Coalitions at the Constitutional Convention

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Abstract

In trying to explain the U.S. Constitution, many scholars have disagreed about the number and nature of the critical coalitions at Constitutional Convention. We characterize the issues considered at the convention as three dimensions and then estimate ideological positions of the delegates and delegations at the Convention. From this structure we characterize three coalitions of state delegation: The Core Reform states (MA, PA, VA), The Deep South, (GA, NC, SC), and the Small States (CT, DE, NJ, NY, MD). These coalitions imply several things about the debates. First, the group traditionally called the large states was less cohesive than scholars sometimes imagine. Second, the critical, pivotal coalition for representation and for federalism was the Deep South in that they combined with the core reform states. However, when it comes to the strong presidency, the coalition shifted and was a combination of the Core Reform states and the some of the small states.

1 Introduction

The fundamental importance of the 1787 Constitutional Convention is indisputable, not only as a turning point in the history of the United States, but also as an event that continues to affect contemporary politics. The Constitution defines the structure and limits of the American system of government, and it organizes contemporary debates about policy and legal issues—debates that often explicitly invoke the intentions and actions of those delegates to the Convention. Accordingly, historians, lawyers, and social scientists have given the event lavish attention using a number of different methods and styles. The form and content of the document have been debated endlessly; narrative accounts of the Convention events and debates are plentiful; and there is no shortage of biography of the key delegates and actors. Virtually all of this scholarship emphasizes the importance of compromise between coalitions at the convention.

It might seem like all of this effort has already explained the Constitution and the politics that produced it. But, in truth, the deep structure of voting at the Convention has not really yet been mapped—or at least mapped consistently. Once we do that it becomes clear that many traditional stories are incomplete or excessively complicated. Herein we argue that there were three key factions at the Convention. It was the alliance of the core reformers with the slave interests that helped change representation and make a stronger national government. But when it came time to create a strong executive it was a group of small state delegates that provided the crucial votes to create a strong president. Traditional accounts gloss over the coalition politics that produced these important compromises. Our contribution is to show the specific voting alignments that created these compromises.

Traditionally, the literature explains the compromises by emphasizing two groups—the nationalist reformers and their small state opponents—argued the defining issues, a fight between "large" states and "small" states. To the degree that coalitions are described, they are often just described by size groups related to representation. The "large states" favored reforms against the "small states" who opposed such reforms.[1] It is true that the delegates came with common purposes, but they were divided by both interests and ideas into three cross-cutting factions. There was no persistent dominant coalition of reformers or nationalists,

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[1] The canonical large v. small distinction is usually given as the large states being Georgia, Massachusetts, North Carolina, South Carolin and Virginia with the small states being Connecticut, Delaware, Maryland, New Jersey and New York. New Hampshire is difficult to classify given that it only began voting in late July and so is often left off of the lists.

rather there was a series of minority factions allying with one another on the major issues to fashion the compromise.

Our larger book project is a reappraisal of that conventional story which argues that it was other factors such as "the institution of slavery and its consequences form the line of discrimination," as Madison put it at the Convention. The approach is to look at the deep structure of the shifting majorities at the Convention.

2   Literature on Convention Coalitions

On June 30, in the midst of the debates over the representation compromise, James Madison said

> the states were divided into different interests not by their difference of size, but by other circumstances; the most material of which resulted partly from climate, but principally from the effects of their having or not having slaves. These two causes concurred in forming the great division of interests in the U. States. It did not lie between the large & small States: it lay between the Northern & Southern. and if any defensive power were necessary, it ought to be mutually given to these two interests.

To our knowledge, this is the first example of any scholar attempting to explain the divisions and factions at the Constitutional Convention. Madison would not be the last. Charles Beard would attempt to separate the delegates into two groups—the personalty and the realty (Beard, 1913). McDonald (1958) provided a strong critique of Beard that demonstrates—sometimes with endless detail—that Beard oversimplified the Convention with his two categories. McDonald's categories are deeply complex, at one point consisting of thirty-six different categories (including individual delegates), though it is possible[2] to find essentially five groups. Sidney Ulmer (1966) found one fewer than that when he used factor analysis to suggest four different factions. Also relying on factor analysis, Calvin Jillson (1989) suggested five different groups that revolved in different coalitions depending upon the cleavages at any given moment. Slez and Martin (2007) similarly find a series of periods but emphasize the evolution of the positions and suggest five different groupings—though their specific model

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[2]Partially relying on Jillson's analysis (Jillson, 1989).

is one that emphasizes time and changes in coalition structure. LONDREGAN (NOTE, HIS MODEL WAS ALSO ESSENTIALLY 1D; BUT ALSO SPLIT IN TWO TIME PERIODS (THUS 2D?)) Finally, Heckelman and Dougherty (2013), using a one-dimensional model, suggest three key coalitions, while Londregan's [CITE] one and two-dimensional models identify a two coalition large/small state divide. A summary of these coalitions are provided in Table 1

Author	Group 1	Group 2	Group 3	Group 4	Group 5
Beard (1913)	Personalty: Connecticut, Georgia Massachusetts New Hampshire New York Pennsylvania Virginia	Realty: Delaware New Jersey North Carolina South Carolina			
Ulmer (1966)	Connecticut Delaware Maryland New Jersey New York	Georgia North Carolina South Carolina	Pennsylvania Virginia	Massachusetts New Hampshire	
McDonald (1958)	Georgia Massachusetts New Hampshire North Carolina South Carolina	Delaware New Jersey New York	Pennsylvania Virginia	Maryland	Connecticut
Londregan (1999)	Georgia Massachusetts New Hampshire Pennsylvania North Carolina South Carolina Virginia	Connecticut Delaware New Jersey New York			
Jillson (1989)	Delaware Maryland New Jersey New York	Georgia Massachusetts New Hampshire	Pennsylvania Virginia	North Carolina South Carolina	Connecticut
Slez and Martin (2007)	Connecticut Delaware New Jersey New York	Massachusetts Pennsylvania South Carolina	Georgia North Carolina Virginia	Massachusetts New Hampshire	Maryland
Dougherty and Heckelman (2013)	Delaware Georgia Massachusetts New Hampshire South Carolina Pennsylvania Virginia	Connecticut Maryland North Carolina	New Jersey New York		

Table 1: Coalition summary

Beard makes clear his own explanation for Convention voting early in the book.

Suppose it could be shown from the classification of the men who supported and opposed the Constitution that there was no line of property division at all; that is, that men owning substantially the same amounts of the same kinds of property

were equally divided on the matter of adoption or rejection—it would then become apparent that the Constitution had no ascertainable relation to economic groups or classes . . .

Suppose, on the other hand, that substantially all of the merchants money lenders, security holders, manufacturers, shippers, capitalists, and financiers and their professional associates are to be found on one side in support of the Constitution . . . would it not be pretty conclusively demonstrated that our fundamental laws was not the product of an abstraction known as "the whole people," but of group of economic interests which must have expected beneficial results from its adoption? (pp. 16-17).

Beard is obviously arguing that the second possibility is the true description of the Convention. The subsequent chapters are an argument (with limited evidence) for a class-based interpretation of the Constitution—that moneyed capital, or what Beard calls "the personalty"—worked to establish the Constitution as a bulwark against excessive democracy that could have harmed the core economic interests of that class. This property argument focuses on the question of bonds and securities held by particular leaders at the time.[3] Supposedly, this form of wealth requires protection from the "realty" class of debtors because the guarantee of a strong central government would clearly provide this upper-class with security against the vicissitudes of a democratic polity.

