Equal Representation?
An Assessment of the Responsiveness of Senators to Subconstituency Interests

Thesis

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Abstract

While several studies have explored the impact of constituency opinion on representative behavior, few studies have adequately engaged the concept of subconstituency as first posited in Fenno (1978). His elaboration of the district as "a nest of concentric circles" provides a useful construct for thinking about how members can (and often do) sustain different relationships with different constituency subgroups. Relying on one of the few data resources available with sufficient sample sizes from each state to explore these ideas – the Senate Election Study – this study divides the district population into groups based on level of partisanship and income and investigates the influence of constituent opinion from these subgroups on Senator ideology. Though it is a closer representation of the concentric circles analogy presented by Fenno, the results of the partisanship model indicates that a Senator's co-partisans are not any more represented than at-large district residents. The income model suggests that Senators better reflect the opinions of middle- and high-income constituents, while low-income opinion is largely ignored by Senators of both parties. Assessment of opinion differences across these different subgroups indicates that disparities in representation found for some citizens may be attenuated by a common opinion shared with groups that are more represented.

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There has been much work on the concept of representation that looks closely at the dyadic relationship between representatives and their constituents (Miller and Stokes 1963; Erikson 1978; Jackson and King 1989; Herrera, Herrera and Smith 1992; Quaile Hill and Hurley 1999). A significant portion of this work considers representation in terms of policy congruence – that is the extent to which votes of the legislator reflect the policy preferences of the constituency. In his meta-analysis of the policy congruence literature, Burstein (2003) offers that "so far as we can tell from published research, policy is affected by opinion most of the time; often – over half the time when public opinion has any effect – the impact really matters substantively" (34). This statement, based on a large sample of representation literature, suggests that constituency exerts some determinative influence on the decision-making calculus of representatives even with variation in policy and opinion measurement across these different studies. Though the endeavor to understand the relationship with the district has been characterized by a variety of approaches through time, Jacobs and Shapiro agree with Burstein assessment, noting that "the general finding – across a number of different policies and time periods – is that constituency opinion affects congressional behavior" (9).

Beyond these conclusions, one important problem has persistently hindered the study of representation. The important question in all these studies that remains unanswered – and in most cases unasked – is *which constituency* is the member representing? The real difficulty encountered by the studies discussed above is their failure to consider anything

beyond the geographic constituency in their formulations. As a result, constituency effects on member actions have likely been underestimated or, at the very least, misunderstood.

In his seminal work *Home Style*, Richard Fenno (1978) sought to address the questions of "what an elected official sees when he or she sees a constituency," and "what consequences do these perceptions have for his or her behavior?" (xiii). From this initial inquiry, Fenno elaborates on the "home style" that each Representative adopts when interacting with the district. Central to home style is a nuanced conception of the constituency as a "nest of concentric circles" (1). Fenno identifies four constituencies that members encounter in their districts: geographic, reelection, primary and personal. The geographic constituency encompasses the entirety of the member's legal district. When conceptualizing district relations, the geographic constituency is often the default category referenced. However, Fenno identifies three subconstituencies beyond the geographic level that impact member relations with the district.

The reelection constituency is composed of district residents who the member considers supporters. In reality, this group has broader parameters that encompass any resident who could potentially vote for the member. From this broad reelection constituency, representatives distinguish their base of strong supporters. Fenno defines this subgroup as the member's primary constituency. These solid backers "display an intensity capable of producing additional political activity, and they tender their support 'through thick and thin,' regardless of who the challenger may be" (Fenno 18). This constituency is more difficult to delineate as its definition requires a more enhanced perception of support intensity and durability. The personal constituency, defined by Fenno as "the intimates," is made up of political advisors and confidants in the district.

