seventy years.[103]

III. APPORTIONMENT CRITERIA

Although apportionment decisions have not always rested on the merits of the method, there are legitimate arguments supporting particular methods. This section introduces the various criteria used to analyze the apportionment methods. The primary criteria used by scholars are quota, paradoxes, bias, and one person, one vote.[104] Although Congress and the Court can consider one person, one vote and bias, the Constitution only requires that an apportionment

93. Ernst, *supra* note 91, at 1207, 1210-11. Balinski & Young have disputed the prudence of some of the NAS's methods, but irrespective of their current criticisms, the NAS report, at the time, was undisputed. For a full discussion see BALINSKI & YOUNG, *supra* note 2, at 77-78, 105.

94. *See* Ernst, *supra* note 91, at 1207, 1210-11. Although Congress used the Webster method, the Webster and Hill methods both provided for the same apportionment, so it did not truly matter which apportionment method was used. *See* BALINSKI & YOUNG, *supra* note 2, at 57.

95. It seems unlikely that the NAS report would have persuaded Congress in subsequent apportionments if it didn't persuade Congress in 1930.

96. BALINSKI & YOUNG, *supra* note 2, at 57.

97. *Id.* at 58.

98. *See id.* at 58, tbl. 6.3.

99. *See id.*

100. *See id.*

101. BALINSKI & YOUNG, *supra* note 2, at 58, tbl. 6.3.

102. *Id.* (citing Pub. L. No. 71-13, 46 Stat. 26 (codified at 2 U.S.C. §2a (1996)).

103. *See* 2 U.S.C. § 2a (2009). The term "equal proportions" is the mathematical name for the Hill method. *See* BALINSKI & YOUNG, *supra* note 2, at 57.

104. *See id.* at 71-86.

allocate representatives according to the states' respective numbers.[105] To this end, there are two fundamental concerns: proportionality[106] and representativeness.[107] To achieve this constitutional standard, an apportionment method *must*: (1) maintain quota (allocate proportionally) and (2) avoid paradoxes (allocate representatively).[108] Most scholars agree that a "perfect method" does not exist because it has heretofore been impossible to maintain quota and avoid paradoxes.[109] This section explains why the Constitution requires a "perfect method" that satisfies these two criteria.

A. Maintaining Quota[110]

The term "quota" refers to the number of representatives to which a state is entitled and is synonymous with proportionality. For instance, in 2000, California's population was 33,930,798.[111] The Nation's population in 2000 was 281,424,177.[112] Thus, California constituted 12.06% of the national population.[113] Under the idea of proportional representation, California should receive 12.06% of the 435 congressional seats or 52.46 seats.[114] California's "exact quota" is therefore 52.46. Because representatives must be apportioned in whole numbers, it is impossible to apportion according to "exact quota."[115] Quota is "maintained" when the number of representatives equals the "exact quota" rounded up or down to the nearest whole number. Therefore, quota is "maintained" when California receives fifty-two or fifty-three representatives.[116] If California were to receive any number of representatives other than fifty-two or fifty-three, quota would be "violated."

The Constitution implicitly requires that a method maintains quota.

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105. *Id.* at 31.

106. Indeed, proportionality is implicit in the definition of apportionment. Apportion means: "To divide and assign in just proportion." AMERICAN DICTIONARY OF THE ENGLISH LANGUAGE (1830).

107. The Constitution states that "Representatives . . . shall be apportioned." U.S. CONST. art. I, § 2, cl. 3. Implicit in representatives is representativeness.

108. *See* BALINSKI & YOUNG, *supra* note 2, at 79.

109. *See id.* at 85.

110. When I discuss meeting quota, implicit in the discussion is the notion that all states must receive at least 1 representative. Having at least 1 representative always adheres to quota. Even if a state had an entitlement to .005 representatives, the state's quota would be 0 and 1. Thus, when 1 representative is apportioned, quota is still met.

111. *Id.* at 179, App. B 2000 Congressional Allocations for House Size, 435.

112. *Id.* at 180, App. B 2000 Congressional Allocations for House Size, 435.

113. The mathematical calculation is: 33,930,798/281,424,177 = 12.06%. *See* Edelman, *supra* note 22, at 311.

114. The mathematical calculation is: 435 X 12.06% = 52.46. *Id.*

115. It is impossible for California to receive 52.46 representatives. Representatives must be apportioned in integers and that is why exact quota can never be met.

116. A method maintains quota when all states are apportioned according to their quotas.

"Representatives . . . shall be apportioned among the several States . . . according to their respective Numbers."[117] Quota is the measurement that tests how well an apportionment method adheres to proportionality. I will demonstrate that an apportionment scheme that violates quota violates the constitutional requirement for proportionality.

When a method violates quota, it does not apportion representatives according to the states' respective numbers. For example, California has claim to 52.46 representatives. No one would dispute that a method that provided California with two or 200 representatives would clearly not be apportioning constitutionally. If apportioning 52.46 representatives is impossible, and apportioning California two or 200 representatives is clearly impermissible, where should the line be drawn to ensure that California is apportioned representatives according to its respective numbers?

Answering the question, Jefferson stated, "'I answer, then, that taxes must be divided *exactly* and representatives *as nearly* as the *nearest*, *ratio* will admit.'"[118] Echoing this sentiment, Daniel Webster claimed, "'[t]he Constitution must be understood . . . as requiring of Congress to make the apportionment of representatives among the several states according to their respective numbers, *as near as may be*.'"[119] The founding fathers seemed to agree that only a method that maintains quota ensures a constitutional apportionment.

Indeed, this seems to be one of the few areas where federalists and anti-federalists agreed. Federalist 54 states: "It is not contended that the number of people in each State ought not to be the standard for regulating the proportion of those who are to represent the people of each State."[120] Or, stated more simply, to ensure proportionality, quota must be maintained. The anti-federalists seemed to generally agree. Although dissatisfied with the verbosity of the language, Anti-Federalist Brutus 3 states: "What a strange and unnecessary accumulation of words are here used to conceal from the public eye, what might have been expressed in the following concise manner. Representatives are to be proportioned among the states respectively[.]"[121]

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117. U.S. CONST. art. I, § 2, cl. 3.