Beard extends this argument far beyond the convention debates, spending several chapters on the ratification conventions (see chapters eight and nine of his book), but the basic ideas always remain the same.[4] In its extreme form, Beard's thesis is that the Constitution is not the carefully considered outcome of a deliberative group of politician-scholars, but really the work of a consolidated elite expecting to benefit from the new government.

Before Beard, descriptions of the Convention would have largely described disinterested demigods, motivated solely by farsighted concern for the future, or, as Bancroft described them "forerunners of reform for the civilized world (Bancroft, 1882, p. 208)." Alan Gibson writes that "it is no exaggeration to suggest that Beard's book [*An Economic Interpretation of the Constitution of the United States*] is the most important work ever written on the American

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[3]Beard sometimes takes the argument down to the individual level. See, for instance, Beard's description of George Washington on p. 144.

[4]Gibson has called Beard's work "cryptic and duplicitous (Gibson, 2010, p. 21)," noting that the book has internal contradictions and inconsistencies. While we agree that the book is often hard to pin down, we think even critics who go as far as Gibson would agree with at least this presentation of the facts.

Founding, primarily because it liberated scholars to critically study the Founders rather than merely celebrate them" (Gibson, 2010, p. 19).

In some respects this is Beard's great contribution: to demystify the Convention. It is fair to say that among both historians and social scientists Beard's suggested coalitions have not aged well.

The first step in demolishing Beard's story was McDonald (1958), which provides a critique of Beard that demonstrates—sometimes with endless detail—that Beard oversimplified the Convention. For McDonald, this was only a precursor to deveoloping a more complex economic theory of how interests helped create the Convention. *E Pluribus Unum* (McDonald, 1965) is a treatment of the motives of the founding generation that was very sympathetic to economic motivations. The difference between his views and Beard's is best described by "parsimony." Though Beard collapsed everything into two categories, McDonald argues for a highly complex constellation of interests based in regional, occupational, wealth and social class positions. McDonald's picture is certainly strongly influenced by economic factors, though the overall portrait is not simple.

After McDonald's work, historians partially followed his lead in how they wrote about coalitions. They did emphasize economics and complexity, but often tended to fall back on a two-coalition structure. Main (1961), though he also talks much about private rights and conceptions of liberty, discusses coalitions that pit the middle-class yeoman farmers against urban centers of trade in a contest over how centralized power in the new government would be [5] Holton (2007) argues that the true framers of the Constitution were the middle-class men who reacted to an elitist group of "founders" in Philadelphia more interested in venture capital than in creating a stable central government. His picture of the Convention is one that verges on a conspiracy that was eventually overturned by the common man's attachment to his liberties. Bowen (1966) and Beeman (2010) also tended to talk about cosmopolitan nationalists against parochial interests opposing reform.

The work of describing specific coalitions remained with the social sciences as historians moved in less analytical direction. Sydney Ulmer was the first to do this in his 1966 piece on sub-group formation at the Constitutional Convention. He concluded that the "large state-small state dichotomy does not 'explain' our four groups" and that "the level of investment in the institution of slavery appears as a possible contributing factor in the grouping of particular

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[5]See also Beck (1972).

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states" (p. 303)—conclusions with which we will ultimately agree below.

In 1999—in two papers in the Political Methodology Section archive—John Londregan was the first to use item-response theory to distinguish the key coalitions. Though never published, Londregan's papers suggested the division between the large and small states. This was not dissimilar to the work of historians producing narrative accounts of the convention. Though, in the second paper, Londregan suggested a two-dimensional model it was essentially this distinction between reformers and supporters of the status quo that defined the coalitions. In this sense, Jillson's either one or two-dimensional models are the most parsimonious in the literature.

Calvin Jillson (1989) finds many more dimensions of conflict. Jillson offered a factor analytic model that identified two (or more) voting coalitions for five distinct periods of the convention. Jillson infers specific dimensions by examining the voting coalitions of the state delegations (not directly estimating the location of votes). Jillson's (typically) two-factor solution for five inferred periods suggests the coalitions listed above in Table 1. This is substantially different from the work of Londregan (and even most historians), but it is true that his named dimensions that produce the coalitions are not completely different from what came before, but do show an increased number of groups.

Slez and Martin (2007) offer a multidimensional scaling model that was applied to five periods (periods that were linked to Jillson's choices of periods) to produce five separate two-dimensional models. Our own grouping of their estimates is based on which states were linked in both the early and in the later periods they estimate. They strongly emphasize the temporal nature of the convention in order to point out that while "each . . . decision within the Convention fixed a previous point of contention, it also indirectly determined which issues would become viable points of conflict in the future (p. 42)." The key difference between our own work and their is the assumption that preferences tend to be more fixed and that the agenda unfolds around those preferences. Slez and Martin argued that the agenda was highly temporally constrained.

Heckelman and Dougherty (2013) are the last entry in the table and should be thought of as slightly different than all of the other entries. Their work is based on a single dimensional model that includes both states and delegates (one of the few models to do this). Their claim is that this dimension could be interpreted as a "localism to nationalism" scale (p. 409). Essentially they treat it as a measure of how "nationalistic" were individual delegates—

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"nationalism" being a label found in many of the previous works. The resulting estimates from this model produce a set of three groups, one largely corresponding to the large states, although with Delaware added to the mix—perhaps because of the single-dimensional nature of the model—with the other two groups splitting the smaller states, although North Carolina is grouped with Connecticut and Maryland.

The relevant literature suggests several key questions to test. First, how simple is the structure of the coalitions? Is it explainable as two groups? Second, does that explanation—as implied by much historical literature—boil down to large-states v. small states or nationalists v. localists? Finally, as mentioned by Ulmer (1966), how significant a role did slavery play in the Convention?

3 Theory on Testing Models & Ideal Points

In spatial models of voting, the legislator considers two positions, the "Yea" (bill proposal) position ω_j and the "Nay" (status quo) position $\mathbf{q}_j$, for $j = 1, \ldots, m$ roll calls. $\mathbf{q}_j$ reflects the positions of current policies (on d dimensions) in the ideological space when bill j is proposed. The proposal ω_j indicates the positions, if passed, of the new policies in d dimensions. The legislator votes "Yea" if $U_i(\omega_j) > U_i(\mathbf{q}_j)$. Following, Clinton, Jackman and Rivers (2004) and Martin and Quinn (2002), the utilities include a random component and are specified as a quadratic loss function:

$$U_i(\mathbf{q}_j) = -\|\mathbf{x}_i - \mathbf{q}_j\|^2 + \nu_{ij} \tag{1}$$

$$U_i(\omega_j) = -\|\mathbf{x}_i - \omega_j\|^2 + \eta_{ij}. \tag{2}$$

where η_{ij} and ν_{ij} are error terms, which we assume are Type-I extreme value (for logit links), and $\mathbf{x}_i$ is a vector of ideological positions in a d dimensional space. The distance between the ideal points and status quo (bill) positions are measured by the square of the Euclidean norm $\|\cdot\|$.