As the elaboration of these concentric circles suggests, the constituency is multi-faceted and should be considered in a way that corresponds to this reality. By focusing only on the geographic level, research has overlooked the very real possibility that "…different members simply define and perhaps even see their constituencies differently" (Wright 483). Despite Fenno's acknowledgement of the multiple constituencies within a district, the typology created has only been employed in a few studies to explore the different facets of the representative-constituency relationship.

Work conducted by Bishin (2000) engages subconstituency concepts directly. Bishin argues that there has been a consistent underestimation of constituency influence in representative decision-making; he attributes this to a failure to capture the subconstituency effect in this research. As part of his effort, Bishin seeks to establish "a generalizable measure that more accurately reflects the influence of constituency on legislators," grounding his new metric in electoral theory. Bishin defines the reelection constituency in very broad terms, expecting that representatives are "driven to maintain or increase their share of the vote in the next election" (394). In this "prospective subconstituency" framework, members represent all district residents except opposition party extremists.[1] Bishin contends that this wide net of partisans is reasonable since "it is not always clear which voters are available in any given election" and elected officials try to appeal to as many voters as possible. Bishin then compares a traditional model at the geographic level to a prospective model that captures the reelection constituency in a district. In refining the constituency to tap only potential supporters in the district, the prospective model is able to

[1] For example, a Republican member will see his prospective constituency as all constituents who classify themselves as strong Republicans, moderate Republicans, Independents leaning Republican, Independents, Independents leaning Democrat, and moderate Democrats on the traditional seven point party identification scale.

achieve the same degree of explanatory power as the traditional model, suggesting that the traditional measures of constituency at the geographic level produce some noise. This finding reiterates the need to measure constituency in a more nuanced way.

Clinton (2006) also considers subconstituency effects on representation, concentrating on the preferences of self-identified co-partisans in the district.[2] Clinton posits that "the preferences of constituents belonging to the same party as the representative are more heavily reflected in congressional voting behavior" (398). He finds that, in the House of Representatives, same-party and non-same-party constituents exert a statistically similar effect on roll call voting behavior, but this reports an average effect from both parties, possibly obscuring the conclusions. Estimating these same regressions separately for each party, Clinton finds that "whereas majority party Republicans can be interpreted as being more responsive to the preferences of the same-party constituency than the mean voter, Democrats appear to be more responsive to non-same-party constituents" (404). This particular relationship is possibly unique to the majority-minority status observed in the single congress Clinton considers (106th Congress) and should be investigated across multiple congresses. Still, this uncovers different representation patterns between partisans or at least between majority and minority party members, suggesting that trends in policy responsiveness should be considered separately for different populations of legislators.

Partisan subconstituencies, as investigated in these two studies, closely reflect the "nest of concentric circles" definition of subconstituencies articulated by Fenno. Though this aligns with Fenno's initial description, there are several other characteristics that could be utilized to divide up the constituency. As income inequality continues to increase, it is

[2] This definition taps Fenno's primary constituency concept more closely, where Bishin's classification coincides with the reelection constituency.

important to understand the impact of citizen income on representative responsiveness. Division of the district into subgroups based on income may be a good approach to engage the way resource differentials in a population can affect policy. Socio-economic status of constituents is an important district cleavage that could alter the way a representative interacts with certain parts of the constituency. Some studies have begun to explore the relationship between representation and constituent income (Bartels 2008, Gilens 2005).

Using the 1988-1990-1992 Senate Election Study to investigate the responsiveness of representatives to constituent opinions, Bartels (2008) differentiates the sample from each state into three income categories: low-income (less than $20,000 annual income), middle-income ($20,000 - $40,000 annual income) and high-income ($40,000+ annual income).[3] Employing both ideology scores and specific roll-call votes to capture to Senator's behavior, Bartels finds evidence that Senators are substantially more responsive to high-income constituents, moderately responsive to middle-income state residents and wholly unresponsive to the opinion of low-income constituents. In an effort to explain this inattention to low-income constituents, Bartels suggests that this differential responsiveness may vary between Democrats and Republicans as a result of their party bases. Considering the traditional party bases, it would be expected that Democratic Senators would be more responsive to lower-income constituents while Republicans would be more responsive to the affluent in the state. Conducting his analysis separately for each party, Bartels finds that Republicans are twice as responsive to high-income constituent opinion than Democrats and that both Republicans and Democrats demonstrate near-equal levels of responsiveness to

[3] These thresholds seem to be quite arbitrary selections, but Bartels divides along these criteria to maintain relatively equal numbers of respondents in each category.

middle-income constituents. However, the critical finding here is that *neither party* is at all responsive to low-income citizen opinion.