118. BALINSKI & YOUNG, *supra* note 2, at 18 (quoting JEFFERSON, *supra* note 61, at 463-64) (emphasis in original). Indeed, Jefferson, whose method most egregiously violates quota, appears to support a constitutional requirement for quota.

119. Chaffe, *supra* note 13, at 1023 (quoting I STORY, CONSTITUTION 504N) (emphasis in original) (The quoted material may more easily be found in the following source: 3 The Works of Daniel Webster 379 (18th ed., Little, Brown, and Company 1881.).

120. THE FEDERALIST NO. 275 (Alexander Hamilton, James Madison & John Jay) (Buccaneer Books ed., 1992).

121. Brutus, *Essays of Brutus III*, *in* 2 THE COMPLETE ANTI-FEDERALIST 377, 378 (Herbert J. Storing ed., 1981).

Thus federalists and anti-federalists implicitly agreed on the constitutionality of maintaining quota.

Reviewing numerous historical records, Professor David Currie concludes that a method that violates quota "cannot comfortably be reconciled with the constitutional requirement that states be represented in the House according to their respective numbers."[122] Thus, both the plain language and historical record demonstrate that the Constitution requires an apportionment that maintains quota.

1. Arguments Against a Constitutional Quota Requirement

Some may argue that maintaining quota is not constitutionally mandated. Those arguing against quota will probably point to two arguments: (1) reflecting relative changes is more important than maintaining quota;[123] and (2) historically, quota has been violated. Although these are both tenable arguments, neither is persuasive.

Balinski and Young suggest that representing relative changes is more important than maintaining quota.[124] "On the whole, achieving apportionments that accurately reflect relative changes in populations seems more important than always staying within the quota."[125] However, this proposal rests on the flawed assumption that it is impossible to maintain quota and avoid paradoxes. Disdaining the Hamilton method, Balinski & Young argue that the possibility of violating quota must be secondary to accurately reflecting population changes.[126] The fear is that if quota is an absolute requirement, then all the divisor methods, which are "superior" to the Hamilton method, would be unconstitutional. Balinski and Young argue that the proportionality requirement (maintaining quota) is secondary to the representative requirement (accurately reflecting population changes).[127] However, the constitutionality of reflecting population changes does not vitiate a requirement to maintain quota.

The second argument against an implicit constitutional quota requirement relies on early apportionment precedent where quota was violated.[128] Using the Jefferson method, the 1820 and 1830 apportionments both violated quota.[129] Thus, some may argue that because apportionments have previously violated

122. *See,* CURRIE, *supra* note 76, at 135.

123. BALINSKI & YOUNG, *supra* note 2, at 81.

124. *Id.*

125. *Id.*

126. *See id.*

127. *Id.*

128. *See* BALINSKI & YOUNG, *supra* note 2, at 158-60, App. B.

129. *Id.* at 159-60, App. 1820 Congressional Allocations for House Size, 213, 1830 Congressional Allocations for House Size, 240.

quota, there is no longer a constitutional requirement to maintain quota.

However, this precedential argument suffers from two flaws: (1) violating quota ultimately led to the rejection of the Jefferson method;[130] and (2) Congressional action that violates the Constitution does not subsequently legitimize its action.[131] Congress rejected the Jefferson method because the method violated quota.[132] Thus, once Congress perceived the quota precedent problem, it affirmatively acted to rectify it.

Additionally, even if Congress had not rejected the Jefferson method for failing quota, congressional inaction would not have constitutionalized the Jefferson method. The Constitution unequivocally requires a decennial apportionment.[133] "The actual Enumeration shall be made within three Years after the first Meeting of the Congress of the United States, and within every subsequent Term of ten Years[.]"[134] Despite this express constitutional requirement, Congress did not apportion itself after the 1920 census.[135] This was a facial constitutional violation; however, Congress's inaction did not change the decennial apportionment requirement. Analogously, Congress's prior use of an apportionment scheme that violates quota does not modify the constitutional quota requirement.

2. Measuring the Current Methods According to Quota

Certain methods always violate quota and these methods are therefore patently unconstitutional. The Jefferson and Adams methods "can be expected to violate quota virtually all of the time."[136] These methods do not allocate representatives according to the states' respective numbers.[137] According to the 2000 census, California has a quota of 52.46.[138] The Adams method would apportion California fifty representatives, and the Jefferson method would apportion fifty-five representatives.[139] Both apportionments violate quota and

130. BALINSKI & YOUNG, *supra* note 2, at 42.

131. The argument follows the same logic used in post-Lincoln habeas corpus cases. Simply because Lincoln suspended habeas corpus in the past and was not challenged in court does not mean that the President can suspend habeas corpus. *See generally* Hamdi v. Rumsfeld, 542 U.S. 507 (2004).

132. *See supra* notes 50-52 and accompanying text.

133. U.S. CONST. art. I, § 2, cl. 3.

134. *Id.*

135. Chaffe, *supra* note 13, at 1015.

136. BALINSKI & YOUNG, *supra* note 2, at 81.

137. In the early days, Jefferson did not violate quota because the apportionment and states' populations were significantly smaller and less populous than today. As the House and populations increased, the Jefferson method became impermissible. *See id.* at 23.

138. *See supra* note 112 and accompanying text.

