

# A Blockchain Greenfield for Cato,

## Democratic Representation by a Trust-less, Self-disclosing Market

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Democracy of the People, by the People, and for the People depends on accurate representation in the legislative process. America's size and diversity demands a House of Representatives with over ten thousand members. Such a body is now possible with a novel combination of proven technology.

At the Constitutional Convention, all settled on proportional representation at a ratio of 1:30,000. Before computers, pragmatic realities of speech and debate imprisoned representatives to room and buildings. Here, financial technology and computer science provide a novel alternative.

Reconstruct the House of Representatives as a semi-autonomous, trust-less marketplace of ideas. Replace the few people controlling the legislative agenda with a system that treats the statutory

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text as ledgers in a blockchain, *see* Bitcoin. Viewpoint-neutral transactions then mediate the speech and debate of countless representatives.

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Art. I of the U.S. Constitution designed the U.S. House of Representatives to represent the body politic by proportional representation. The Founding Fathers created a dynamic institution, with one representative for every 30,000 citizens to ensure that those legislating in the Federal Government accurately reflected the entire spectrum of diversity in the people so governed. Congress, in its own self-interest, fixed the number of representatives at 435 by statute.<sup>2</sup> It is possible that no other sentence has had a more profound effect on the very nature of our democracy.

This artificial and unconstitutional limitation, that dilutes representation by 2369%,<sup>3</sup> may explain why so many feel disconnected and abused by the Federal Government.<sup>4</sup> As the size of Congressional districts grew, the public's knowledge and involvement declined. The Information age is not the source of this anger, but rather a light illuminating exactly how far removed we are from politics.

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<sup>2</sup> 2 U.S.C.A. § 2a(a) (West 1996) ("the then existing number of Representatives" in the 82<sup>nd</sup> Congress).

<sup>3</sup> The 2010 census apportionment population of 309,183,463, divided by 30,000 yields 10,306 representatives, divided by 435 (the current size) times 100%. U.S. Census Bureau, Congressional Apportionment, 2010 Census Brief (Nov. 2011) <https://www.census.gov/prod/cen2010/briefs/c2010br-08.pdf>; U.S. Const., art. I, sec. 2, cl. 3 (1:30,000 ratio).

<sup>4</sup> Gallup, *Government Dissatisfaction Returns as Most Important Problem* (Feb. 9, 2017) (19% of Americans name dissatisfaction with government as top problem) <http://www.gallup.com/poll/203816/government-dissatisfaction-returns-important-problem.aspx>

The application of legislative power has gone from bipartisan committees of seasoned veteran legislators to generic “brand loyalty.” Until now, there was no alternative. Until now legislators had to meet face-to-face. But now we have the technology to communicate, in a virtual democracy of ideal representation, one representative for every 30,000 people.

Email, telepresence, and live chats are primitive tools when applied to the power dynamics of the legislative process. This note goes beyond these simple means of digital communication to propose a new autonomous institution as the solution to the age-old problem of seating a legislative body around a table or gathering to debate in a hall. This new institution automates the principal power in the House, control of the legislative agenda,<sup>5</sup> which as a fundamental byproduct of its unbreakable security, delivers open and honest disclosure.<sup>6</sup>

Bitcoin is the key to understanding this transfer of power, because Bitcoin demonstrates that it is possible to create a computer record safe from nefarious manipulation.<sup>7</sup> The Bitcoin system

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<sup>5</sup> David W. Rohde, Edward H. Stiglitz, & Barry R. Weingast, *Dynamic Theory of Congressional Organization*, 2 (Feb. 17 2013).

<sup>6</sup> This is not a proposal for executing or implementing regulation through blockchains. *See generally* Carla L. Reyes, *Moving Beyond Bitcoin to an Endogenous Theory of Decentralized Ledger Technology Regulation: An Initial Proposal*, 61 Vill. L. Rev. 191, 227–28 (2016) (comparing proposals “that regulation of decentralized ledger technology should build on the body of literature, most prominently led by Lawrence Lessig, that argues for the use of code-as-law. [A proposal] for allowing the industry to self-regulate through rules created by use of the blockchain or other similar technologies . . . a proposal for using smart contracts to create a code of law that enables the regulation of private actors and decentralized autonomous organizations . . . a proposal for layering law on top of technology architecture in order to form a complete regulatory picture . . . a proposal that regulators undertake the dual task of enacting a law or regulation via statute, and then implementing that statute through code”).

<sup>7</sup> Lance Koonce, *The Wild, Distributed World: Get Ready for Radical Infrastructure Changes, From Blockchains to the Interplanetary File System to the Internet of Things*, 28 No. 10 Intell. Prop. & Tech. L.J. 3, ¶ 7 (Oct. 2016); Joshua A.T. Fairfield, *BITPROPERTY*, 88 S. Cal. L. Rev. 805, 808 (May 2015).

enforces one rule, that no account ledger may be increased without an equal decrease in some other account ledger. This rule, that the sum is zero, cannot be tricked and is trusted by hackers, criminals and other trustless societies.<sup>8</sup> Take a moment to appreciate how profound it is that hackers and criminals would trust their money to a data file, on the Internet, that has absolutely zero backing from any government, institution, rare earth element, or person of sterling reputation.

This transfer of legislative agenda power from the majority party to an independent and autonomous virtual economy, where the rule of the market is that legislation may only advance with a statutorily sufficient number of votes, is possible because all legislation advancement transactions follow programed rules of mediation. Mediating the progress from the text of one version of legislation into another version of legislation only after the required political “transaction” is authorized. This is just like a Bitcoin transaction, where one ledger is increased as much as another ledger is decreased only after the financial transaction is authorized.

Instead of fixing the size of the House, Title 2 U.S.C. should focus on the rules of legislative advancement. An autonomous institution enforcing legislative advancement as regulated transaction would still leave plenty of room for the members to form parties and coalitions, just

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<sup>8</sup> “Black market sites like the now-defunct Silk Road have continued to exploit the anonymity of Bitcoin to engage in illegal transactions.” Alice Huang, *Reaching Within Silk Road: The Need for A New Subpoena Power That Targets Illegal Bitcoin Transactions*, 56 B.C. L. Rev. 2093, 2093 (2015); *see also* Dope, (2015) <http://www.imdb.com/title/tt3850214/> (a drug dealer launders his profits using Bitcoin).

as the New York Stock Exchange has but a few simple rules while market traders on Wall Street burn with creativity.

While the markets require vast armies of regulators, auditors, and investigators to compel disclosure of the securities being traded, in Bitcoin, everyone has access to the balance of every ledger at any given time. This disclosure is a byproduct of the trust mechanism, the blockchain, and not a design feature. A blockchain is the complete series of transactions, linked by encryption, and duplicated across every member of the system. To insert a bogus transaction would require cracking the encryption and hacking every member of the system. Because each member of the system may verify every transaction, all members must have access to all of the data. This vast duplication of data may be anathema to orthodox database design,<sup>9</sup> but given the low cost of data storage,<sup>10</sup> these costs can now take a backseat to trust and disclosure.

Duplication provides an effective mechanism of disclosure, which works as a feature of our hypothetical autonomous legislative system, ensuring every legislator has full access to every letter, of every bill.

In a blockchain, each member independently applies the rules of the system to every incoming transaction and cross-validates the result before recording the transaction as a new link in the

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<sup>9</sup> See Michael Stonebraker & Joseph M. Hellerstein, *What Goes Around Comes Around in Readings in Database Systems* (2005) 4th Edition, [https://mitpress.mit.edu/sites/default/files/titles/content/9780262693141\\_sch\\_0001.pdf](https://mitpress.mit.edu/sites/default/files/titles/content/9780262693141_sch_0001.pdf) (identifying “Information is repeated” as a longstanding and undesirable property of database design).