In another approach to this same topic, Gilens (2005) employs public opinion data from a variety of policy-specific polls to assess whose policy change opinions are influential. Consideration of the direct representative-constituent relationship within the district is not served by this approach; rather, this analysis studies responsiveness of Congress as a whole to aggregate public opinion. This reliance on national poll data provides important insights into whose policy preferences are reflected in national policymaking. Gilens emulates Bartels and considers the opinions of constituents across income ranges, finding that policy change action is more congruent with the preferences of affluent citizens. If policy change support reaches 90% among those in the 10^{th} – 50^{th} income percentiles, policy change is twice as likely to occur as if policy change support among these groups were only at 10%. For citizens at the 90^{th} income percentile, policy change is four times more likely to occur if 90% of this group supports the change.

Both of these studies indicate that constituent income acts as an additional subconstituency division that has important implications for policy responsiveness. Although subconstituencies corresponding to income were not part of Fenno's initial "concentric circles" typology, it is clear from these works that income disparities among the district population have consequences for representation.

It is the goal of this paper to assess how partisanship and income of district residents influence the policy responsiveness behavior of representatives. These traits have only been investigated in separate studies, limiting our ability to assess how partisanship and income together may influence the policy behavior of elected officials. There are several relevant

constituent characteristics that could be employed as criteria for delineating subconstituencies (gender, political participation, interest in politics, etc.) – these all warrant exploration in future studies. Here, work by Bartels (2008), Bishin (2000) and Clinton (2006) provides a clear foundation for consideration of partisanship and income as important attributes of constituencies with the potential to secure differential levels of policy responsiveness from representatives.

Data: The Senate Election Study 1988-1990-1992

The lack of sufficient samples has been a core problem facing all studies that seek to examine the representative-constituent relationship. In their seminal work "Constituency Influence in Congress" that provided some of the first evidence concerning this question, Miller and Stokes (1966) rely on samples from congressional districts of, on average, only 13 district residents; these small numbers obviously call into question the validity and reliability of their results. Some work has investigated how changes in aggregate public opinion have resulted in policy change in order to obviate the problems presented by small sample sizes in congressional district data (Page and Shapiro 1983; Gilens 2005). This choice has provided valuable insight into questions of policy responsiveness, but cannot be applied to direct assessment of the representative-constituent relationship.[4] As the focus here is on how a representative's relationship with certain subconstituency groups can impact policy responsiveness, it is more appropriate to rely on the Senate Election Study, providing adequate sample size from each state for the 1988-1990-1992 NES cycles; this same data set

[4] Other studies have employed preference imputation techniques (such as post-stratification) in order to estimate public opinion for larger samples of constituents (Lax and Phillips 2009). This is a valuable tool, but it is not a technique that the researcher is personally proficient with at this time, making post-stratification a desirable method for future efforts.

was utilized by Bartels (2008) and Bishin (2000). The samples of approximately 150 to 200 respondents per state are sufficiently large to provide a viable illustration of district opinion.