139. BALINSKI & YOUNG, *supra* note 2, at 179; Apr. 2, 2000 Congressional Allocations for House Size, 435.

are therefore unconstitutional.[140]

The four en vogue remaining methods (excluding the Jefferson and Adams methods which always violate quota) have different success maintaining quota. Hamilton is the only method that *always* maintains quota.[141] Of the divisor methods, the Webster method comes closest to maintaining quota, and some have commented that the chances are so improbable that it is almost impossible for Webster to violate quota.[142] "[T]he probability under present conditions [that Webster will violate quota] in the United States is only about [one] in 1,600 apportionments."[143] The "mean divisor methods" violate quota more frequently than Webster, but far less frequently than Adams or Jefferson.[144] The Dean method will violate quota approximately one in sixty-five apportionments, and the Hill method will violate quota approximately one in every 349 apportionments, or roughly five times as often as Webster.[145]

If quota is fundamental, only Hamilton meets the constitutional standard 100% of the time.[146] Webster, Hill, and Dean present viable alternatives only if means are taken to ensure they maintain quota.[147] However, Adams and Jefferson are constitutionally impermissible because they "virtually always" violate quota.[148]

B. Avoiding Paradoxes

The Hamilton method, which always meets quota, is the only method that suffers from the unique problems of the "Alabama," "Population," and "New States" paradoxes.[149] Although not everyone agrees that quota is fundamental, most scholars agree that there is a constitutional requirement that a method

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140. There is a question whether an apportionment method that possibly violates quota is unconstitutional, or if the method must violate quota before it is unconstitutional. I would advocate that methods should only be declared unconstitutional in an "as applied" challenge. If the method violates quota for a particular apportionment, the method should be declared unconstitutional for that particular apportionment. If the method can be used in a subsequent year and still maintain quota, the method should be permitted even though it has violated quota in the past.

141. BALINSKI & YOUNG, *supra* note 2, at 61.

142. *See id.* at 81.

143. *Id.* As explained in the preceding paragraph, of the three "rounding divisor methods" the Webster method is the only one that comes close to maintaining quota.

144. *See id.* at 81, tbl. 10.3.

145. *Id.*

146. *See* BALINSKI & YOUNG, *supra* note 2, at 60-61.

147. *See id.* at 60-63.

148. *Id.* at 81.

149. *Id.* at 42-45 (for a full discussion on paradoxes see chapters 4 and 8.). Note that the divisor methods do not suffer from any of the paradoxes herein described. *Id.* at 67. Also note that any variation of the Hamilton method will also lead to paradoxes. *Id.* Thus, if paradoxes are to be avoided, only divisor methods are available.

must avoid paradoxes to apportion "representatively."[150]

1. Alabama Paradox

The Alabama paradox describes a phenomenon that occurs when the House increases in size and a particular state loses representatives.[151] In 1880, C. W. Seaton, chief clerk of the Census Office, noted an interesting phenomenon as he calculated various House proposals.[152] For the 1880 census, he noted that when the House was fixed at 299, Alabama received eight representatives; however, if the House increased to 300, Alabama would lose a seat and only receive seven representatives.[153] In his opinion, "[s]uch a result as this is to me conclusive proof that the process employed in obtaining it is defective, and that it does not in fact 'apportion Representatives among the States according to their respective numbers.'"[154] Professor Efton Park argues that it is axiomatic that an apportionment system must not suffer from the "Alabama paradox."[155]

The Alabama paradox eventually led to the Hamilton method's demise. In 1901, Congress deliberately chose to use the Webster method and explicitly chose not to use the Hamilton method because of the Alabama paradox.[156] Congress reasoned, "qualitatively Hamilton's method gave results that were contrary to common sense."[157]

2. Population and New States Paradoxes

The Population and New State paradoxes are similar to the Alabama paradox because they do not adequately reflect relative changes among the states. The Population paradox occurs when a state's representation increases

150. *See e.g.*, BALINSKI & YOUNG, *supra* note 2, at 84 (arguing that the "[t]he essence of fair representation is that the apportionment of seats should correctly reflect relative changes in the populations of states"); Chaffe, *supra* note 13, at 1027 (arguing that "it has been proved that there are only five known methods which offer a workable solution"); Park, *supra* note 22, at 233-34 (arguing that it is axiomatic that an apportionment method cannot demonstrate paradoxes); Note, *supra* note 15, at 1368 (arguing that "[s]uch paradoxes as these were the curse of early *haphazard* apportionment methods. They cannot occur in the modern methods which are the product of more incisive mathematical analysis[ ]") (emphasis added).

151. *See* BALINSKI & YOUNG, *supra* note 2, at 38-39.

152. *Id.* at 38.

153. *Id.* at 38 (see appendix A in this source for a mathematical proof of the Alabama Paradox).

154. *Id.* at 38 (quoting Letter to from C. W. Seaton to Congress *in* U.S. House, *Apportionment Among the Several States, House of Representatives,* 56th Cong., 2d Session (1900)).

155. *See* Park, *supra* note 22, at 233. Professor Park uses the mathematical term for the Alabama Paradox or "House Monotonicity."

156. BALINSKI & YOUNG, *supra* note 2, at 42.

157. *Id.*

relative to another even though its population decreased in relative terms.[158] By contrast, the New States paradox only occurs when a new state enters or leaves the Union.[159]

The Population paradox occurs more frequently than the New State paradox and presents an ostensibly greater problem.[160] As the population of State A shifts relative to State B, the representative apportionments should shift accordingly.[161] Unfortunately, the Hamilton method does not always adequately reflect these shifts.[162] For instance, in 1900, Virginia would receive ten seats and Maine would receive three.[163] If the House was reapportioned in 1901, again using the Hamilton method, Virginia would lose a seat to Maine (Virginia would have nine and Maine would have four).[164] This would occur even though in 1900 Virginia's population was 2.67 times as large as Maine, whereas in 1901 Virginia's population was 2.68 times as large.[165] Indeed, "No method can be considered acceptable . . . that forces one state to give up seats to another that has become proportionally smaller, *i.e.*, that suffers from the population paradox."[166]

The New States paradox only occurs when new states enter the Union.[167] Despite the unlikely probability, the New States paradox is the most intellectually troubling. An example presents the easiest way to understand the New States paradox. According to the 1900 census, the Nation's population was 74,562,608, the House had 386 members, and each member of the House represented approximately 193,167 persons.[168] In 1907, Oklahoma's population was approximately one million so it had a legitimate claim to five seats.[169] Adding Oklahoma increased the House to 391 members.[170] Intuitively, every state's representation should remain the same. However:

> Applied to 391 seats it gives Oklahoma 5 seats, Maine, 4, and New York 37. But with Oklahoma it apportions the original 386 seats

158. *Id.*

159. *Id.* at 43-44.