<sup>10</sup> See Croman K. et. al., *On Scaling Decentralized Blockchains*, Financial Cryptography and Data Security, FC 2016, vol 9604, [https://link.springer.com/chapter/10.1007/978-3-662-53357-4\\_8](https://link.springer.com/chapter/10.1007/978-3-662-53357-4_8) (Table 1 shows storage as the lowest cost in maintaining blockchains).

blockchain. So, when a transaction is made in Bitcoin, each machine in the Bitcoin network verifies that the source account has at least X, the target account is increased by X, the source account is decreased by X, and that a fair number of other machines in the network concur.

Without a need for direct human intervention in each legislative transaction, a legislature can grow to support a limitless number of participants. Essentially, this is like going from the human bank tellers of old to modern ATM machines. Without a limit on size, the democratic intent of proportional representation, cherished by both Madison and Brutus, is not only possible, but capable of solving numerous intractable problems. The cost to run an election campaign would plummet because 30,000 constituents can be courted door by door. Congressional districts will be harder to gerrymander when they are 2369% smaller. Rent-seeking will be harder to financial justify and conceal when lobbying costs increase by 2369%.<sup>11</sup> “Fake news” will have less traction when people have 2369% more access to their representatives.

In this note we first discuss the history of 2 U.S.C. § 2a(a) and how the U.S. House came to have exactly 435 representatives (the 435 system). In part II, we formally define a new system of autonomous legislative control (the 30k system). In part III, using established theories of legislative power and public choice we assess our new system and alter judicial review.

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<sup>11</sup> “Rent-seaking” is the activity of private interests in securing targeted legislation that increases their return on investment beyond the default return without such legislation. Maxwell L. Stearns & Todd J. Zywicki, Public Choice Concepts and Applications in Law, 46 (2009). See discussion *infra* Section III.B.

## I. HISTORY, WHY THERE ARE 435 REPRESENTATIVES

The roots of popular representation in the United States stretch back to the first Parliaments of England. It is easy to imagine a great hall and the king's chamberlain saying "sorry, the room is full. You have to wait outside." Representation has always been limited by practical considerations.

King Æthelstan began summoning assemblies of popular representation in the early 10th century as the size and diversity of his kingdom grew beyond that which a monarch could no longer directly control.<sup>12</sup> While attendance in these assemblies sometimes exceeded 100,<sup>13</sup> assemblies averaged around 25-40 persons.<sup>14</sup> The Magna Carta (13th century) firmly established a relationship between taxation and representation.<sup>15</sup> Native American confederacies were also a likely influence on popular representation in the formation of the United States.<sup>16</sup>

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<sup>12</sup> J.R. Maddicott, *The Origins of the English Parliament, 924-1327*, 10-11.

<sup>13</sup> Unknown signatory non-noble landed fief. *Id.*

<sup>14</sup> *Id.* at 5.

<sup>15</sup> *See generally, id.* at 410-12.

<sup>16</sup> *See* Donald A. Grinde & Bruce Elliott Johansen, *Exemplar of Liberty: Native America and the Evolution of Democracy* (1991).

## **A. Representatives shall be apportioned according to their respective Numbers<sup>17</sup>**

During the Constitutional Convention, Mr. Madison urged the addition of representatives because a Congress of limited size “would not possess enough of the confidence of the people, and wd. be too sparsely taken from the people, to bring with them all the local information which would be frequently wanted.”<sup>18</sup> Opposing him, members disliked the additional costs and feared too large a number would reduce the body’s efficiency.<sup>19</sup>

Similar to England’s Parliament, the Convention first fixed the number of representative at 65 on July 16th.<sup>20</sup> Hamilton, urging that the popular branch of government be on a “broad foundation”, warned that 65 representatives was “so narrow a scale as to be really dangerous, and to warrant a jealousy in the people for their liberties.”<sup>21</sup> Shifting from a fixed number to a dynamic ratio, on September 10, the sub-committees returned with text declaring a number “not exceeding the rate of one for every forty thousand.”<sup>22</sup>

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<sup>17</sup> U.S. Const. Art. I, sec. 2, cl. 3.

<sup>18</sup> *Whelan v. Cuomo*, 415 F. Supp. 251, 255 (E.D.N.Y. 1976); (citing 1 Farrand 568—69).

<sup>19</sup> *Id.* 1 Farrand 569—70.

<sup>20</sup> *Id.* 2 Farrand 13—14.

<sup>21</sup> *Id.* at 256; 2 Farrand 553—54.

<sup>22</sup> *Id.*; 2 Farrand 566.

On September 17, 1787, George Washington spoke in favor of a motion to strike ‘40,000’ and insert in its place ‘30,000’.<sup>23</sup> It was thought that this ratio “would not, he remarked, establish that as an absolute rule, but only give Congress a greater latitude which could not be thought unreasonable.”<sup>24</sup> It was the only occasion during the entire Convention that he expressed his personal views.<sup>25</sup> The motion carried unanimously.<sup>26</sup> But after the Convention, the debate over ratification continued.

Mr. Madison:

First, that so small a number of representatives will be an unsafe depositary of the public interests; secondly, that they will not possess a proper knowledge of the local circumstances of their numerous constituents; thirdly, that they will be taken from that class of citizens which will sympathise least with the feelings of the mass of the people, and be most likely to aim at a permanent elevation of the few on the depression of the many; fourthly, that defective as the number will be in the first instance, it will be more and more disproportionate, by the increase of the people, and the obstacles which will prevent a correspondent increase of the representatives.<sup>27</sup>

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<sup>23</sup> *Id.*

<sup>24</sup> *Id.*

<sup>25</sup> *Id.*

<sup>26</sup> *Id.*

<sup>27</sup> The Federalist No. LV. (Madison).

While Madison urged increasing the size, he warned that “the number ought at most to be kept within a certain limit, in order to avoid the confusion and intemperance of a multitude.”<sup>28</sup>

Madison continued that as the size of a body grew, “an oligarchic few would dominate with passion over reason.”<sup>29</sup> Madison’s warning is a rare expression of political reasoning against large delegative bodies.

Cato:

that the number of representatives are too few; that the apportionment and principles of increase are unjust; ... It is a very important objection to this government, that the representation consists of so few; too few to resist the influence of corruption, and the temptation to treachery, against which all governments ought to take precautions ... against the small number of representatives is, that but few of you will have the chance of sharing even in this branch of the legislature; and that the choice will be confined to a very few; the more complete it is, the better will your interests be preserved, and the greater the opportunity you will have to participate in government, one of the principal securities of a free people.<sup>30</sup>

Brutus:

It is obvious, that for an assembly to be a true likeness of the people of any country, they must be considerably numerous. -- One man. or a few men, cannot

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<sup>28</sup> *Id.*; see *infra*.

<sup>29</sup> The Federalist No. LVIII (Madison).

<sup>30</sup> The Anti-Federalist (Cato).

possibly represent the feelings, opinions, and characters of a great multitude. ... In this assembly, the farmer, merchant, mecanick[sic]. and other various orders of people, ought to be represented according to their respective weight and numbers; and the representatives ought to be intimately acquainted with the wants, understand the interests of the several orders in the society.<sup>31</sup>

In sum, there were dueling concerns about the House that: (a) too large a size would get out of control, and (b) too small a size would fail to adequately represent all of the people.

After ratification, Article 1 of the Bill of Rights set forth an incremental ratio increase as the size of the House was to grow.<sup>32</sup> Less than 100 representatives, the ratio would be 1:30,000.<sup>33</sup> Between 100-200 representatives, the ratio would be no less than 1:40,000.<sup>34</sup> Above 200 representative, the ratio would be no more than 1:50,000.<sup>35</sup> Though this proposed amendment has never been fully ratified,<sup>36</sup> it demonstrates that the ratio was the ideal.