Constituent Opinion

Bishin (2000), Clinton (2006) and Bartels (2008) all rely on measures of constituent ideology to determine the extent of policy responsiveness observed between legislators and their subconstituencies. While other variables to convey constituency opinion (issue-specific opinions, etc.) would provide a more comprehensive portrait of views in the district, the ideology measure captures opinion across many issue areas, making it an ideal choice in many respects.[5] In fact, survey-based measures of constituent ideology are the primary metric used throughout this literature. In general, authors in this area justify this choice since, on most issues, "constituency preferences are not communicated to their representatives" (Kuklinski 168). Given this, it is assumed that legislators depend on cues about the ideological tendencies of the electorate to provide a sense of their general preferences and vote in line with this.[6]

However, dependence on constituent ideology measures is not without issue. There are indications from the literature on conceptions of ideology in the public that ideology is not a construct that is readily accessible and understandable for most citizens. Converse (1964) investigates the ability of citizens to recognize and understand the labels conservative or liberal. In asking respondents in a 1960 study to match parties with their ideologies, 37% could not offer an answer. Of those who did respond, 17% categorized them incorrectly.

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[5] See Canes-Wrone, Minozzi and Reveley (2011) for a recent consideration of issue-specific accountability.
[6] This could be a questionable assumption. There are various forms of direct constituent contact with the legislative office that are likely more influential than the general ideological leaning in the district; these questions have been addressed in other work (Miler 2010), but the Senate Election Study data does not accommodate this more nuanced measurement strategy that considers contacts made to legislative offices, the content of those contacts, etc.

Ideology is not easily understood by most of the public. Stimson (2002) discusses the relatively low correlation between his measures of "policy mood" and respondent's ideological self-identification; policy mood and ideology self-reports are both intended to capture ideology. The discrepancies between mood and ideology suggest that individuals don't equate ideology with the underlying concepts that social scientists or politicians expect. Though these criticisms of ideology in the public are acknowledged, this study will follow the precedent from recent literature and employ constituent ideological self-placement as the measure of public opinion.

Constituent opinion is calculated by taking the average opinion of respondents across different population subgroups; the specific divisions of district subgroups are elaborated below. Opinion is a summary measure of ideology; to reflect the same alignment as DW-Nominate scores, liberal is coded as -1, moderate as 0 and conservative as 1. Once the average ideology across a subconstituency group is calculated for each state, the opinion measure is multiplied by the proportion of the state sample that falls into that group, producing a weighted measure of average constituent opinion.[7]

These opinion measures are weighted averages across the six years of this study. This leverages the large sample sizes in each state to achieve more trustworthy estimates of public opinion for each district subgroup. While there may be concerns about timing (with measured opinion preceding subsequent policy action) in the study of policy congruence, this possibility is ignored in this study, with the efforts instead directed at taking advantage of more reliable opinion measures from state samples pooled across years.

[7] This weighting procedure is the same method employed by Bartels (2008). In an effort to stay consistent with this and to verify his findings, this weighting system is used here. Estimation of the models without weighted coefficients yields the same substantive conclusions for most models.