160. *Id.* The populations of states will invariably change relative to each other between different apportionment periods; by contrast new states are rarely admitted. BALINSKI & YOUNG, *supra* note 2, at 43-44.

161. BALINSKI & YOUNG, *supra* note 2, at 42.

162. *Id.*

163. *Id.* at 43.

164. *Id.*

165. *Id.*

166. BALINSKI & YOUNG, *supra* note 2, at 68.

167. *Id.* at 43.

168. *Id.*

169. *Id.*

170. *Id.*

> differently: New York gets 38 and Maine only 3. In other words when Oklahoma entered the Union with its fair share of seats, Hamilton's method would have forced New York to give up a seat to Maine, even though there was no change in the populations of New York and Maine or any of the other states.[171]
>
> It seems unreasonable that previously determined apportionments change because another state enters the Union.

"The essence of fair representation is that the apportionment of seats should correctly reflect relative changes in the populations of states[.]"[172] The Alabama, Population, and New States paradoxes do not accurately reflect relative population changes.[173] The Constitution requires a representative apportionment.[174] Thus, a method that permits the Alabama, New States, or Population paradox is unconstitutional because the method does not apportion representatives according to the states' respective numbers. Fortunately, the Hamilton method is the only method that suffers from the various paradoxes.[175]

C. One Person, One Vote Concerns

Some scholars have argued that the districting criterion of one person, one vote should also control apportionment.[176] Relying on *Wesberry, Reynolds*, and *Karcher* precedent, some scholars argue that "'a polestar of equal representation' . . . can guide the Court through the apportionment dilemma."[177] Proponents argue that because mathematical equality (one person, one vote) is required in the districting context, the same standard should apply in apportionment. However, this very argument was rejected by the Court in *U.S. Department of Commerce v. Montana* because the argument does not properly distinguish congressional apportionment from districting.[178]

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171. BALINSKI & YOUNG, *supra* note 2, at 43-44.

172. *Id.* at 84.

173. *Id.* at 42-44.

174. U.S. CONST. art. I, § 2, cl. 3.

175. *Id.* at 84. Additionally, all Hamilton derived methods will invariably violate these paradoxes as well. *Id.*

176. Edelman, *supra* note 22, at 320-21.

177. *Id.* at 320 (quoting *Dep't of Commerce*, 503 U.S. at 463).

178. In *U.S. Department of Commerce v. Montana*, the Court acknowledged that "[t]here is some force to the argument that the same historical insights that informed our construction of Article I, § 2, in the context of intrastate districting should apply here as well . . . . Yet it is by no means clear that the facts here establish a violation of the *Wesberry* standard." *Dep't of Commerce*, 503 U.S. at 461. The *Wesberry* standard has been held to a 10% deviation in the state districting context and a 0% deviation in the congressional districting context. *See* Edelman, *supra* note 22, at 303, 307 (citing *Karcher*, 462 U.S. at 734). In *Dep't of Commerce*, the deviations were in the magnitude of 45.5%. Thus, if that did not constitute a *Wesberry* violation it is difficult to imagine where a *Wesberry* violation would occur. It appears that the Court in acknowledging that

Moreover, arguments favoring mathematical equality in the apportionment context conflate different Article I, Section 2 standards. Article I, Section 2, Clause 1 controls districting. "The House of Representatives shall be composed of Members chosen every second Year by the *People* of the several States[.]"[179] "By the *People* of the several States"[180] has been interpreted to mean one person, one vote. However, Clause 3, not Clause 1, governs apportionment. "Representatives . . . shall be apportioned among the several *States* . . . according to *their* respective Numbers."[181]

Thus, Clauses 1 and 3 reference different entities. Clause 1 districting refers to "The People;"[182] whereas, Clause 3 apportionment refers to "The States."[183] While one person, one vote satisfies Clause 1, "one state one vote" would be a more appropriate Clause 3 standard.[184] The Clause 3 standard focuses on equality among the states, not the people within the states. Indeed, the requirement that each state has at least one representative can very well be said to accomplish the "one state one vote" criterion. Thus, the imposition of the Clause 1 districting standard need not apply to the Clause 3 apportionment standard.[185] As such, the Court correctly differentiated the two standards.[186]

The fact that one person, one vote is ignored for every non-districting federal electoral process further supports rejecting a one person, one vote apportionment requirement. For instance, the Senate blatantly violates the one person, one vote rule.[187] This electoral precedent minimizes the impact that one person, one vote should have on apportionment decisions.[188]

A final problem with applying a one person, one vote standard to apportionment is that the variations between states are so divergent that one person, one vote becomes so illusory that homage to the principle becomes insupportable. For instance, after the 2000 congressional apportionment,

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there may be *Wesberry* issues is merely paying lip service to the principle.

179. U.S. CONST. art. I, § 2, cl. 1. (emphasis added).

180. *Id.*

181. *Id.* at cl. 3. (emphasis added).

182. *See id.* at cl. 1.

183. *See id.* at cl. 3.

184. There is nothing in Clause Three that would suggest an analogous Clause One requirement for one person one vote. U.S. CONST. art. I, § 2, cl. 1, 3.

185. *See Dep't of Commerce*, 503 U.S. at 461-62.

186. M.L. Balinski & H.P. Young, *A New Method for Congressional Apportionment*, 71 PROC. NAT. ACAD. SCI. USA 4602, 4602 (1974).

187. *Id.*

188. *See generally* Grant M. Hayden, *Resolving the Dilemma of Minority Representation*, 92 CAL. L. REV. 1589 (2004); *See also* Mark M. Bell, *Relative Difference and the Dean Method: A Comment on "Getting the Math Right,"* 62 VAND. L. REV. EN BANC 1, 2-4 (2009), *reprinted in* 2 NW. INTERDISCIPLINARY. L. REV. 6, 8-10 (2009).