At the heart of American bicameralism is that the Senate is defined by its ratio to the states, while the House is defined by its ratio to the people. The House is not large in number by design,

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<sup>31</sup> The Anti-Federalists (Brutus 3).

<sup>32</sup> Art. I. Bill of Rights.

<sup>33</sup> *Id.*

<sup>34</sup> *Id.*

<sup>35</sup> *Id.*

<sup>36</sup> *See generally* U.S. Constitution.

rather that the House is large in number is an indirect result of both a desire to maintain a reasonable relationship with the people and the vast size of the United States.

## **B. Seat by Seat: the History 2 U.S.C. § 2a(a) (435)**

For the first 140 years,<sup>37</sup> Congress set the number of representatives each state would have with language that was direct and to the point.<sup>38</sup> Such as: “That until the next census and apportionment shall be made, the State of Iowa shall be entitled to two representatives ~~in the~~ in the House of Representatives of the United States.”<sup>39</sup> In 1850, following the Seventh Census, Congress switched to a new method of apportionment based on first setting the total number, then working backwards to calculate a representation ratio.

[W]hich aggregate population he shall divide by the number two hundred and thirty-three, ... the said Secretary of the Department of the Interior shall then proceed, in the same manner, to ascertain 'the representative population of each State, and, to divide the whole number of the representative population of each State by the ratio ... which excess of representatives over two hundred and thirty-three shall only continue until the next succeeding apportionment of representatives under the next succeeding census .<sup>40</sup>

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<sup>37</sup> The period from 1789 to 1929.

<sup>38</sup> Const. Art. I, § 2, cl. 3.

<sup>39</sup> 29th Congress, Sess. I. Ch 82, § 3; 9 Stat. 235.

<sup>40</sup> 31st Congress, Sess I. Ch 11, § 25; 9 Stat. 432-433.

Finally, in 1929 Congress entered the Modern Era.<sup>41</sup> No longer would the House attempt to maintain any relation to the population. The 82nd Congress gave us the statute we have today.<sup>42</sup>

[T]he first regular session of the Eighty-second Congress and of each fifth Congress thereafter, the President shall transmit to the Congress a statement showing the whole number of persons in each State, excluding Indians not taxed, as ascertained under the seventeenth and each subsequent decennial census of the population, and the number of Representatives to which each State would be entitled under an apportionment of the then existing number of Representatives.<sup>43</sup>

Except for a temporary increase to 437 in 1950 and 1958 from the annexation of Alaska and Hawaii,<sup>44</sup> the size of the U.S. House of Representatives has remained fixed at 435.

### **C. Fixation, rising diversity, and “one person, one vote”**

In 1976, the Eastern District of New York in *Whelan v. Cuomo* heard the first constitutional challenge to 2 U.S.C. § 2a when a citizen of New York sued the Secretary of the State of New

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<sup>41</sup> June 18, 1929, ch. 28, § 22, 46 Stat. 26;

<sup>42</sup> Nov. 15, 1941, ch. 470, § 1, 55 Stat. 761;

<sup>43</sup> 2 U.S.C.A. § 2a (West 1996)

<sup>44</sup> Representation of States of Alaska and Hawaii in House of Representatives as not affecting basis of apportionment established by this section, see section 9 of Pub. L. 85–508, July 7, 1958, 72 Stat. 339, set out as a note preceding section 21 of Title 48, Territories and Insular Possessions, and section 8 of Pub. L. 86–3, Mar. 18, 1959, 73 Stat. 4, set out as a note preceding section 491 of Title 48.

York, alleging that § 2a violated the spirit, if not the letter, of the Constitution.<sup>45</sup> In reviewing the constitutional debate, the Court presumed, that there must exist “dangers of too numerous a body.”<sup>46</sup> Avoiding the *Congress is too small* argument, the Court found that “the historical background and the plain meaning of the Constitution support the power of Congress to fix the number of representatives at a figure less than the maximum of one for every 30,000 inhabitants.”<sup>47</sup> The power of Congress to limit the size of the House is “implicit” because the lack of an alternative was “obvious.”<sup>48</sup> The Constitution describes a *maximum*, not a *minimum*, size limit. The plaintiff did not appeal.

In 1984, the Southern District of New York in *Wendelken v. Bureau of the Census* heard an equal protection challenge to § 2a.<sup>49</sup> Relying heavily on *Whelan*, the Court’s short opinion found that “so long as the Constitution requires apportionment of seats in the House of Representatives among the *states*, inequalities of voting power of the kind mentioned above are inevitable in view of population differences; the question is a matter of degree.”<sup>50</sup> Pessimistically dismissing

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<sup>45</sup> *Whelan v. Cuomo*, 415 F. Supp. 251, 258 (E.D.N.Y. 1976).

<sup>46</sup> *Id.* at 256.

<sup>47</sup> *Id.* at 258.

<sup>48</sup> *Id.* at 257, 258.

<sup>49</sup> *Wendelken v. Bureau of the Census, N.Y., N.Y.*, 582 F. Supp. 342, 343 (S.D.N.Y. 1983), *aff’d*, 742 F.2d 1437 (2d Cir. 1984).

<sup>50</sup> *Id.*

the result as “inevitable,” the Court found that Congress was free to deviate as far as it liked from the Constitution’s ideal.<sup>51</sup>

More recently, in 2010 the Northern District of Mississippi in *Clemons v. U.S. Department of Commerce* took up the issue. As a preliminary matter, the Court found that the subject of equal representation was not a political question but one for the courts to decide.<sup>52</sup> As for the size of congressional districts, the Court thoroughly reviewed the constitutional convention and Supreme Court jurisprudence and found support for the argument that “Congress must make a good-faith effort towards the goal of equivalence” in representation.<sup>53</sup> However, the plaintiff conceded that anything less than an “astronomical increase” would leave the disparity unresolved.<sup>54</sup> Without a viable solution to resolving this disparity, the Court found Congress had acted appropriately in balancing the practical considerations.<sup>55</sup> This lack of remedy could explain why the Supreme Court ordered the District Court “to dismiss the complaint for lack of jurisdiction.”<sup>56</sup>

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<sup>51</sup> See *Id.* (1600% = 7,000 proposed representatives divided by 435 actual representatives times 100%).

<sup>52</sup> *Clemons v. U.S. Dept. of Com.*, 710 F. Supp. 2d 570, 575 (N.D. Miss. 2010), *vacated sub nom. Clemons v. Dept. of Com.*, 562 U.S. 1105 (2010).

<sup>53</sup> *Id.* at 575-89.

<sup>54</sup> *Id.* at 589.

<sup>55</sup> *Id.* at 590.

<sup>56</sup> *Clemons v. Dept. of Com.*, 562 U.S. 1105 (2010).

Apart from attempts in 2007 and 2009 to give the District of Columbia one representative,<sup>57</sup> the most cited alternative is known as the Wyoming Plan. The Wyoming Plan would change the apportionment computation to cause the size of the House to grow, only and until, the ratio of representation was even. Unresolved, the problem of “one person, one vote” was without a credible, practical solution.<sup>58</sup>

Still, the Supreme Court in *Reynolds v. Sims* discussed apportionment as a problem implicating equal rights.<sup>59</sup> Starting from the premise that one’s right to vote cannot be modified, the Court extended that right to include unequal voting districts within a state.<sup>60</sup> The Court limited its holding to state legislatures by finding a vast difference between the Federal Government and the sovereign States.<sup>61</sup>

Ultimately, efforts to change the House by arguing “one person, one vote” does little to address the practical complexities of controlling such a large and diverse legislative body. Simply fighting about an imbalance in representation ignores the warnings of Madison and *Whelan*, and does nothing to satisfy the concerns of Cato and Brutus.