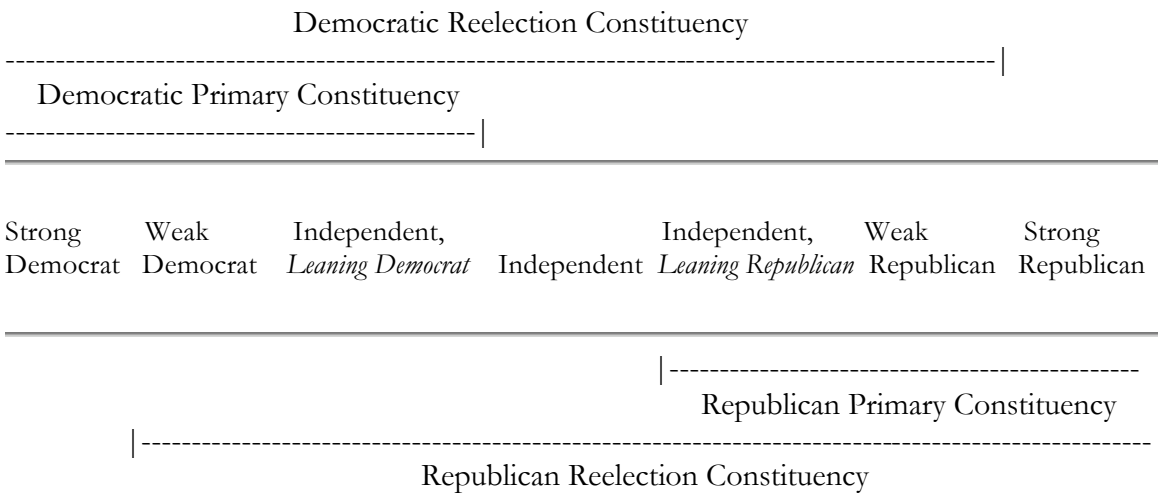
The Partisanship Model

To reflect the reelection and primary constituencies, the samples from each state are divided based on their responses to a partisan self-identification question. Those who identified as co-partisans with their Senator were classified as members of the Senator's primary constituency.[8] On average, 64 respondents are in the Democratic primary constituency for a state and 52 respondents are in the Republican primary constituency. Similar to the conception of the "prospective constituency" advanced by Bishin (2000), all respondents from the district except opposition party extremists were classified as members of a Senator's reelection constituency. On average, 137 respondents are in the Democratic reelection constituency and 110 respondents in the Republican reelection constituency. A visual depiction of this classification scheme can be found in Figure 1 below.

It should be noted that this classification scheme is intended to reflect the concentric circles of Fenno's study, a framework developed in Fenno's work studying *House* members in their districts. Though the concept was not developed with the Senate in mind, it should still apply to Senators and how they relate to their state constituencies. Partisanship in the district may not be quite as consequential for Senators who do not face reelection biennially, but it should still have some influence on the behavior and voting patterns of Senators. That said, conducting this same analysis on House members may reveal different effects from partisanship; this possibility is beyond the scope of this project.

[8] This is the closest classification to a Senator's more intense support base given the data. Measures of personal support for the Senator herself would likely be more appropriate to capture the spirit of the primary constituency but are not available in this data.

Figure 1. Partisanship Classifications for Primary and Reelection Constituencies.



The Income Model

Following Bartels' income categories, three income groups are delineated. Low-income constituents have less than $20,000 annual income, middle-income constituents with between $20,000 and $40,000 in annual income and high-income constituents making $40,000 or more per year. On average, 45 low-income, 67 middle-income and 53 high-income constituents appear in each state's sample.

The division of respondents into partisan and income categories to calculate constituency opinion does restrict the samples, possibly resulting in inaccurate opinion measures that are not truly representative of the opinion of each of the groups. Opinion metrics drawn from samples of this size could be suspect; larger numbers from each of these population subgroups would be ideal. To achieve this, the structure of the sampling

procedure for survey administration would need to be tailored for these ends. Operating within the constraints of the samples available, this analysis is conducted with the admission that the Senate Election Study data represents one of the only data sets adequate to illustrate constituent opinions across income and partisan subgroups though it is still not the ideal resource.

Dependent Variable: *Senator Ideology*

Senator ideology is measured with Poole and Rosenthal's DW-Nominate scores, as calculated from the roll-call votes in each Congress. This measure is the standard used in this literature, though other earlier works have also utilized interest group ratings or votes on specific roll-call measures (Bartels 2008). This decision to follow the precedent in the literature is further bolstered by recent work assessing the electoral impacts of roll-call voting decisions by House members. Results from Canes-Wrone, Brady and Cogan (2002) offer "support the long-standing findings that members view legislative voting as an important component of the electoral connection and consider constituency cues in roll-call decisions….Thus members are correct in assuming that legislative votes have an impact on the probability of reelection" (136). Roll-call votes have electoral implications and, as a result, should be expected to demonstrate some acknowledgment of or responsiveness to constituent opinion. Other works have considered how constituent priorities may influence the participation decisions of House members (Hall 1996). This approach is valuable, identifying legislative participation as a new dependent variable for assessing policy responsiveness; however, data limitations on measures of legislative participation do not allow for use of a participation-based dependent variable in this study.