Montana received one representative.[189] Montana has a population of 905,316.[190] Thus, Montana had one representative for every 905,316 people. Rhode Island by contrast has a population of 1,049,662 and received two representatives.[191] Thus, Rhode Island has one representative for every 524,831 people. The disparity is almost two to one.[192] Because of the constitutional restraint that congressional districts cannot cross state boundaries, it is impossible to apportion anywhere near the mathematical equality of "one person, one vote."[193]

As the Court discussed in *U.S. Department of Commerce v. Montana*, "the constraints imposed by Article I, § 2, itself make that goal [one person, one vote] illusory for the Nation as a whole."[194] Thus, despite the significance of one person, one vote in the districting context, "it has only been used to invalidate reapportionment within a state [i.e. districting], never to decide apportionment among the states."[195]

D. Bias Concerns

In the apportionment context, bias is considered unpalatable because it indicates "a *systematic* tendency to favor some states [over others]."[196] Obviously, any apportionment that involves rounding will favor some states relative to others.[197] Bias concerns arise when there is a *systematic* favoritism for one type of state relative to another. The two methods that have the greatest biases are Jefferson and Adams.[198] Jefferson's method favors larger states over

189. BALINSKI & YOUNG, *supra* note 2, at 180, App. B 2000 Congressional Allocations for House Size, 435.

190. *Id.*

191. *Id.*

192. In districting, variations of 19 persons have been rejected for violating one person one vote; here the difference is 380,485 persons. *See* Karcher v. Daggett, 462 U.S. 725, 730 (1983) (quoting Kirpatrick v. Preisler, 394 U.S. 526, 530-31 (1969)).

193. "The requirement that districts not cross state borders appears to be implicit in the text and has been recognized by continuous historical practice." *Dep't of Commerce*, 503 U.S. at 448 n.14 (citing *Montana*, 775 F. Supp. at 1365 n.4 (stating that the Constitution requires that states be apportioned according to the States' respective numbers and it would seem impossible to apportion according to a State's respective numbers if the State's boundaries were not preserved).

194. *Dep't of Commerce*, 503 U.S. at 463.

195. Christopher St. John Yates, *A House of Our Own or A House We've Outgrown? An Argument for Increasing the Size of the House of Representatives*, 25 COLUM. J.L. & SOC. PROBS. 157, 165 (1991). *See also*, Bell, *supra* note 188, at 2-4; 8-10.

196. BALINSKI & YOUNG, *supra* note 2, at 71. *See also*, Bell, *supra* note 188, at 2-4; 8-10.

196. BALINSKI & YOUNG, *supra* note 2, at 71.

197. Apportionment involves the task of rounding remainders. Thus, when rounding some states are going to be advantaged (their quotient rounded up) and some are going to be disadvantaged (their quotient rounded down).

198. BALINSKI & YOUNG, *supra* note 2, at 71.

smaller states,[199] and Adams is as equally biased in favor of small states.[200] For instance, if the Adams method were used, we would see that "states with small populations tended to do better than their quota[.]"[201] If the Jefferson method were employed, "large states would routinely do better than their quota and small states worse[.]"[202] Because of the Jefferson and Adams methods rounding techniques, they both demonstrate a systematic favoritism.[203]

Bias is troublesome because Article I requires that each person's vote is supposed to count equally. When a method has systematic favoritism to one type of state, citizens of the apportionment method's favored state (be it large or small) are favored over citizens of the method's disfavored state, implicating that some votes are not equally counted.[204] Most scholars agree that bias concerns should inform the apportionment debate, but minimizing bias has heretofore not been intimated as a constitutional requirement.

The Webster and Hamilton methods possess the least bias.[205] The Hill and Dean methods are inferior to Webster and Hamilton because they have a demonstrable bias to the smaller states.[206] In terms of bias, Webster and Hamilton are therefore preferred because they treat large and small states equally.

Although not required by the Constitution, bias has generated great concern in the political debates. Jefferson's method was replaced by Webster in 1840 partly because of a concern over bias.[207] Replacing the Webster method with the Hill method was justified because it was erroneously assumed to be less biased.[208]

E. Application: U.S. Dep't of Commerce v. Montana

Despite the tri-centennial battles in the legislature, the Court has entered

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199. *Id.* at 71.

200. *Id.*

201. Edelman, *supra* note 22, at 339.

202. *Id.*

203. BALINSKI & YOUNG, *supra* note 2, at 71. It is unlikely that Jefferson knew that his method was biased, but Adams designed his method in order to favor the small states. *See id.* at Ch. 9.

204. The careful reader will note that the bias concerns are very similar to the "one person one vote concerns." That is because some scholars have equated "one person one vote" and "bias" to be different sides of the same argument. *Compare* BALINSKI & YOUNG, *supra* note 2, at 85 (only a method "that is perfectly unbiased – which fully satisfies the principle of one-man, one-vote . . ."), *with* Edelman, *supra* note 22, at 329-35 (arguing that the "best" method is the one that minimizes total deviation among the various states).

205. BALINSKI & YOUNG, *supra* note 2, at 76, 83.

206. *Id.* at 74.