Estimates of the proposal and status quo positions cannot be recovered from this model if there are two or more dimensions, since there is no accounting of the evolution of the agenda. Clinton and Meirowitz (2001, 2004) extend this model by incorporating changes (or lack of changes) in the status quo directly into the estimation. If proposal ω_j passes, then

the new status quo point equals this proposal: $\mathbf{q}_{j+1} = \boldsymbol{\omega}_j$. If $\boldsymbol{\omega}_j$ fails, then the status quo remains unchanged: $\mathbf{q}_{j+1} = \mathbf{q}_j$. Second, if a proposal does not concern dimension d, even if $\boldsymbol{\omega}_j$ passes, the coordinates of the status quo for irrelevant dimensions will remain unchanged: $q_{j+1,d} = q_{j,d}$. By imposing these constraints, one can directly estimate the status quo points, proposals and effectively see the unfolding agenda. The parameters $\mathbf{q}_j$ and $\boldsymbol{\omega}_j$ are represented as $\boldsymbol{\theta}$, indexed by $y(j)$ and $n(j)$, where $\mathbf{q}_j = \boldsymbol{\theta}_{n(j)}$ and $\boldsymbol{\omega}_j = \boldsymbol{\theta}_{y(j)}$. The estimated model, in utility differences, is

$$y_{ij}^* = \|\mathbf{x}_i - \boldsymbol{\theta}_{n(j)}\|^2 - \|\mathbf{x}_i - \boldsymbol{\theta}_{y(j)}\|^2 + \varepsilon_{ij} \tag{3}$$

Aggregation is a complication and requires caution when discussing the "ideal point" of state k. An estimate of $\mathbf{x}_k$ with a low score representation and federalism reflects a state delegation that supports equal voting among states and a limited national government.[6] We consider the recovered position as simply the reflection of a representative (and artificial) individual actor with a position consistent with the voting record of the state. Our minimum requirement in connecting this position with the individual delegates is that if the delegates of the state have identical preferences, then this common preference will be represented in the estimated position of this representative actor. This holds, and is the equilibrium position, since we assume identical (quadratic) utility functions for all delegates, and also assume this artificial actor perceives the votes the same way as individual delegates; i.e., that the vote parameters $\boldsymbol{\omega}$ and $\mathbf{q}$ are constant across individuals and states. The latter assumption implies that the definition of the issue space is the same for states and individuals, consistent with research by historians, who do not often distinguish the two levels of voting. The assumption would fail if the vote by a delegation did not reflect the majority opinion. That would occur if delegates strategically misrepresented their preferences. In our context though, we assume (quite reasonably, and typical of all ideal point estimation) sincere voting, and in any case, delegates within a delegation on a particular vote cannot manipulate an agenda determined separately by the entire convention of delegates.

It is also possible for states to become deadlocked on any particular vote. How should

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[6]This position is not necessarily a central or average position among the delegates, nor is there any expectation of symmetry of delegates around this position. We do expect the position to be interior to the configuration of delegate positions though. In part, this is because for most of the votes (94 of 124) the proposal changes only one of the three issue dimensions. In such one dimensional decisions, the equilibrium position is the dimension median. This preponderance of one dimensional decisions will likely result in an interior, and perhaps more central position (but not necessarily a multidimensional median or average).

these votes be addressed? If divided votes are treated as missing, as in all previous analyses, one loses important information about the states' revealed positions. Following the approach in Pope and Treier (2011), we express the stalemate as the delegation split evenly between "Yea" and "Nay" positions. The resulting behavior results in a revealed position close to the cutline, the closeness measured by parameter δ. Since some states are more likely to be divided than others, we estimate separate δ_k for each state. One obvious factor was whether the delegation was small or large, odd or even. Also, some delegations had several opposing state political factions represented, whereas others were more homogenous. Consequently, if two states have the same x_k, the state with the larger δ_k will be more likely to vote "Divided." The approach incorporates the model of Sanders (1998, 2001) within the quadratic utility measurement model, with a decision rule

$$
y_{kj} = \begin{cases} \text{"Yea"} & \text{if } U_{kj}(\boldsymbol{\omega}_j) - U_{kj}(\mathbf{q}_j) > \delta_k \\ \text{"Nay"} & \text{if } U_{kj}(\boldsymbol{\omega}_j) - U_{kj}(\mathbf{q}_j) < -\delta_k \\ \text{"Divided"} & \text{if } -\delta_k \leq U_{kj}(\boldsymbol{\omega}_j) - U_{kj}(\mathbf{q}_j) \leq \delta_k \end{cases}
$$

This is equivalent to an ordered model with state specific thresholds $\boldsymbol{\tau}$ that are common across votes, with the restriction that $\tau_1 = -\tau_2$. As long as the state has been divided on a roll call at least once, δ_k is estimable.

We will estimate ideal points of individual delegates, using inferred votes, jointly with the state position model. The estimated model, in utility differences, is

$$
y_{ikj}^* = \|\mathbf{d}_{ik} - \boldsymbol{\theta}_{n(j)}\|^2 - \|\mathbf{d}_{ik} - \boldsymbol{\theta}_{y(j)}\|^2 + \varepsilon_{ikj} \tag{4}
$$

where $\mathbf{d}_{ik}$ is a matrix of ideological positions in a d dimensional space. The model is a straightforward representation of the binary-choice Clinton-Meirowitz model. We connect the individual model to the state model in the following manner. First, the vote paramters $\boldsymbol{\omega}$ and $\mathbf{q}$ are constant across individuals and states. Second, the individual delegate ideal points are connected to the state positions hierarchically; the position of the state delegation x_k is the prior mean for delegate ideal point $\mathbf{d}_{ik}$: $\mathbf{d}_{ik} \sim N(\mathbf{x}_k, 1)$, with $\mathbf{x}_k \sim N(0, 1)$. Without any additional information, our prior belief is that the individual delegate is the same as the representation of the state. If the delegate's votes are in complete congruence with state, the delegate will have approximately same position as the state. If the delegate contradicts the

vote of the state frequently, then the delegate ideal point will deviate substantially from the state position—an approach identical to a formulation where individual estimates are simply deviations from a state component.

With only a few exceptions the delegates simply revised the text, clause-by-clause, in general the status quo was only changed incrementally—sometimes on all of the dimensions, but sometimes only on one or two dimensions. In the model all of the votes are pre-categorized by germaneness to each dimension (all labelled in the replication file). In order to identify this model, we anchor the representation dimension, Vote 40 is set to -1 (implying equal representation in the Senate). Similarly, other votes are fixed on particular dimension: Vote 41 is set to 1 on the representation dimension (implying proportional representation in the Senate). On the federalism dimension, Vote 29 is set to -1 (state legislatures would elect representatives instead of ordinary voters) and vote 34 is set to 1 (a national negative on state laws). Finally, for the national institutions (separation of powers) dimension, vote 183 is set to 1 (president chosen by elections) and vote 215 set to -1 (a change in selection of the president from electors to legislature). The initial status quo (the Articles of Confederation) is anchored at (-1.5, -1.5, -1.5).

This hierarchical model substantially reduces problems with missing individual votes.[7] In absence of contrary voting behavior by the delegate, we expect the delegate's position to be related to the state. Nevertheless, we still allow for these positions to deviate substantially from the state position. The posterior distribution for this model is

$$f(\mathbf{x}, \mathbf{d}, \boldsymbol{\theta}, \delta | \mathbf{Y}) = \prod_k f(\mathbf{y}_k | \boldsymbol{\theta}, \delta_k, \mathbf{x}_k) f(\mathbf{x}_k) \left(\prod_{i=1}^{n_k} f(\mathbf{y}_{ik} | \boldsymbol{\theta}, \mathbf{d}_{ik}) f(\mathbf{d}_{ik} | \mathbf{x}_k) \right) f(\boldsymbol{\theta}) f(\delta)$$

The model is estimated in WinBUGS 1.4.3. Given that there is no reduction in equation 4, the vote parameters $\boldsymbol{\theta}$ and the state delegation and individual delegate positions $\mathbf{x}$ and $\mathbf{d}$ are estimated through separate random walk Metropolis sampling from normal proposal densities, and the divided vote parameters δ from slice sampling.