Hypotheses

Drawing on the conclusions from Bishin (2000), Clinton (2006) and Bartels (2008), several hypotheses about how different subconstituencies within a district are influential can be posited. Clinton provides an important clarification in his 2006 study of the U.S. House that also applies to this investigation:

> Although the analysis cannot determine whether representation is high or low because voting behavior and constituency preferences are assessed using different measures, decomposing geographic constituency preferences *does* permit an assessment of whether some constituents are more reflected than the mean voter. (Clinton 402)

Exploration of the partisanship model and the income model separately and then combined allows for direct comparison of the influence of different citizen traits on the degree to which they are "more reflected" in their Senator's ideology. Three central hypotheses will be tested in this study:

> *Primacy of the Primary Constituency Hypothesis:* The opinion of primary constituency citizens will have a greater impact on Senator ideology than either citizens in the reelection constituency or the general district constituency.
>
> *Primacy of High-Income Constituency Hypothesis:* District residents with higher incomes will have a greater impact on Senator ideology than middle- and low-income constituents.
>
> *Income over Partisanship Hypothesis:* Income of respondents will have a greater impact on Senator ideology than will their self-identified partisanship.[9]

Higher income constituents have many advantages available that make their influence in politics more likely. Higher income constituents are more likely to vote,

[9] Based on the mixed results demonstrated in Clinton (2006) regarding responsiveness to district partisans and the strong effects of income displayed in Bartels (2008), there is reason to suppose that the effect of citizen income may outweigh the effect of citizen partisanship in influencing Senator's ideology. Direct comparison of the two district division schemes will offer a test of this hypothesis.

participate in political activity, be politically aware and make financial contributions to candidates (Verba, Scholzman and Brady 1995). These additional political resources enhance the visibility of these constituents to their elected officials, making it more likely that their views will be heard and subsequently taken into account.

With the primary constituency, there are not necessarily large disparities observed in the political resources that benefit high-income constituents. Despite this, it is reasonable to expect closer attention to the interests of co-partisans in the districts. Partisans in a district are better informed (Delli Carpini and Keeter 1996), more easily mobilized (Holbrook and McClurg 2005) and generally more likely to vote than independents (Rosenstone and Hansen 1993). In addition, fellow partisans express preferences similar to those of their representatives, reflecting shared policy preferences that would be expected to make responsiveness to this group naturally stronger.

With these resources differences based on income and partisanship in mind, constituent opinion based on voter turnout will be included in the models to test for a potential alternative hypothesis. Turnout is a relatively costless forum for political involvement for citizens, representing a baseline of the type of political activity that is readily accessible to all constituents regardless of income or strength of partisanship. If higher turnout rates are one of the advantages of high-income constituents and district partisans, the inclusion of the opinion of voters in the district would limit the impact of income and the impact of partisanship posited in the above hypotheses. The effect of voter opinion compared to non-voter opinion will be considered and then its implications for the overall models presented will be explored.

> *Voter Turnout Hypothesis:* District residents with who turn out to vote will have a greater impact on Senator ideology than constituents who do not vote.

Turnout Effects Hypothesis: Inclusion of voter constituent opinion will lessen the impact of constituent income and constituent partisanship on Senator ideology.

Before the validity of these hypotheses can be assessed, it is important to include a discussion of descriptive statistics about these different opinion measures. As all these measures capture opinion from small (and at times overlapping) parts of the state population, it is key to highlight any potential collinearity in these opinion measures.