207. Edelman, *supra* note 22, at 340.

208. *Id.* Although this was the purported rationale, the genuine reason was purely political. *See supra* Part II.B and accompanying text.

the "mechanisms of apportionment only once."[209] In *U.S. Department of Commerce v. Montana*, Montana sued after the 1990 census alleging that the Hill method was unconstitutional because it did not account for the Court's post-1941 one person, one vote jurisprudence.[210] Because this was an issue of first impression, the Court first ruled that apportionment questions are justiciable.[211] Relying on *Baker v. Carr*, the Court held that "the Constitution places substantive limitations on Congress' apportionment power and that violations of those limitations would present a justiciable controversy."[212] Thus, the Court concluded that there are constitutional limitations for apportionment and that the courts must check these limits. Additionally, based on the 1990 apportionment, the Court held the Hill method to be constitutional.[213] The Court also acknowledged that there are numerous factors that go into determining what apportionment method is "best" and that is a question for Congress.[214]

As discussed above, there are two constitutional constraints on the Court derived from Article I, Section 2 of the Constitution: maintaining quota and avoiding paradoxes.[215] Unfortunately, the Court did not have reason to immortalize these constitutional apportionment pillars. Montana challenged the Hill method, which does not suffer from paradoxes. Thus, the Court had no reason to constitutionalize avoiding paradoxes. Additionally, the Court did not rule on maintaining quota because in this case, the Hill method met quota for the 1990 apportionment and neither of Montana's proposed alternatives would have met quota.[216]

The Court's silence on the fundamentality of the quota and paradox issues could be interpreted in one of three ways. First,the Court may have thought that these issues are not as important as I have described them. Second, the Court may have refused to declare a method unconstitutional merely based on the *possibility* of violating quota. Third, the Court may have refused to discuss quota and paradoxes because the Court followed the majority of scholars' logic,

209. *Id.* at 311.

210. *Dep't of Commerce*, 503 U.S. at 445-47 (The dispute was largely over how to measure "one person one vote." One person one vote can be measured in a number of different ways. Here, the Court looked to the dispute between relative deviation and absolute deviation. The Hill method minimizes relative deviation and the Dean method minimizes absolute deviation. The Court declared that relative deviation does not violate "one person one vote[.]"); *see* Edelman, *supra* note 22, at 313-17 (giving an in-depth discussion on the issue).

211. *Dep't of Commerce*, 503 U.S. at 456 (citing Baker v. Carr, 369 U.S. 186, 217 (1962).

212. *Id.* at 457.

213. *Id.* at 465-66.

214. *Id.* at 465.

215. *See supra* Section III and accompanying text.

216. Ernst, *supra* note 91, at 1224-25.

that it is impossible to maintain quota and avoid paradoxes.

It is unknown why the Court did not address these issues, but the first alternative seems least likely. The Court thoroughly discussed the constitutional issues surrounding one person, one vote.[217] Analyzing this criterion, the Court expressly declared that there are constitutional limits on apportionment, but did not elucidate those limits.[218] Thus, the Court's silence on quota and paradoxes clearly does not preclude their constitutional fundamentality.

The second or third alternatives seem more likely than the first. The Court may only declare a method unconstitutional when the method violates quota in practice, as opposed to the mere *possibility* of violating quota. Additionally, if the Court declared the Hill method unconstitutional because it potentially fails quota, then the Court would be forced to choose the Hamilton method, which is presumptively unconstitutional because it suffers from the paradox problem. The Court most realistically was constrained by a choice of inferior alternatives, because a method that satisfies all the constitutional criteria had heretofore been unarticulated.

F. Summary

The Constitution requires that "[r]epresentatives . . . shall be apportioned among the several States . . . . according to their respective Numbers[.]"[219] This requirement encompasses two sub-categories to ensure constitutional apportionment: (1) proportionality (maintaining quota), and (2) representativeness (avoiding paradoxes). The concerns over bias and one person, one vote should inform the debate but should be secondary to the constitutional constraints of maintaining quota and avoiding paradoxes. However, the problem remains that "there is no method that avoids the three paradoxes and invariably stays within the quota."[220]

IV. NEW IDEAL METHOD

Scholars maintain that there is *always* tension between the constitutional bounds of maintaining quota and avoiding paradoxes and therefore a "best" apportionment method does not exist. As described by Balinski and Young, "[e]ither the principle of staying within the quota must be abandoned, or the possibility of the population and new states paradoxes must be accepted."[221]

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217. *Dep't of Commerce*, 503 U.S. at 459-60.
218. *See id.* at 457.
219. U.S. CONST. art. I, § 2, cl. 3.
220. BALINSKI & YOUNG, *supra* note 2, at 85.
221. *Id.* at 81.

This view has been unanimously supported by scholars. Lawrence Ernst concluded that "[t]he 'best' method issue is, in this author's opinion, unresolvable[.]"[222]

In this section, I propose a new method that modifies the divisor methods and resolves this "impossibility." I argue that the legislature is the best place to implement this new method. Therefore, the legislature should pass this proposal before the new census is taken to avoid partisan controversy.

A. The New Method Described

Of the divisor methods, Balinski and Young demonstrate that the Webster method is, in their opinion, the "best" apportionment method.[223] "Both analysis and empirical observation support the conclusion that the only divisor method that is perfectly unbiased – which fully satisfies the principle of one-man, one-vote – is Webster's."[224] Additionally, the Webster method has the lowest probability of violating quota, which, as discussed previously, would make the apportionment unconstitutional.[225] Other scholars agree that the Webster method presents the "best" divisor method.[226] Efton Park provides a step-by-step comparison between the Webster and Hill methods and argues that the Hill method is inferior to the Webster method in every demonstrable category.[227]

If the Webster method is the best divisor method, it must also be compared to the Hamilton method.[228] Most scholars agree that the Hamilton method is impermissible because of the previously described paradoxes. Park argues that it is axiomatic that paradoxes are not permitted in the apportionment context.[229] Balinski and Young offer a more tempered view that "achieving apportionments that accurately reflect relative changes in populations seems more important than always staying within the quota."[230] Deciding between Hamilton and Webster involves a tradeoff: either maintain quota and suffer

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222. Ernst, *supra* note 91, at 1207. Lawrence Ernst supplied an appendix to the Court for *U.S. Department of Commerce v. Montana* and was the Assistant Division Chief of the Statistical Research Division of the Bureau of Congress. , Joint Appendix (Vol. 1) at 20, U.S. Dep't of Commerce v. Montana, 503 U.S. 442 (1992) (Declaration of Lawrence R. Ernst).

223. BALINSKI & YOUNG, *supra* note 2, at 85. They argue the Webster method is "best" because it most adheres to the various criteria. *Id.* However, they do not state that the method is "perfect" because it does not always satisfy quota or avoid paradoxes. *Id.*

224. *Id.*

225. *See supra* notes 108-133 and accompanying text.