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[7]Note, missing votes are not imputed in this analysis. Due to local independence of the ideal point model (conditional on the positions of delegates, status quo and proposal), individual delegates (and states) appear in the analysis only on votes for which we have recorded positions.

4   Dimensionality of the Convention

Scholarship on the Convention is complicated because when scholars from different backgrounds and disciplines pose questions they will answer them in many different ways. Theories, methodologies and standards of evidence are not always compatible. Before we can ask which interests explain voting, we need to have a clear idea of the dimensions of the early debate so as to know what to model. Narrative histories often speak about a debate over "nationalism" and a stronger central government—Clinton Rossiter (1966) actually titles his chapter about the opening of the Convention the "Assault of the Nationalists" (p. 159). The problem with this labeling is that it obscures multiple, distinct dimensions to nationalism: representation, the design of the new government, and the strength of the new government relative to the states.

It is well known that Madison believed representation should be proportional to the population of the states (Rossiter describes this issue as the "one large thing" that "divided them," p. 180.) And there is not a narrative account of the Convention, with which we are familiar, that does not emphasize representation as central to the first two months of debate (Beeman, 2010; Bowen, 1966; McDonald, 1965; Rakove, 1996; Roche, 1961). But this dimension was hardly the only element of nationalization. Accounts that lump the powers and design of the national government in with representation are suggesting that multiple issues can be described using the same dimension. So when Rossiter describes the "assault of the nationalists" he is really talking about multiple dimensions of conflict. In fact we know that delegates explicitly recognized some of these distinct dimensions. Beeman (2010) writes of George Read's (DE) beliefs that

> any new constitution ought to give the new government explicit supremacy over those governments of the individual states and that the new national legislature should have a veto over any state laws that might conflict with those of the central government . . . . But while Read was prepared to grant the central government sovereign power over the individual states, he was unwilling to change the essential element of the Articles of Confederation that protected the sovereignty of those states (p. 72).

Equal state representation in the legislature was vital for Read. His position exemplifies how the debates had at least two distinct dimensions: proportional representation and the division

of power between the national government and the states. What explains one dimension might have little to do with the other.

The discipline of building an empirical model of the Convention forces us to be clear about dimensions of debate, rather than simply treating them all as an example of "nationalism." Indeed, much of the empirical work on the Convention does utilize multiple dimensions (Londregan, 1999; Jillson, 1989; Dougherty and Heckelman, 2006; Slez and Martin, 2007; Pope and Treier, 2012). However the best empirical work on *economic interests* at the Convention does not focus on general dimensions. McGuire (2003) and Heckelman and Dougherty (2010) both address the question of how economic interests affected voting at the Convention. Both are largely limited to a small number of votes on specific economic issues, though McGuire does talk about the available set of votes as making up a "nationalism" dimension (see, e.g., pp. 120 - 127). We are left with a situation where the best work on voting at the Convention suggests that there are multiple dimensions, but the empirical tests of how economic interests affected those dimensions either focus on specific votes or treat all of the votes as a single "nationalism" dimension. To test the influence of economic interests on the deep structure of voting at the Convention we want a model of multiple dimensions that includes a regression component to test for economic interests across different dimensions.

As the first to explicitly offer an economic model of the Convention, Charles Beard is most famous for his simple thesis that the type of wealth mattered: personal wealth in liquid capital (the "personalty") worked against wealth in land and real estate (the "realty") to create a reformed constitution. Less well known is that Beard also offers some guidance on the dimensions of the Convention. In his chapter six, "The Constitution As An Economic Document" Beard lays out the case for how economic forces affected different dimensions of the document that would become the U.S. Constitution. Beard opens this chapter with a discussion of how one needs to think about the Constitution and how *The Federalist* explains the economic content. Then he divides the rest of the chapter by several headings.

- The Underlying Political Science of the Constitution

- The Structure of Government or the Balance of Powers

- The Powers Conferred Upon the Federal Government

- Restrictions Laid Upon State Legislatures

It is easy to see three dimensions that come out of this discussion: *representation*;[8] *national institutional design* or the balance of powers within the government; and *federalism* or the division between the federal government and the state governments. Beard's thesis appears to be that certain economic interests would take the same set of positions on all questions of reform: change the basis of representation to protect property rights; strengthen the national government's power; but also make sure property interests are powerful within that government by limiting the ability of a majority in the legislature to seize property.

Scholars have offered other dimensions. **?** argues for representation and the scope and power of the national government. Jillson (1989) consistently reinterprets his throughout the convention depending on the time period using such labels as regionalism, state size and presidential power among others. Consistent with Beard's delineation of the broad issue dimensions described above, we utilize a three-dimensional model of the Convention through the period we are studying. Though many authors use a two-dimensional framework (**?**Dougherty and Heckelman, 2006; Pope and Treier, 2011), Pope and Treier (2012) suggest that a three-dimensional framework is the best fit to the Convention data, which also fits Beard's description of the major issues.[9]

5 Convention Data

One clear advantage of a Bayesian estimation process is that it becomes simple to handle missing data. The model simply incorporates whatever information we can provide. To supplement the information in the model we carefully went through the notes of the Convention to see where we could add information about specific individuals. This process, though laborious, can be described fairly quickly.[10]

First, we take the information already available on specific votes in the Convention (McDonald, 1958; McGuire, 2003). For instance, Madison records the votes of individual delegates for a few votes. One particular case is the vote on July 16 to approve the Great Compromise (Farrand, 1913). If we were limited to this type of information we would only have a handful of votes, but it is a good place to begin as the votes are generally not considered to be controversial. However, that provides information only on a handful of votes spread throughout

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[8]Writing about the underlying political science, he references Madison on representation.

[9]Beard's actual separation of delegates into two groups based on economic interests was much more simplistic, implying that the same groups divided on all three issues, thus reducing his implied dimension to one.

[10]See Dougherty and Heckelman (2008) for a similar procedure to the one described here.

the convention. Voting was, of course, done by state, even though individual delegates had positions and preferences that can sometimes be inferred from their speeches, motions, and attendance. Most of this information is taken from Madison's notes. although some comes from other delegate notes.

To supplement that, we went through all of the notes and looked for any indication that a legislator approved of or opposed a proposal and then coding them as such with respect to specific roll call votes (Farrand, 1913). The most common form of approval or disapproval was to make a motion or second a motion on a question. For instance, on p. 35 of Farrand we read that Mr. Read motioned and Mr. C.C. Pinckney seconded a motion to amend one of Randolph's proposals about the form of government. Such motions and indications are scattered throughout the the notes.

We can in some instance go beyond looking at motions as in many cases a delegate made a speech that clearly indicated support or opposition to a key proposal or a series of proposals.[11] For instance on p. 214 of Farrand we read that Ellsworth favored a three year term for representatives. He did not make the motion or second it, but he speaks in favor of it. Such a procedure is probably not foolproof (and we continue to check every decision that we have made), but it does yield a dataset of votes where we can code each delegate as voting "Aye," "Nay" or—and this is the most common case—unknown.

But even this small amount of data on each delegate's position can be combined with other knowledge about attendance to yield even more information. For instance, several delegations (such as Massachusetts) were relatively small and conveniently made up of an even number of delegates. In such cases we are occasionally able to calculate a delegate vote by knowing both attendance and some other votes. If we know that Massachusetts voted divided, and we know that two delegates made a motion or spoke in favor of a particular question, we can assume that the other two delegates must have voted against the motion to produce the divided vote. Similar logical rules were employed throughout the process to analyze the positions of delegates up through July 31.