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<sup>57</sup> E.g. H.R. REP. 110-52, 2 (2007 - “(2 U.S.C. 2a(a)), is amended by striking ‘the then existing number of Representatives’ and inserting ‘the number of Representatives established with respect to the 110th Congress’); H.R. REP. 111-22, 2 (2009 - 112th Congress)

<sup>58</sup> See generally Jeffrey W. Ladewig, *One Person, One Vote, 435 Seats: Interstate Malapportionment and Constitutional Requirements*, 43 Conn. L. Rev. 1125 (2011); Byron J. Harden, *House of the Rising Population: The Case for Eliminating the 435-Member Limit on the U.S. House of Representatives*, 51 Washburn L.J. 73 (2011).

<sup>59</sup> *Reynolds v. Sims*, 377 U.S. 533, 560 (1964).

<sup>60</sup> *Id.*

<sup>61</sup> *Id.* at 568.

This note takes the position that simply restoring a homogenous ratio of representation is insufficient. Rather, an entirely new structure and process is needed to overcome the practical realities of the 1:30,000 ratio in the Constitution.

The number 435 was never carved into stone but came about through the slow fossilization of the growing self-interest of Congress. The original focus on dynamic representation ossified into a static malaise. As we approach the centennial anniversary of fixation, it is hard to imagine those in Congress willingly changing this number.

## **II. A NOVEL SOLUTION: FINANCIAL TECHNOLOGY AND COMPUTER SCIENCE ENGINEERING**

While most Americans say that Congress is broken,<sup>62</sup> the lack of a practical solution for the mechanics of political debate has been a foregone conclusion. Because the collective will must be consolidated into a unitary expression of words, the fear of stalemate and manipulation in an actively controlled system is legitimate.

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<sup>62</sup> Gallop, *US Congressional Approval Averages Weak 17% for 2016* (December 15, 2016) <http://www.gallup.com/poll/199445/congressional-approval-averages-weak-2016.aspx>

Traditional business collaboration software (like email and telepresence) is necessary, but it is not sufficient. Being physically separated from colleagues introduces additional issues of trust and empathy. Distributed representatives should trust that the actions of the body are legitimate and there are no backdoors for secret or privileged manipulation. Politicians already don't trust each other, without a better system of control, adding more politicians and would only add more fuel to the fire. Enter the new technology known as a "blockchain," more commonly known by its first successful implementation, Bitcoin.

## **A. Cryptocurrencies: what is a Blockchain?**

As used in cryptocurrencies, a blockchain is the full history of an accounting ledger. A complete record of every transaction and the exact value in every account. The machines that manage the blockchain ensure that all transactions must end in a zero-sum result (e.g. user X - 1, user Y + 1 = net 0). If a hacker were to modify software that would produce a transaction whose sum was not zero, the system receiving the transaction would reject it as invalid (e.g. user X - 1 and user Y + 2 is net 1, not zero). Only after a transaction is received, approved, and other machines in the system concur, is the transaction recorded.

Trust in these systems comes from the fact that there are always multiple independent parties that verify that every other party is reaching the same conclusion. A hacker would have to hack all the parties in the system, so that they too would reach the same deviant conclusion. On top of

this, cryptography ensures that all transactions and messages are from who they say they are, which is why a system needs to be hacked and not just spoofed.<sup>63</sup>

The blockchain is called a chain because each transaction (or “block”) has the encrypted blessing of both the old owner and the encrypted blessing of the new owner. One cannot add another link in the chain without the encrypted blessing of the previous link in the chain. Because the blockchain is distributed among numerous interested parties, no one party can control the blockchain and all are forced to play by the rules.<sup>64</sup> Currency used to require the backing of the Secret Service. However, Bitcoin is not backed by a sovereign, institution, or individual. Bitcoin has shown that a blockchain can function as a trustworthy institution for recording and reconciling transactions in an intensely trustless industry.<sup>65</sup>

## **B. Translating the Legislative Process into a Secure Transaction Set**

The clear and plain meaning of “legislative” is to propose law (*legis*, genitive of *lex*, meaning law and *lator*, past participle of *latus*, meaning to propose).<sup>66</sup> That multiple legislators propose law implies the necessity of something that can consolidate multiple proposals into a final,

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<sup>63</sup> Lance Koonce, *The Wild, Distributed World: get ready for radical infrastructure changes, from blockchains to the interplanetary file system to the internet of things*, 28 No. 10 Intell. Prop. & Tech. L.J. 3, (October, 2016).

<sup>64</sup> Joshua A.T. Fairfield, *Bitproperty*, 88 S. Cal. L. Rev. 805 (May, 2015).

<sup>65</sup> Jeanne L. Schroeder, *Bitcoin and the Uniform Commercial Code*, 24 U. Miami Bus. L. Rev. 1 (Spring, 2016).

<sup>66</sup> Merriam-Webster, <http://www.merriam-webster.com/dictionary/legislator> (last visited Mar. 16, 2017).

unitary statement of The Law. Traditionally, this consolidation was done by humans, voting round by round, circulating proposed amendments, reconciling differences, and presenting a final bill to the President.

Fundamentally, all this is nothing more than managing textual changes to text documents (e.g. “replace this with that”, “strike that”, and “create this”). While the mechanics of this coordination is now commonplace,<sup>67</sup> the actual coordination of legislating remains vested in some of the most powerful people in the Federal government. Third party trust-less mediation built on blockchains, such as Bitcoin, are replacing legacy institutions built on trust. The key to liberating the legislative process is the effective transfer of the power of coordination from men to an autonomous mediator, our 30k system.

Understand, a blockchain can institutionalize more than just the current balance of one or more accounts. A blockchain can institutionalize an infinitely complex set of documents such as the United States Code and the Code of Federal Register.<sup>68</sup> The primary function of coordination is the balancing of multiple versions of the U.S.C. and C.F.R. To translate the legislative process into a blockchain, simply reduce the process of legislating into discrete transactions and secure them in a blockchain.

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<sup>67</sup> See Samuel Kai-Wai Chu & David M. Kennedy, *Using online collaborative tools for groups to co-construct knowledge*, Online Information Review, Vol. 35 Iss: 4, pp. 581-597 (2011).

<sup>68</sup> See BITPROPERTY, 88 S. Cal. L. Rev. 805, 809 (“a distributed public ledger system confers not just the power to transfer dollars, but also the power to transfer anything . . . digital signatures, digital contracts, digital keys”).

Unencumbered by the bounds of the 435 system and the centuries of political precedent, the software engineering community has long ago solved this problem.<sup>69</sup> Open source software depends on multiple people, making multiple changes, on multiple drafts of documents, randomly distributed across time, while generating and resolving conflicts, all to produce functional networks of interrelated rules.<sup>70</sup> This is very similar in form and function as laws.<sup>71</sup>

Our 30k system contains two primary transactions, branching and merging, and one secondary transaction, difference.

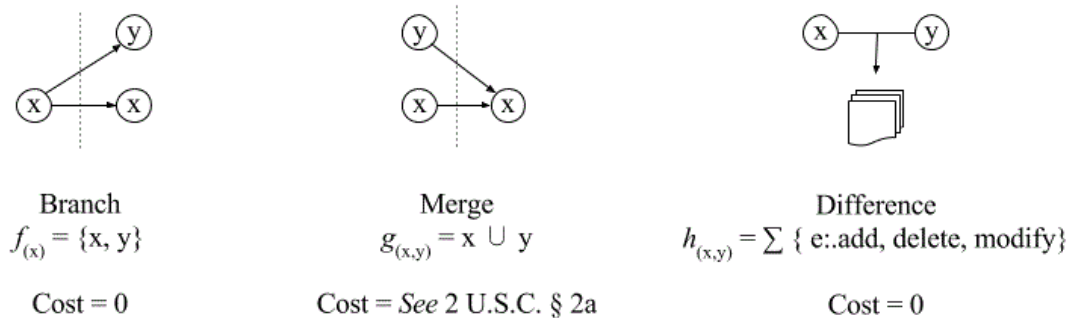


Figure 1 – A reduction of the legislative process into three transactions.