226. Park, *supra* note 22, at 235-36.

227. *Id.* at 236.

228. The Hamilton method is a non-divisor method, so whichever method is the "best" non-divisor method should be compared to the Hamilton method.

229. Park, *supra* note 22, at 233, 236.

230. BALINSKI & YOUNG, *supra* note 2, at 81.

from paradoxes (Hamilton) or avoid paradoxes and violate quota (Webster).

Avoiding paradoxes and maintaining quota are both constitutional constraints.[231] Thus, choosing one method over the other will inevitably violate the Constitution. Mathematicians have tried to resolve this tri-centennial dilemma and failed.[232] Writing definitively on the subject, scholars accept as true that "[t]here is no method that avoids the population paradox and always stays within quota."[233]

1. My Proposed Method

My proposed method proves that this impossibility dogma is false because my proposed method, the "Plus One" method, avoids all paradoxes and always stays within quota. The "Plus One" method works with any of the standard divisor methods. The method works as follows: (1) choose the apportionment method; (2) apportion the House according to the predetermined size; and (3) see if the apportionment violates quota. Next, if quota is met, use that apportionment; if quota is not met, then the House will be increased by one representative and be reapportioned.[234] For example, after the 2010 census, the House can be apportioned with 435 representatives using the Webster method. If that apportionment meets quota, that apportionment should be used. However, if the method does not meet quota, the House should increase to 436 representatives and be reapportioned using the Webster method. In the extremely unlikely event that two subsequent divisor methods violate quota, the

231. *See supra* notes 102-107 and accompanying text.

232. Balinksi and Young propose an incredibly complex alternative that solves the Alabama Paradox and maintains quota, but still fails the population and new state paradoxes. BALINSKI & YOUNG, *supra* note 184, at 39, 79.

233. *Id.* at 79 (emphasis in original). Additionally, combining methods will not resolve the problem. For instance, one could envision a system that continues using the Hill method and merely uses the Hamilton method whenever the Hill method fails quota. This proposal would meet quota; however, any proposal that *guarantees* quota while keeping the size of the House constant must eventually use a Hamilton-derived method. The problems exists that the Hamilton method is always subject to paradoxes; although the probability may be low, the possibility still exists. *Id.* at 44, 67.

234. Some may be concerned that an even House would result in too many tied votes in the House. However, this concern is somewhat ameliorated by the fact that there are ties in the House even with an odd number of representatives. *See* Press Release, Representative Carolyn B. Maloney, Republican Leadership Refuses to Accurately Count Hispanics (July 18, 2001), *available* at http://maloney.house.gov/index.php?option= com_content&task=view&id=667&Itemid=61 (last visited Sept. 1, 2009) (for a recent congressional issue concerning a census bill and tie votes). Additionally, the House had an even number of representatives in 1830, 1850, 1870, 1890, and 1900. *See* BALINSKI & YOUNG, *supra* note 2, at 157-89, App. B Representative Populations and Apportionments for the Twenty-Two United States Censuses, 1791-2000. There is nothing constitutionally preventing an even sized House. If the "Plus One" method were unpalatable because of fears of an even house, a "Plus Two" method could assuage any concerns.

steps can be repeated and 437 representatives would be apportioned.[235]

This proposal would finally solve the "impossible" by adhering to quota and avoiding paradoxes, and it should finally solve the apportionment dispute. Because the "Plus One" method is predicated on maintaining quota, it *always* meets quota. Additionally, because it is a modified standard divisor method, it *never* presents the paradoxes that have been described as axiomatically problematic.

2. Explanations and Justifications

Balinski and Young are correct that if the House is fixed no method can satisfy quota and avoid paradoxes.[236] However, if any one criterion is relaxed, a method can be derived that satisfies the remaining criteria. The question has typically centered on which criterion, avoiding paradoxes or satisfying quota, should be relaxed. Yet, these arguments involve a tradeoff between alternative constitutional mandates. The Constitution requires representativeness and proportionality.[237] The Constitution did not specify a permanent House size. Thus, deciding between these three axioms, the least important should be maintaining a fixed House because it is not implicitly nor explicitly in the Constitution.

The Constitution originally specified sixty-five representatives but envisioned a House much larger than this original delegation.[238] "The Constitution establishes that the number of representatives 'shall not exceed one for every thirty Thousand[.]'"[239] In 1792, the first apportionment required 105 representatives.[240] From 1792 to 1820, the House more than doubled, increasing from 105 to 213 representatives.[241] From 1820 to 1910, the House increased from 213 to 433 members.[242] Despite this history of rapid growth,

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235. From Balinski and Young's estimates the probability of Webster violating quota in subsequent apportionments would be 1 in 2,560,000. *See* BALINSKI & YOUNG, *supra* note 2, at 81-83.

236. *See id.* at 79._

237. *See* U.S. CONST. art. I, § 2.

238. *See id.* at cl. 3; Senator Orrin G. Hatch, "*No Right is More Precious in a Free Country": Allowing Americans in the District of Columbia to Participate in National Self-Government*, 45 HARV. J. ON LEGIS. 287, 297 (2008).

239. *Id.* (quoting U.S. CONST. art. I, § 2, cl. 3); *see generally* Akhil Reed Amar, *The Bill of Rights as a Constitution*, 100 YALE L. J. 1131 (1991) (providing a fascinating discussion on the topic and history of the debates).

240. *See* Apportionment Legislation 1790-1830, U.S. Census Bureau (Sept. 1, 2009), *available at* http://www.census.gov/history/www/census_then_now/apportion ment/apportionment_legislation_1790_-_1830.html (last visited Sept. 21, 2009).