Figure 1 displays the amount of data we have available, based on the above procedures, for each delegate. Obviously, it is an imperfect sample. Some delegates like Madison, Wilson, Luther Martin among others have a great deal of additional information. In contrast there are

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[11]A future appendix will declare coding of all individuals along with delegation voting, but see also the datasets from our past work.

a few delegates like McClurg, Blair and Carroll, where the additional information is only a handful of votes. However, the advantage of the Bayesian procedure is that it leverages the information we have available to use for the estimation.
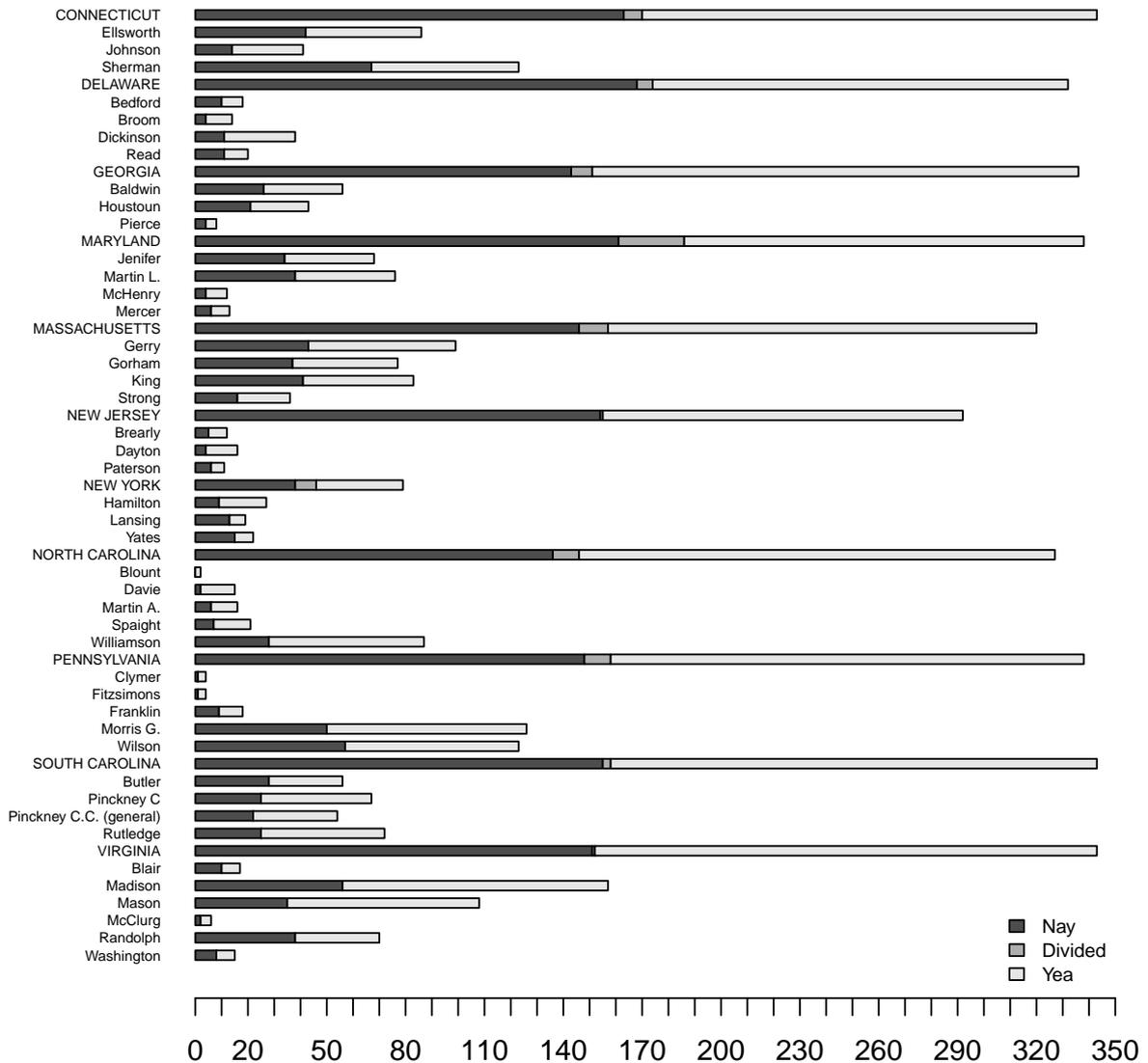

Figure 1: Delegation and individual delegate votes available.

Figure 2 is similar to Figure 1 in that it displays all of the voting that took place at the Convention for which we were able to make an inference. States obviously have much higher coverage than do individuals. And individuals vary by their propensity to speak, there general involvement in the convention, and our ability to draw inferences based on the delegation.
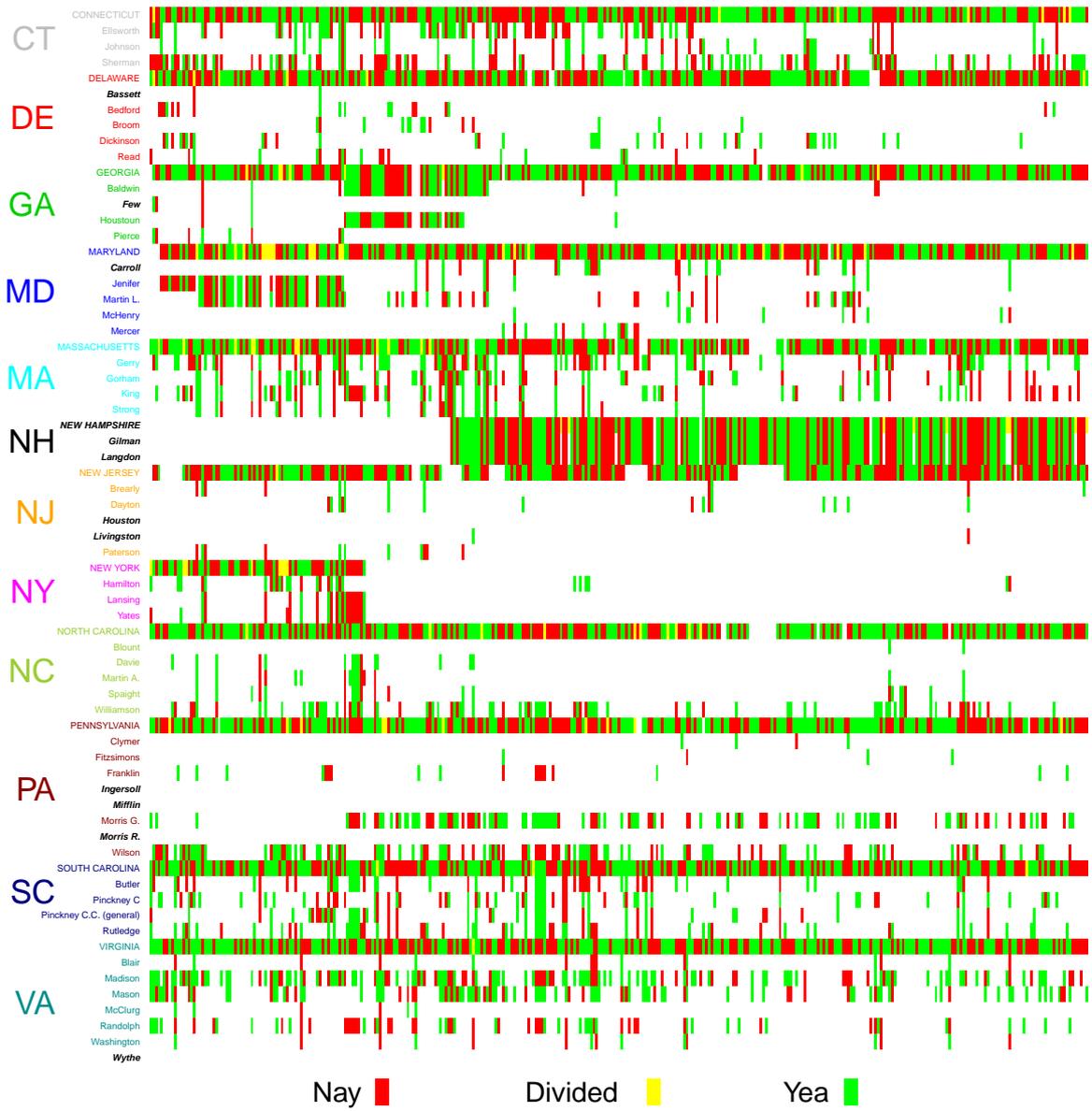
Figure 2: Delegation and delegate inferred positions for all votes at the convention grouped by state.