<sup>69</sup> See Marc J. Rochkind, *The Source Code Control System*, IEEE Transactions on Software Engineering, Vol. SE-1, Issue: 4 (Dec. 1975).

<sup>70</sup> See Scott Chacon & Ben Straub, *Pro Git* (2014) 2nd Edition (Chapter 1. Getting Started <https://git-scm.com/book/en/v2/Getting-Started-About-Version-Control>).

<sup>71</sup> See Reyes *supra* note 3.

Branching creates a clone of the complete set of documents for members of a subgroup to edit.<sup>72</sup>

As time goes by, more and more branches are created by ever smaller subgroups, presumably having narrower interests.<sup>73</sup>

Eventually, this work by specialists must find its way back into the main branch. A merger happens when one branch is integrated into another branch.<sup>74</sup> To understand and approve the merger of two branches, a differential comparison is performed, with the identification of any discrepancies between the two branches automatically highlighted. As new branches can be created without care, the merger of one branch into another branch is treated with the utmost concern.

The process and substance in software engineering is the same as with legislatures.<sup>75</sup> Both institutions stake their existence on the production of a unitary base of text, which require the input of many distributed individuals in an environment where everyone is assumed to be introducing defects.

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<sup>72</sup> See Pro Git (Chapter 3.1 Branching in a nutshell <https://git-scm.com/book/en/v2/Git-Branching-Branched-in-a-Nutshell>). Branching

<sup>73</sup> Branching and merging as described here is similar to “sidechains” that complicate basic blockchains by allowing “assets” to be transferred between semi-independent blockchains. See generally Adam Back, et. al., *Enabling Blockchain Innovations with Pegged Sidechains*, Blockstream (2014) <http://www.blockstream.com/sidechains.pdf>; Blockstream, Technology, (last accessed Mar. 19, 2017) <https://blockstream.com/technology/>.

<sup>74</sup> See *id.* (Chapter 3.2 Basic Branching and Merging <https://git-scm.com/book/en/v2/Git-Branching-Basic-Branching-and-Merging>).

<sup>75</sup> See Reyes *supra* note 3.

## i. Branching: Free Expression, Association, and Equality

In pseudo code, the definition of the legislative create branch transaction would look like this...

```
new Branch mybranch = oldbranch.createNewFrom(Owner mybranchowner);
```

The current law, maintained by the federal register, is the ultimate source for all branches and would be the ultimate destination for all mergers. All members of the House are therefore joint owners of this “root” branch. Parties, coalitions, interest groups, and rent-seekers all “branch out” from the root branch.

We start with a hypothetical example; the Republican party creates a Republican Party Branch by identifying the current U.S.C. as the existing branch and the Republican party as the new branch’s owner. Because the Republican party can read from the current U.S.C., a new Republican Party Branch is created, despite Democrat Party opposition. This Republican branch is owned by the Republican members and so mergers into this branch would require Republican approval.

In general, to create a new branch one identifies both the source branch and the owner(s) of the new branch. Since the owner of a branch can change attributes of the branch, the owner can add

and remove members from the owner's group. Also, the creator must necessarily have permission to read the source branch because owners can control who can view the branch.<sup>76</sup>

With the only requirement for making a branch being an ability to view the existing branch, the next step for the Republican party could be to make a Draft branch of the Republican Party Branch that was not visible to the Democrat Party. The Democrat Party could make a branch of the main Republican Party Branch, for comparison sake, but cannot sub-branch the Republican Party's Draft branch without access. On and on the sub-division goes, from national to state, from city to city, from party to party.

This branching not only preserves party leadership but permits the formation of an infinite number of committees, coalitions, parties, and voting blocks. Because each "leaf" branch derives from an ancestral lineage that traces its heritage back to the root branch, different specialists can inherit changes from each other without having to "re-invent the wheel." Tools exist to automate the "propagation of changes from root to leaf, but any conflicts would still need to be resolved.<sup>77</sup> Such diversity over such a large document set would be impossible were it not for computers.

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<sup>76</sup> In blockchains, this is known as a sidechain. *See* Back *supra* note 72.

<sup>77</sup> *See* Git Pro, Chapter 3.6 Branching - Rebasing <https://git-scm.com/book/en/v2/Git-Branching-Rebasing>

## ii. Merging: Consolidating Ideas has a Statutory Cost

While branching is top-down deconstruction, merger is a bottom-up assembly. Also, the terminology has shifted from (branch - old/new) to (merge - source/target). In merging, it is important to recognize that common ancestry is not required, but it does minimize unintended consequences. To stay current, leaf branches (narrowly created branches by small groups or individuals far from the root branch) should accept regular updates from their intended target branches. For example, a special interest group was working on a narrow issue intending to receive bipartisan support should regularly accept “updating” mergers from both the Republican and Democrat branches.

The merge instigator prepares the merge by indicating the source and target branches and resolves any conflicts (such as deciding what happens when a source branch modifies a word in a sentence that was deleted on the target branch). Once a merger is ready for a vote, the system pends the merge until the owners of the target branch approve the merger. It is this control over merger requests that the adversarial nature of politics and a lack of trust among members requires a blockchain.

The rules of merger approval are static and should be codified into law because every party in the system will be using these rules to concur when they process each blockchain transaction. This is the equivalent of the rules in Bitcoin requiring transaction be zero-sum. While the variety

of rules are fixed *a priori*, the branch owners can change which rule will control the merger approval transaction.

There are three basic types of merger approval rules that the owners of branches can choose from. First, is the “always allow” option. This is good for initial drafting, low-stakes collaboration, and other such niceties. Second, is the “central control” option. This is good for traditional politics where the group surrenders control to central leadership person(s). Like the Ways and Means committee. Finally, the “voting” option. This option exemplifies the trust and security of the blockchain system to automatically keep track of all the members in the ownership group, by securely verifying the vote, and automatically processing the merger. Interestingly, the voting option can be extended into formulas more exotic than majority rule (such as “ranked choice multi-voting,” “virtual capital bidding,” or “delegated online surveys”).

This final automated merger, by an autonomous system, makes it practical to support tens of thousands of members. It is this feature that bypasses the need for leadership while respecting democracy. It is this feature that satisfies Madison’s warning against “a permanent elevation of the few on the depression of the many.”<sup>78</sup> It is this feature that economies of scale and free market forces may bear in reaching the best decision.

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<sup>78</sup> The Federalist No. LV. (Madison).

### iii. Differential Comparison: Free & Full Disclosure

Some mergers are impossible because the item changed in a source branch does not exist in the target branch. Other mergers are imprudent because they would create a paradox where a new module in the target branch contradicts the incoming change from the source branch. Because documents employ rules of grammar, automated tests can perform a large part of the controls that regulate mergers and provide the antagonist with guidance. Such automation enhances the comparison and ensures full disclosure. Between automated differential analysis and human review, software engineering processes have evolved to produce stable systems of ever increasing complexity.<sup>79</sup>

## C. Low-Cost Third-Party-Mediated Transactions

The key differences between transactions in the existing 435 system and our new 30k system are: 1) low-cost, and 2) trust-less 3rd party mediation. These features can increase the frequency of voting without necessarily increasing the frequency of bicameral reconciliation. The bicameral process, leading to presentment, remains unchanged.