241. The 1800 census increased the House to 142, in 1810 the House increased to 181 and in 1820 the House was increased to 213. *Id.*

242. BALINSKI & YOUNG, *supra* note 2, at 159, 169, App. B 1820 Congressional Allocations for House Size, 213, App. B 1910 Congressional Allocations for House Size, 433. The House actually decreased after

since 1911 the House has essentially remained stagnant.[243] There is nothing "special" about 435; rather, "435 was simply the size of the House when that body froze its growth."[244] Additionally, many scholars have argued that the House needs to increase to satisfy the goals of a representative democracy.[245] However, if the opposition was sufficiently concerned about an increasing House, then the "Plus One" could be a temporary solution and the subsequent apportionment would use the previously agreed upon size.[246]

Fears of a rapidly escalating House size are further mitigated by the improbability of one of the methods actually violating quota.[247] Despite the low probability that Webster or Hill would violate quota, the possibility still exists. An early authority on the subject, L. F. Schmeckebrier, declared that "a proper method of apportionment must meet every conceivable variation in population no matter how fantastic."[248] This idea remains true today. Irrespective of probabilities, if a method violates quota it must be modified.[249]

Apportioning the House has significant ramifications. Also, the House apportionment directly impacts the Electoral College. History has shown that one vote in the Electoral College can determine the outcome of the Presidential election.[250] Thus, it is not only important, but imperative, that the apportionment method fully complies with the Constitution. The historical debates demonstrate the importance of the issue, and it is time to use a method

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the 1840 apportionment, but that was an anomalous year. *See id*. at 161, App. B 1984 Congressional Allocations for House Size, 223.

243. "Congress passed a bill in the spring of 1911 apportioning 433 seats, together with the provision that the territories of Arizona and New Mexico receive one seat each, should they be admitted as states[.]" BALINSKI & YOUNG, *supra* note 2, at 47. The House briefly expanded to 437 after Hawaii and Alaska were admitted as states; however, the House reverted back to 435 after the 1960 census. Hatch, *supra* note 235, at 297 n.90.

244. Yates, *supra* note 195, at 157.

245. *See generally* James K. Glassman, *Why Just 435? After 80 Years this May be the Time to Increase the Number of Members in the House*; ROLL CALL, June 11, 1990; Christopher M. Straw, *The Role of Electoral Accountability in the Madisonian Machine,* 11 N.Y.U. J. LEGIS. & PUB. POL'Y 321, 350-53 (2008).

246. For instance, in 2010, if quota would be violated based on 435 representatives, then 436 would be used. In 2020, the House would then initially apportion 435 representatives. Some may be concerned that an even House would result in too many ties in the House. Instead, a "Plus Two" method could be used. This method is similar to current proposals that the House temporarily increase to give a representative to D.C. *See* Editorial, '*We'll Take It*,' N.Y. TIMES, Feb. 17, 2009, at 32.

247. Using Balinski and Young's best estimates, the "Webster Plus One" method would increase the House approximately once in every 1,600 apportionments, or once every 16,000 years. BALINSKI & YOUNG, *supra* note 2, at 81. If Congress continued using the Hill method the House would increase by this method once every 5,000 years.

248. L. F. SCHMECKEBIER, CONGRESSIONAL APPORTIONMENT 73 (1941).

249. Although the probability of violating quota is low, scholarly papers demonstrate that the probability is quite real. *See generally* Balinski & Young, *supra* note 184 (discussing a hypothetical 1984 apportionment).

250. *See supra* Part I and accompanying text.

that explicitly meets all of the constitutional constraints. My method is the only method guaranteed to *never* violate the constitutional principles of proportionality and representativeness.

B. Implementation

The "Plus One" method can be implemented in one of two ways: by Congress or the Court. Congress has the authority to determine the method for apportioning the House. Congress has passed numerous apportionment bills, and it would be best for Congress implement this decision. The optimal implementation would occur before the census numbers are released. If Congress waits until it has current census numbers, inevitably the debate will devolve into a partisan battle, with each party advocating for its most favorable method.[251] A pre-census resolution will ensure that the debate centers on the merits of the method as opposed to its partisan results.

If Congress does not modify the current apportionment method, the Court could be forced to implement my proposed change. An apportionment method that violates quota has never been challenged in court. However, one can only assume that if the 2010 census violates quota the burdened party, or state, will immediately challenge the method. Although the Court has never ruled on quota, it seems quite likely that the Court would indicate that a method that violates quota violates representativeness and is therefore unconstitutional.[252] The Court will then be faced with the option of either rejecting Congress's method, or implementing my "Plus One" method.[253] However, when deciding between methods, the Court will have the apportionment results for the various alternatives. Thus, the Court's decision may be mired in political taint, as was the case in *Bush v. Gore*.[254] Irrespective of the Court's logic in its decision, commentators and the public will question the legitimacy of whatever decision that the Court chooses, because of the obvious and immediate political ramifications.

Thus, to avoid the appearance of illegitimacy, I recommend that Congress implement the "Plus One" method prior to release of the 2010 census numbers. I advocate for the "Webster Plus One" method, but if Congress was reluctant to change the method used since 1941, the "Hill Plus One" method presents a viable alternative. The "Hill Plus One" method would still satisfy quota, avoid

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251. *See* Chaffe, *supra* note 13, at 1015-20.

252. *See supra* notes 102-107 and accompanying text.

253. Although I advocate for the "Webster Plus One" method, the Court would probably choose the "Hill Plus One" method because the Hill method has been accepted as constitutional and could be continued to be used if modified to meet quota.

254. 531 U.S. 98 (2000); *see generally* Richard L. Hasen, *A Critical Guide to Bush v. Gore Scholarship*, 7 ANN. REV. OF POL. SCI. 297 (2004) (providing a detailed history of the issue).

paradoxes, and therefore apportion constitutionally.

V. CONCLUSION

The Constitution requires a proportional and representative apportionment. I have argued that the only way to apportion proportionally and representatively is to maintain quota and avoid paradoxes. An apportionment method that meets both of these criteria has heretofore been deemed impossible. The "Plus One" method *guarantees* a representative and proportional apportionment. The apportionment method choice has directly impacted the Nation, and the "Plus One" method ensures that future apportionments will be conducted within constitutional bounds and finally resolves the "impossible."