We turn now to the results from our model.

6 Results on Coalitions

Figure 3 displays the estimated ideal points in a series panels for a three-dimensional model. Higher values on each dimension display a preference for reform on that dimension and strengthening the national government in various ways—representation, federal power and a stronger executive. Inspection of the ideal points reveals that there are likely three groups. At least one of which is keyed to the south—delegations in light green, navy and dark green. The smaller states can be seen generally on the left in each of the panels, states like New York, Maryland, Delaware, New Jersey, Connecticut and Maryland. However, we emphasize that this pattern is not always apparent. For instance, when looking at the executive independence dimension. it is clear that there is less differentiation between all of the states and some of the southern states are less enthusiastic about reform.
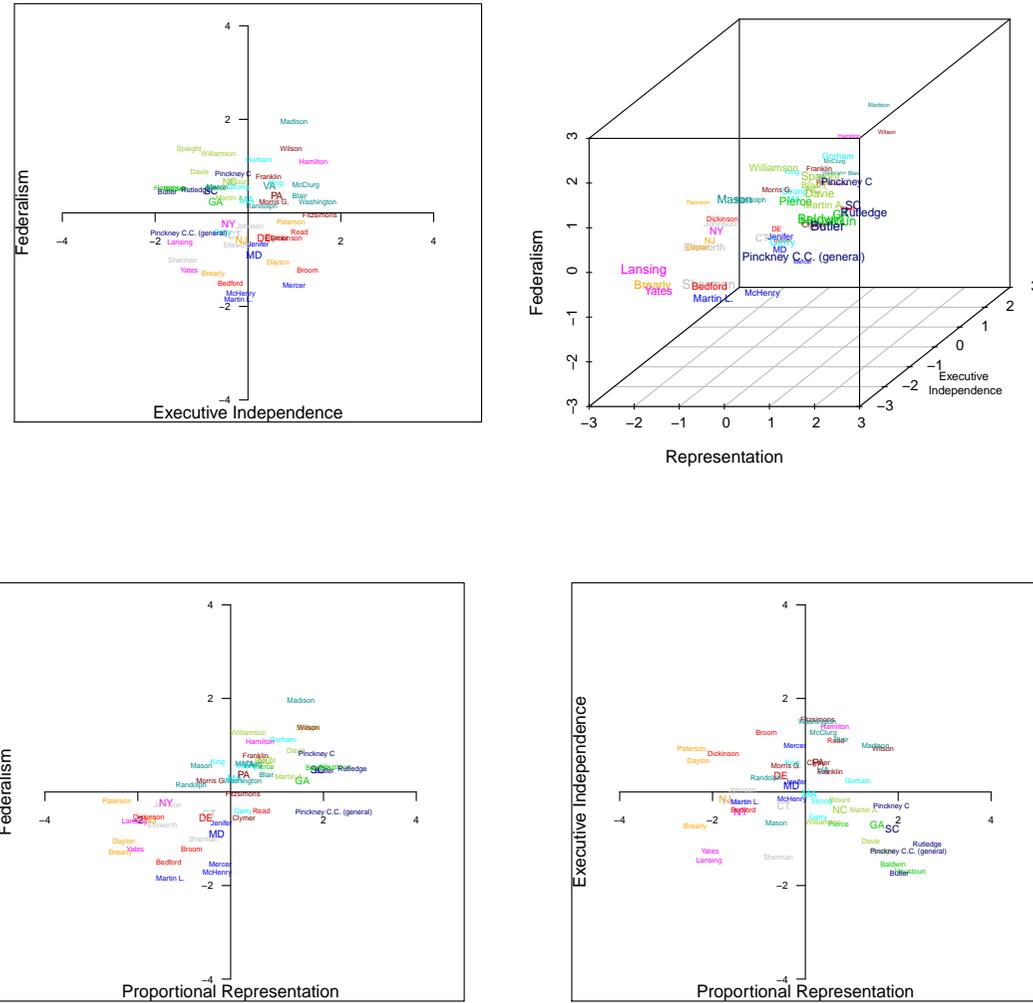
Figure 3: Three dimensional ideal points including 2D views in the upper left and bottom two panels. Delegations are color-cded by state.

Figure 4 is probably easier to read in that it simply displays the estimates from a three-dimensional model separated out dimension by dimension and color-coded by state delegation. Again, higher values denote a preference for reform and change away from the status quo. It is easiest to see here that certain delegations have a much stronger preference for reform on certain dimensions. A group of states, such as Virginia, Pennsylvania and Massachusetts could be considered the core reform states that want to dramatically change the status quo on every single dimension. In contrast to that preference, the Deep South—Georgia and the Carolinas—are extremely in favor changing the basis of representation, and are generally in favor of changing federal power. They are probably somewhat more reluctant about federalism, perhaps because of their slave economies. As a group they are skeptical of executive independence.
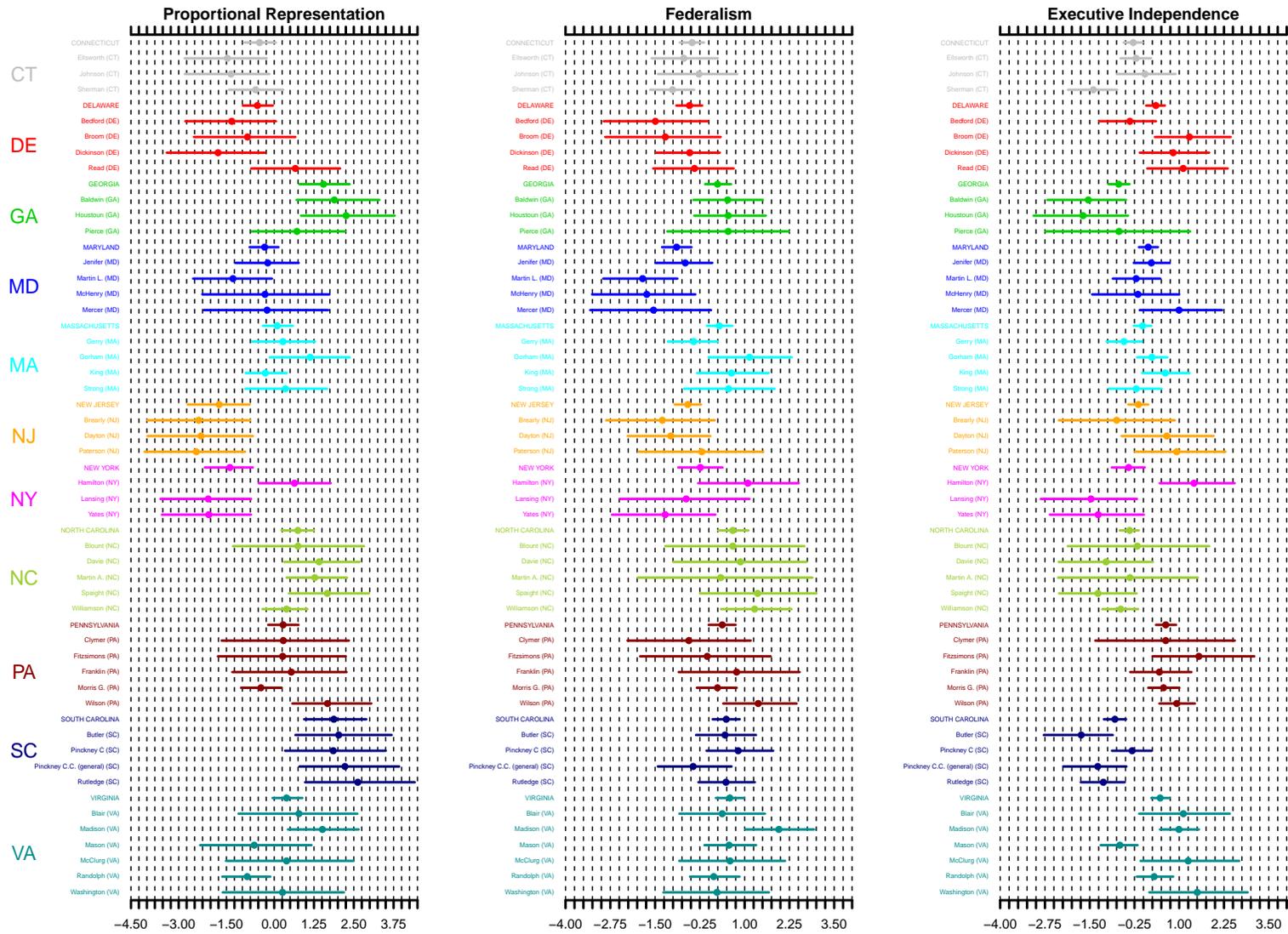
Figure 4: Individual and state estimates color coded by state delegation