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<sup>79</sup> Much of this design proposal is based on the open source version control management system Git. *See generally* Git Basics, What is Version Control? <https://git-scm.com/video/what-is-version-control>

In the existing 435 system, many legislative ideas exist awaiting advancement by House leadership. With high transaction costs, only relatively mature legislation qualifies for costly legislative action. The qualification determination is made by House leadership. In our 30k system, low transaction costs are necessary because there are so many more transactions that need to take place for an idea, merging its way through all the branches, to eventually reach the final main-trunk “branch” that is ready for presentment to the president.

Our 30k system enables many paths, branching out from existing law and merging into new law, where each step on each path is one low-cost transaction. This is different from the existing 435 system’s high-cost low-rate single-file method.

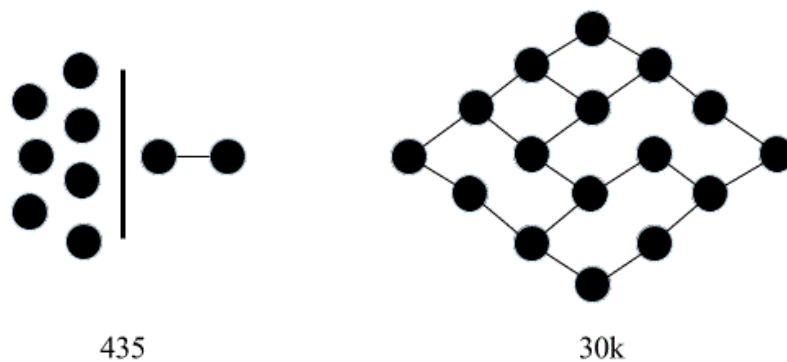


Figure 2 - This symbolic representation shows legislative ideas as black dots and legislative action as connecting black lines.

### III. THEORETICAL ANALYSIS

The average public approval rating of Congress since 1974 is 31%.<sup>80</sup> For Gallup to be 95% confident that their margin of error was  $\pm 1\%$ , Gallup had to survey 12,258 adults. Typically, political research polling, samples between 1,000 and 1,500 people to get an answer that is within a margin of error of  $\pm 3\%$ .<sup>81</sup> This sounds good, but even a representative group of this size can be wrong.<sup>82</sup> While larger sample sizes will bring greater confidence in a correct result, for a country of over 300 million people, somewhere much less than 300 million people can provide an accurate prediction. So, statistically speaking, the Constitutional ratio of 1:30,000 is simply more accurate and is in line with modern polling methods.<sup>83</sup>

From yet another perspective, since the amount of text in the combined U.S.C. and C.F.R. is on par with the amount of code in Microsoft's Windows operating system, we can compare the research and development resources Microsoft spends on Windows with Congress (the Federal Government's "research and development" division).<sup>84</sup> In 2016, Microsoft's R&D employed

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<sup>80</sup> Gallop, *US Congressional Approval Averages Weak 17% for 2016* (December 15, 2016) <http://www.gallup.com/poll/199445/congressional-approval-averages-weak-2016.aspx>

<sup>81</sup> Pew Research, *Sampling*, <http://www.pewresearch.org/methodology/u-s-survey-research/sampling/> (last accessed Jan. 22, 2017).

<sup>82</sup> See Pew Research, *Why 2016 election polls missed their mark* (Nov. 9, 2016) <http://www.pewresearch.org/fact-tank/2016/11/09/why-2016-election-polls-missed-their-mark/>

<sup>83</sup> Supra note, Pew *Sampling* (10,000 samples would yield a  $\pm 1\%$  margin of error while 400 samples yields a  $\pm 5\%$  margin of error.  $\pm 1\%$  would, with 95% confidence, detect a 52/48 split while  $\pm 5\%$  could miss a 55/45 split).

<sup>84</sup> Assuming the following: 100 lines of computer code equals one page of legislation, Windows 8 has an estimated 50 million lines of code the equivalent of 500,000 pages. The C.F.R. has 180,000 pages.

about 12,500 people and spent \$4 billion.<sup>85</sup> This is similar to Congress where total 2016 spending for the legislative branch was \$4.4 billion<sup>86</sup> and involved some 20,000 people.<sup>87</sup> From a business perspective, 10,306 elected representatives are in line with corporate expectations. If we paid these 10,306 House representatives the national median wage, instead of the current representative's salary, Congress could save \$90 million every year.<sup>88</sup>

## **A. Congressional organization and agenda setting power**

Theories of Congressional organization have been developed to model the various forces inside deliberative bodies. The actors have at times varied between party bosses and committee chairs,

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<https://regulatorystudies.columbian.gwu.edu/sites/regulatorystudies.columbian.gwu.edu/files/downloads/Pages-in-the-federal-register-2014.png>. Sampling the U.S.C. through the United States Legislative Markup predicts another 500,000 pages for a total of 680,000 pages combined C.F.R. and U.S.C. (if 218 KB of markup yields 192 pages, then 580 MB would yield ~ 500,000 pages) <http://uscode.house.gov/download/download.shtml>.

<sup>85</sup> Microsoft is divided into 3 divisions, figures represent 1/3 of total R&D effort. Microsoft Corp. SEC 10-K <http://apps.shareholder.com/sec/viewerContent.aspx?companyid=MSFT&docid=11509606>

<sup>86</sup> U.S. Senate, FY 2016 Legislative Branch Appropriations Bill Omnibus Agreement Summary, <http://www.appropriations.senate.gov/imo/media/doc/LEGBRANCH-OMNI-SUMMARY.pdf>

<sup>87</sup> 11,143 registered lobbyists in 2016. Center for Responsive Politics, Lobbying, (last accessed Mar. 16, 2017) <https://www.opensecrets.org/lobby/>. 8,853 house staffers (2009), Brookings, Vital Statistics on Congress (Jul. 11, 2013) [https://www.brookings.edu/wp-content/uploads/2016/06/Vital-Statistics-Chapter-5-Congressional-Staff-and-Operating-Expenses\\_UPDATE.pdf](https://www.brookings.edu/wp-content/uploads/2016/06/Vital-Statistics-Chapter-5-Congressional-Staff-and-Operating-Expenses_UPDATE.pdf). Plus 100 senators and 435 representatives for a total of 20,531 people.

<sup>88</sup> National average wage in 2014 was \$46,482. Social Security Administration, *National Average Wage Index*, (last accessed Mar. 16, 2017) <https://www.ssa.gov/oact/cola/AWI.html>. Total spent on House Employees in 2015 was \$567,891,363.00. Legistorm, *House Salaries Over Time* (last accessed Mar. 16, 2017) [https://www.legistorm.com/salaries/house\\_totals.html](https://www.legistorm.com/salaries/house_totals.html).

but the levers of power are twofold: a) Positive Agenda Power (PAP) and Negative Agenda Power (NAP).<sup>89</sup>

In our 30k system, the rules of merger acceptance replace majority leadership control. As soon as proposed legislation satisfies the rules for acceptance, the automated transactional system advances that branch of proposed legislation. No longer relying on a floor vote, this automatic advancement eliminates NAP. Automatically accepting mergers ejects PAP from the leadership and distributes it among a multitude of committees, sub-committees, and regional caucuses.

The disappearance of NAP is not a bad thing. One of the defining characteristics of Congress in the years since WWII is the gradual rise of PAP and NAP, which appears to be a natural consequence of the consolidation of power after the fixing of the size at 435. Indeed, the nature of consolidated PAP and NAP reflects Madison's warning that "an oligarchic few would dominate with passion over reason."<sup>90</sup> Because so much of the power in the existing 435 system comes from a limitation of plenary time, a 30k system of autonomous transactional support would keep PAP in the real world of committees, parties, and coalitions.

Diverse and heterogeneous congresses often distribute NAP to ensure legislation does not pass contrary to the interests of the majority. On the other hand, significant events in history, such as

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<sup>89</sup> David W. Rohde, Edward H. Stiglitz & Barry R. Weingast, *Dynamic Theory of Congressional Organization*, 2013.