Finally, in that figure we see the traditional group of small states that may be in favor of some change from the Articles of Confederation, but are not enthusiastic about dramatic change on any of these dimensions. The exception is that, as a group they are more enthusiastic about an independent executive than are some of the Deep South delegates who favored power in the legislature over the presidency.

Are the coalitions that we identified with visual inspection supported by the data? Figure 5 displays the three coalitions (ignoring individual delegations). The estimated clusters here correspond very well to simple visual inspection of the ideal points. The exception is North Carolina which clusters slightly better with the core reform states than it does with the rest of the Deep South. Note that this clustering is applied to the mean ideal point positions of the states. Applying this to the entire MCMC sample, iteration by iteration, indeed turns out to be the most likely structure (33.8%). However, our inspected structure that groups North Carolina with the Deep South is the second most likely structure (18.2%). However one classifies North Carolina they are deeply interested in the reform project as long as it favors slave interests. Some of the time they voted most closely with the core reform states, but other times looked just like the Deep South depending on the issue.
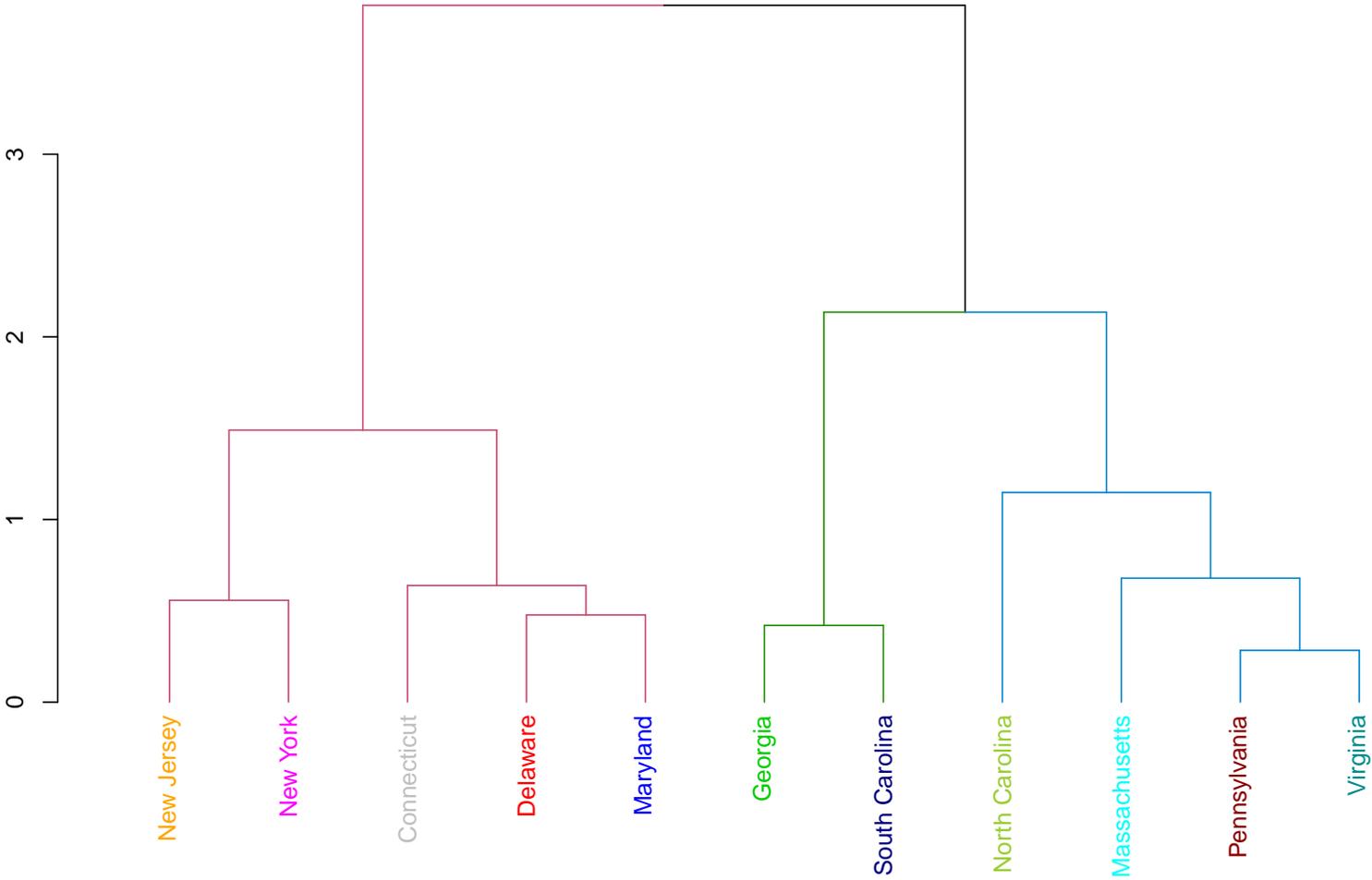
Figure 5: Clusters of State Delegations

Figure 6 includes the individual delegates and shows a six-cluster model that looks at the individuals alone. We found that the number of clusters was somewhere four and six. This figure shows the largest number of clusters for the individuals only. It corresponds to our visual inspection of the ideal points reasonably well. The core reform states are easily seen in that those delegations (in light blue, aqua and brown) tend to cluster together, though there are exceptions like Washington who clusters with the mid-Atlantic state delegates.

One very interesting point about this cluster is that the three delegates who refused to sign the constitution—Elbridge Gerry, Edmund Randolph and George Mason—all cluster together.[12] It is clear also that the most nationalist delegates—Alexander Hamilton, James Wilson and James Madison—all cluster together suggesting that the model is picking up on their behavior well.