<sup>90</sup> The Federalist No. LVIII (Madison).

9/11 and a change in most political opinion, has a tendency to centralize both PAP and NAP as plenary time becomes more valuable. History suggests that a legislative body must be able to centralize the distribution of PAP and NAP.<sup>91</sup>

A 30k system should be difficult to change by powerful homogeneous majorities operating under the stress of a dramatic extrinsic situation. At the same time, it is self-defeating for a 30k system to be inflexible as emergencies arise. Enacting the rules of the system in federal statute would provide just the stability and flexibility. For example, sensitive subjects requiring security clearance will need careful consideration. Placing the rules of such a popular ~~the~~ legislative body within a statute compliments the market forces inherent of a popular system. The members of the market will require predictable rules of the game to operate effectively and an open legislative process should ensure that the rules of the 30k system do not favor committees or parties.

## **B. Interest groups, rent-seeking, and Social Choice Theory**

Madison feared that various interest groups, from time to time, would take over the government for their own advantage.<sup>92</sup> This can be seen in the 2002 tariffs imposed on imported steel that resulted in an estimated 10,000 steel jobs saved at a cost of 200,000 jobs in the wider U.S.

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<sup>91</sup> David W. Rohde, *Dynamic Theory of Congressional Organization*, 2013.

<sup>92</sup> Federalist No. X (Madison).

economy.<sup>93</sup> The underlying assumption is that government can identify the negative external costs and craft effective legislation to restore balance to the economy.<sup>94</sup> But the reality, as shown by these and other such tariffs, is that Congress sometimes acts against the public interests.

Our 30k system supports interest groups by the “branch” transaction. Any group with an idea can create a branch and solicit support from the owners of the base branch for a merger of its ideas. Unlike our 435 system, our 30k system would have many more eyes reviewing modifications to legislation and would be more likely to highlight and correct laws that act against the public interest.

Rent-seeking is the economic concept of private parties exerting political pressure on Congress to extract economic patents that restrict supply or raise prices.<sup>95</sup> Economists have shown that rent seekers are willing to spend resources up to the value of the rent to secure their rent.<sup>96</sup> While our 30k system does nothing to change this economic incentive, the resultant increase in House membership would dramatically raise the cost of private off-the-books deal making by 2400% because each 30k system member would have 2400% less influence than members of the 435 system do today. At such a scale, our 30k system could drive rent-seeking into the public discourse as the only way to effectively persuade enough members. Meritorious social media

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<sup>93</sup> Maxwell L. Stearns & Todd J. Zywicki, *Public Choice Concepts and Applications in Law*, 42 (2009).

<sup>94</sup> *Id.* at 45.

<sup>95</sup> *Id.* at 46.

<sup>96</sup> *Id.* at 59.

campaigns<sup>97</sup> could still cost less than *ad hoc* political campaign contributions, be more responsive, and less painful to all those involved.<sup>98</sup>

The Wilson-Hayes model of regulation identifies four legislative categories by crossing wide/narrow costs with wide/narrow benefits.<sup>99</sup> First, where the benefits and costs are widely distributed, legislation tends to be undersupplied because constituents express too little pressure.<sup>100</sup> Our 30k system can increase the supply of this legislation because transaction costs in the system are so low and there are more than enough members available to specialize on one or more branches targeted to narrow interests or technical specialties.

Second, where costs are widely distributed and the benefits are narrowly conferred.<sup>101</sup> In our current 435 system, small organized groups exert a disproportional amount of political pressure and often overcome general ambivalence, such as the steel tariffs example above.<sup>102</sup> Our 30k system places a high merit burden on this category of legislation. Still, the checks and balances in the Federal Government, such as the President's bully pulpit, the Senate and the Courts combine with contemporary media can promote righteous minorities to make their case.

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<sup>97</sup> Kris Kodrich & Melinda Laituri, *Making a Connection: Social Media's Key Role in the Haiti Earthquake*, 8 Journal of Communication and Computer 624, 626 (Aug. 31, 2011) ("The Red Cross' Haiti relief fund raised \$26 million through texting in just a couple of weeks").

<sup>98</sup> John Oliver, Congressional Fundraising: Last Week Tonight (April 3, 2016) <https://youtu.be/Ylomy1Aw9Hk>.

<sup>99</sup> Public Choice, *supra* at 69.

<sup>100</sup> *Id.*

<sup>101</sup> *Id.*

<sup>102</sup> *Id.*

Third, legislation with narrowly conferred costs and widely distributed benefits raise the specter of factional violence and unconstitutional discrimination.<sup>103</sup> Our 30k system does not solve this problem, but neither does it remove any of the checks and balances, or rights to equal protection and due process in the Constitution.

Finally, legislation with narrowly conferred costs and narrowly distributed benefits were traditionally delegated to executive agencies.<sup>104</sup> The limited resources of the 435 system's agenda prohibits involvement in such narrow issues, our 30k system is at least as capable of supplying such legislation as the 435 system. The Senate has never needed to match the pace of the House and has as always provided a balancing pressure against the shifting winds of public opinion. A 30k system provides room for increasing congressional involvement and oversight as reports. When necessary, an expanded House might add sufficient democratic legitimacy for the Senate to defer and quickly act on narrow legislation with broad public support.

In Social Choice Theory, a distinctly democratic layer of variability exists, in that one's second choice often depends on more than the fact that the first choice failed.<sup>105</sup> Depending on the order in which alternatives are presented for a vote, various coalitions can form temporary blocking

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<sup>103</sup> *Id.*

<sup>104</sup> *Id.*

<sup>105</sup> *Id.* at 101.

majorities.<sup>106</sup> Collective decision making bodies face a tension between reaching logical compromises and following pure democratic ideals.<sup>107</sup> Because the rules governing merger acceptance in our 30k system are defined by statute and implemented by computers, this tension can be eased by alternatives to traditional majority (50% + 1) rule. One alternative is to provide each member a limited number of voting capital each session, which the member then spends pursuant to their level of commitment to a merger. Another alternative is for members to rank their preferences and let the computer determine the most regarded option.

These theories of political control in Congress show that a 30k system would perform at least as well as the 435 system. Political parties would still exist to provide analysis and commentary on proposed legislation, much as they do today, while integrating *ad hoc* coalitions, 3rd parties, and other interest groups. It seems remarkable that the foresight of our founding fathers identified a ratio that matches modern methods of statistics and business while threatening the dynastic monarchies that believed the People were incapable of self-governance.

### **C. Judicial Legislating**

A great deal of political polarization can result from the failure of the legislative process to accurately reflect the will of the People. Conservatives argue that the Court has no business

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<sup>106</sup> *Id.* at 110.

<sup>107</sup> *Id.* at 107.

deciding issues like abortion and gay rights because only Congress has the power to deviate from traditional values and grant novel rights.<sup>108</sup> But on these issues, Congress increasingly lags public opinion.<sup>109</sup> Responding to majority public sentiment,<sup>110</sup> the liberals on the Court have found new rights under the penumbra of the Bill of Rights.<sup>111</sup> If the 30k system is more responsive to public opinion than the 435 system, then isolated or politically weak minorities need no longer be call upon the Court to safeguard minority rights.

Justice Scalia said “[a] choice between two positions on which reasonable people can disagree is constitutional.”<sup>112</sup> The problem is that because the 435 system is unlikely to accurately reflect the People, reasonable disagreements within the 435 system do not reflect actual disagreements among the People.

It is possible that much of public political discord of the last century has been a result of the ever-widening gap between the goals of the 435 system and interests of the People. For example,

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<sup>108</sup> *E.g. Planned Parenthood v. Casey*, 505 U.S. 833, 1001 (1992) (justice Scalia, dissenting) (“Value judgments, after all, should be voted on, not dictated”).