States like Maryland and New York that were often divided, are separated into different clusters. Similarly, Roger Sherman who often opposed his colleagues is separated from them. Finally Delaware delegates like Dickinson who were strongly in favor of a powerful chief executive are separated from the others in his delegation who were less enthusiastic about this plan.

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[12]We note that this is not driven by a roll-call position because the final refusal to sin was not included in the analysis. This is based solely on their overall convention behavior.
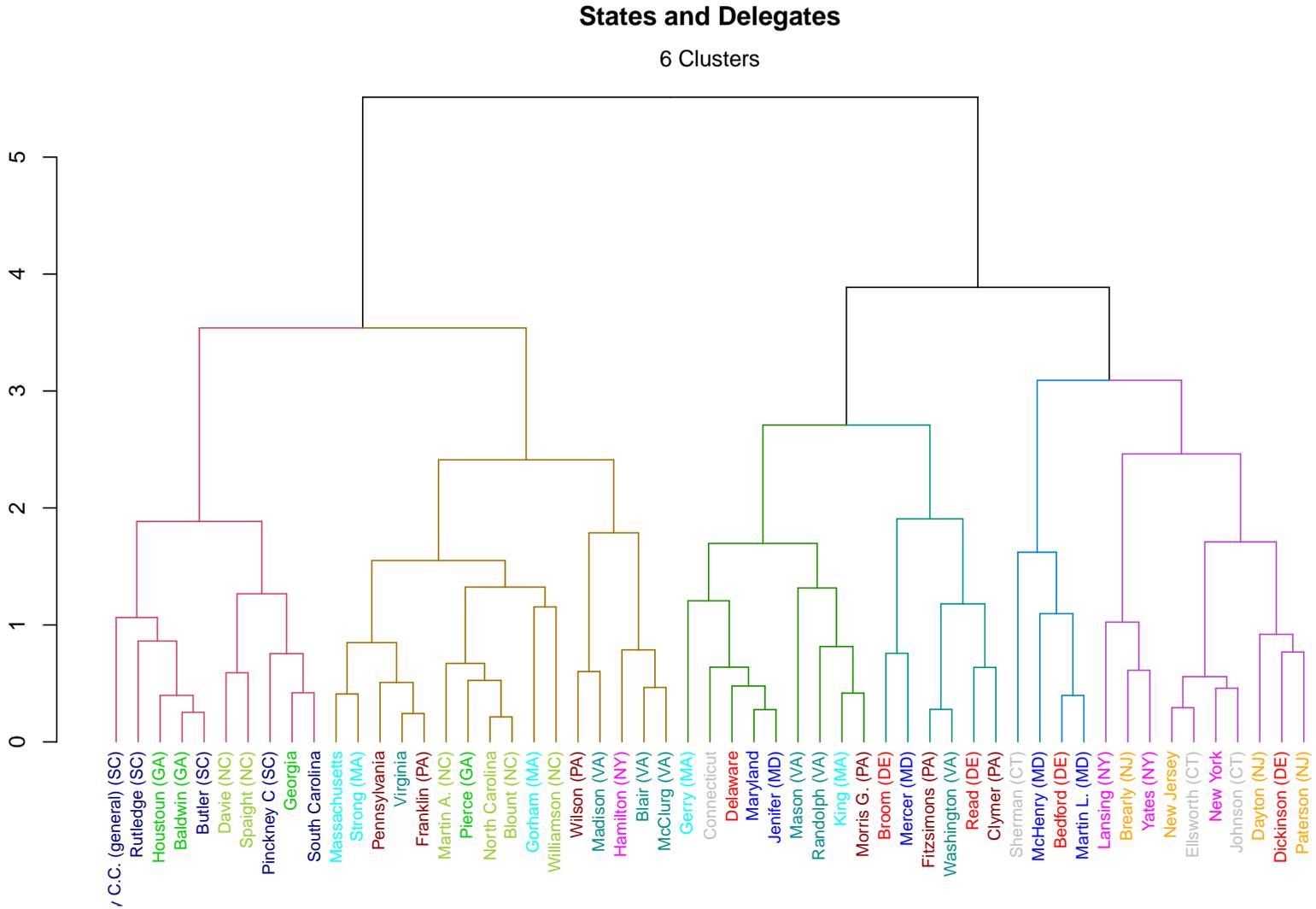
States and Delegates

6 Clusters

Figure 6: Six Clusters of Individual Delegates

Table 2 displays our best estimate of the coalitions and compares them in brief to the other relevant literature. There are significant similarities, but also differences. Beard's claims are essentially unlike ours at all. In the original critique of Beard McDonald described the complex nature of the coalitions, suggests three coalitions and two lone wolves (Maryland and Connecticut). When he looks at individual delegates (as well as ratification) he sees more individuality than actual coalitions. But McDonald and subsequent critics all realize that the coalition structure is complex. Among historians, the traditional two-class structure prevails, but that is not the norm among most social science on this subject. It is true (and not surprising) that if we cluster into two categories or focus on a single dimension we typically see the large state v. small state dichotomy, however, this result is driven by assuming either a single-dimension of conflict like Londregan or assuming that the winning coalition is constant the convention.

More recent scholars like Jillson and Slez and Martin have critiqued a constant coalition structure. They have used a model that divides the convention into several period, with each period often dealing with a discrete set of issues (although never exclusively so). Consequently, they have found groups of five coalitions.

In comparison to them, we think the structure is simpler. Their conclusions are driven by the periods of the convention they employ. However, since the Convention truly talked about all of the issues across multiple months we think it is more realistic to think about an underlying agenda that may change across periods but does not truly reflect a change in preferences or coalitions. The scholar we come the closest to is Ulmer, whose claims are quite similar to ours, although he separates Massachusetts from what we label the Core Reform States.

In conclusion we draw the following inferences. First, the convention structure is not explained well by a single dimension or a pair of clusters. This, by itself, implies that the structure of the voting is not simply based on the fight over representation between the "large" and "small" states. The debate was about more than that, issues such as federalism and the presidency were of significant importance as well. The final implication is that the key interest at the Convention that defined how the Constitution unfolded was slavery. The Core Reform states constantly favored drafmatic change, but they could not stitch together a single coalition that was constant. On representation and federalism they were aligned with the Deep South, but this would never have created the powerful executive created in the Constitution because

Author	Group 1: Small States	Group 2: Core Reform States	Group 3: The Deep South
Pope & Treier	Connecticut Delaware Maryland New Jersey New York	Massachusetts Pennsylvania Virginia	Georgia North Carolina South Carolina
Compared to			
Beard	Little commonality with ours or any other suggested coalitions		
Ulmer	Very similar to our estimates, though MA is separated from PA & VA		
McDonald	Splits the small states in ways we do not and MA is, again, separated from PA & VA		
Londregan	Similar to our estimates but focuses more on a large v. small state distinction ignoring other relevant cleavages		
Jillson	Similar to our estimates but GA & MA are put in their own coalition and CT is separated from other small states		
Slez and Martin	Very distinct from our estimates		
Dougherty and Heckelman	Somewhat different from our estimates; based on a single dimension that separates the small states		

Table 2: Our estimated coalitions compared to the key points in the literature.

Georgia and the Carolinas were interested in maintaining their perceived advantages in the legislature. The key states that helped create a strong president were Delaware and Maryland which took the place of the small states in the coalition that created that power.

It is not surprising that the Constitutional Convention was a complicated affair involving multiple sometimes cross-cutting coalitions. And it must be recognized that the slave interest was the key interest at work.

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