<sup>109</sup> A woman’s right to an abortion waits Congressional action, even though a clear majority of the public has long approved of abortion in at least some instances. Kristen L. Burge, *When it Rains it Pours: A Comprehensive Analysis of the Freedom of Choice Act and its Potential Fallout on Abortion Jurisprudence and Legislation*, 40 *Cumb. L. Rev.* 181, 242 (2010) (discussing the Freedom of Choice Act); Gallup, *Abortion Historical Trends* <http://www.gallup.com/poll/1576/abortion.aspx>.

<sup>110</sup> public support for birth control has been over 70% since surveying began in 1937. Roper Center for Public Opinion Research, *Public Attitudes about Birth Control* (last accessed, Mar. 19, 2017) <https://ropercenter.cornell.edu/public-attitudes-birth-control/>

<sup>111</sup> *Griswold v. Connecticut*, 381 U.S. 479, 483-84 (1965).

<sup>112</sup> *Casey* at 980 (justice Scalia, dissenting).

when women were finally granted the right to vote in 1920,<sup>113</sup> doubling the voting population; instead of doubling the size of the 435 system, Congress ended all pretext of a representational ratio just before the next decennial census in 1929.<sup>114</sup>

The Great Depression<sup>115</sup> thrust the Court out of its laissez-faire *Lochner* era jurisprudence (“If the law merely reflected political choices, there was no reason for the Court to overturn the decisions made by the political process”).<sup>116</sup> With the People backing Roosevelt’s push for dramatic change, in *West Coast Hotel Co. v. Parrish* the Court suddenly found that “regulation which is reasonable in relation to its subject and is adopted in the interests of the community is due process.”<sup>117</sup> To this day, the Court struggles with *Carolene Products*’ footnote 4, “whether prejudice against discrete and insular minorities may be a special condition, which tends seriously to curtail the *operation of those political processes* ordinarily to be relied upon to protect minorities.”<sup>118</sup> Given our analysis above, Congress may not be relied upon to protect righteous minorities.

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<sup>113</sup> U.S. Const. 19th Amend.

<sup>114</sup> *See supra I.*

<sup>115</sup> The great stock market crash began on “Black Thursday” October 24, 1929. Eugene N. White, *The Stock Market Boom and Crash of 1929 Revisited*, *The Journal of Economic Perspectives*, Vol. 4, No. 2, p 68 (1990).

<sup>116</sup> Chemerinsky, *Constitutional Law* 623 (4th ed.).

<sup>117</sup> *West Coast Hotel Co. v. Parrish*, 300 U.S. 379, 391 (1937).

<sup>118</sup> *U.S. v. Carolene Products Co.*, 304 U.S. 144, 152 n. 4 (1938) (emphases added).

Thus, the modern liberal-conservative judicial struggle is related in both time and substance. In less than a decade after the 435 fixation, the “operation of those political processes” had pressed the Court to apply strict scrutiny for liberty and equality. Our 30k system has the potential to depoliticize the Court by restoring the “operation of those political processes” to their Constitutionally ordained working order.

With a 30k system, 2400% more legislators would probably create more legislative discourse available to influence a court’s perspective on statutory interpretation. No more would appellate briefs refer to the whimsical mutterings of a few privileged people. Rather, advocates would have access to meaningful data that truly reflects the will of the people and the legislative intent. The productivity of the 30k system could produce a code of statutes that is more current and up to date. More members of the House would be more able to review existing statutes for inconsistencies and contradictions. Better statutes could have a profound effect on the deference judges give legislators.

## IV. CONCLUSIONS

The Federal Government derives its authority from the consent of the People.<sup>119</sup> That the House must accurately reflect the People is a fundamental right of the People.<sup>120</sup> While the Supreme

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<sup>119</sup> See *Marbury v. Madison*, 5 U.S. 137, 176 (1803).

<sup>120</sup> See *supra* I. History of 435

Court has declined to challenge 2 U.S.C. § 2a(a),<sup>121</sup> “laws that burden political speech are subject to strict scrutiny.”<sup>122</sup> Before our 30k system was possible, there was no way to show that the 435 system was not narrowly tailored. Nor is standing an issue, now that an alternative exists there is redressability.

There are many reasons for maximizing congressional representation, but tradition is no longer a legitimate reason.

President Obama, in a recent interview with NPR at the end of his presidency felt that the best way to right size the presidency was to have an effective Congress.<sup>123</sup> Much responsibility has been placed on the presidency for finding solutions to the problems of the country. But this misses the separation of powers because the President executes the laws that Congress passes. Congressional statistics show that between 81-91% of bills introduced since 1973 were introduced but had no further action.<sup>124</sup> As Congress may not assume any role of the executive, the President should not assume the role of the legislative. A functioning Congress could restore this balance.

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<sup>121</sup> *Clemons v. Dept. of Com.*, 562 U.S. 1105 (2010).

<sup>122</sup> *Citizens United v. Fed. Election Commn.*, 558 U.S. 310, 340 (2010).

<sup>123</sup> National Public Radio, *NPR's Exit Interview with President Obama* (Q: “has the presidency become too powerful?” A: “. . . Congress has become so dysfunctional, that more and more of the burden is placed on the agencies to fill in the gaps, and the gaps get bigger and bigger because they’re not constantly refreshed and tweaked.”) <http://www.npr.org/2016/12/19/504998487/transcript-and-video-nprs-exit-interview-with-president-obama>

<sup>124</sup> GovTrack, *Statistics and Historical Comparison* (last accessed Mar. 19, 2017) <https://www.govtrack.us/congress/bills/statistics>

The Office of Law Revision is encoding all U.S. statutes and legislative history into a computer readable format known as the United States Legislative Markup.<sup>125</sup> If we no longer craft statutes by pen, paper, and book but by bits of data in a computer, then there is no longer a limit to the number of people who can participate in the legislative process. Instead of the traditional gathering of a few inside a closed-door room, many thousands of ordinary citizens would be at home in their communities, interacting with each other accessing all of the proposed legislation and informing the public.

Software technology would surely have been a central tool the founding fathers would have incorporated into the design of our federal government. Messaging and word processing tools are already widely used in the legislative process to great effect. Taking the next step to upgrade democratic representation is possible given blockchains' potential for trustless transaction. What is missing today is a sense of connection to the federal government because people are ever more connected to the wider world. Videos and memes go viral and presidents tweet. Questions are spoken into phones or googled on tablets with obscure answers returning in milliseconds. Friends are counted and status updates are quantified with likes. As the generations that grew up with horse and buggy transportation gives way to generations that grew up with Snapchat and Facebook, there will be an expectation placed upon government to adapt.

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<sup>125</sup> Office of the Law Revision Counsel, U.S. House of Representatives, *United States Legislative Markup User Guide for the USLM Schema* (Oct. 2013) <http://uscode.house.gov/download/resources/USLM-User-Guide.pdf>

It may well be that the U.S. House remains as it is for generations to come, but democracy is worldwide. Since the current set of statutes is the seed for each session of Congress, the system resets with every Congress. With a system designed to reset, the same system can be used by any democratic organization or government. A single, open source digital platform for controlling the creation of legislation through limitless proportional representation that can adapt rapidly to changing attitudes all while implementing objectively fair rules of agenda setting control. Corporations, local municipalities, on-line social groups, and other inconceivable social orders may find a use for this 30k system. It is the elegant and timeless beauty of the Constitution that provides the vision.

It is both practical and constitutional to replace the leadership of the U.S. House of Representatives with an autonomously-mediated open-market for the development of new legislation. Congress should repeal 2 U.S.C. § 2a(a) and adopt new tools of legislation to ease the long-felt need for accurate representation in the U.S. House of Representatives. To change such a long-established institution as Congress requires the same faith in people that the founding fathers displayed when they rejected monarchy for democracy.