Opinion Differences Across Subconstituencies

In his study on differential influence of constituents based on income, Gilens (2005) clarifies that the impact among low- and middle-income citizens may be underestimated. On many issues, rich and poor respondents don't differ substantially in their policy preferences. In these cases, low-income opinion is indistinguishable from high-income opinion; the poor could have their policy change preferences met simply because they agree with the rich. In order to determine how distinct the preferences are across subconstituencies, it is important to see whether there are significant differences in the weighted and unweighted ideologies of each of these groups. If constituent opinions expressed are not significantly different across these various subconstituencies, then citizens' views may be adequately represented by the view expressed by the constituencies Senators are more responsive to. However, if differences in opinion are observed across the subconstituencies, then some subgroups in the district may not have their opinions represented. Tables 1, 2, 3 and 4 below offer the overall means (both weighted and unweighted) of constituent ideology for each

subconstituency assessed in the models to follow.[10] Difference of means tests highlight whether the ideology of one group differs significantly from the ideology average of another group.

For the partisan subconstituencies, assessed separately for each party, the averages of ideological opinion for each subgroup are significantly different from each other. For Democrats, the primary constituency is significantly more liberal than the reelection constituency and the geographic constituency. Though the reelection and geographic constituencies for Democrats have fairly close averages, these two values are still statistically

Table 1. Comparison of Partisan Subconstituencies for Democrats.

	Statewide Opinion	Reelection Constituent Opinion	Primary Constituent Opinion
Unweighted Opinion	0.2785464	0.3343722	0.0592964
Weighted Opinion	0.2785464	0.3329122	0.0259277

Table 2. Comparison of Partisan Subconstituencies for Republicans.

	Statewide Opinion	Reelection Constituent Opinion	Primary Constituent Opinion
Unweighted Opinion	0.2785464	0.4036246	0.6229813
Weighted Opinion	0.2785464	0.3193805	0.2338337

Table 3. Comparison of Income Subconstituencies.

	Low Income Constituent Opinion	Middle Income Constituent Opinion	High Income Constituent Opinion
Unweighted Opinion	0.260504	0.2747036	0.2547341
Weighted Opinion	0.07746	0.1106775	0.0761332

[10] State-by-state comparisons of constituent ideology across district subgroups are also useful; reliance on overall averages here in order to save space. Tables 12, 13 and 14 in the appendix provide subconstituency opinion comparisons for each state. It is possible that some state exhibit very different patterns; the data in the Appendix tables suggests that most states follow this general pattern and the same conclusions elaborated above are still applicable.

Table 4. Comparison of Opinion based on Voter Turnout.

	Voters	Non-Voters
Unweighted Opinion	0.2871842	0.2428999
Weighted Opinion	0.2087997	0.0653301

different. The Republican primary constituency is also significantly more conservative than the reelection and geographic constituencies. This can be seen most clearly in the averages for unweighted opinions; primary constituency average opinion if 0.623 while average opinion in the reelection constituency is 0.404. Statewide opinion is also statistically distinct from reelection constituency opinion. These basic averages suggest that each partisan subconstituency studied here represents an ideology that is statistically different from the other partisan subconstituencies. If the expected relationships about the primacy of the primary constituency are realized in the analyses below, this would suggest that real and consequential differences in opinion would be reflected in Senator ideology.

Table 3 offers the comparison of averages for income subconstituencies. It is notable that the differences between these subgroups are of a much smaller magnitude than the differences across partisan subgroups. Still, middle-income unweighted opinion is significantly different from high-income opinion. The key concern, based on patterns of responsiveness identified in past work, is whether low-income opinion differs significantly from middle- and high-income constituent ideology. The average unweighted low-income constituent opinion is 0.261, within 0.015 of the other subgroups. In fact, unweighted low-income opinion is not statistically different from middle- or high-income constituent opinion. Consideration of the weighted opinion measures (the quantities included in the

models estimated above) reveals that middle-income opinion is statistically distinct from both low-income and high-income citizen opinion; this group is, on average, more conservative than the other two income categories. However, average low-income constituent opinion is not significantly different from high-income constituent ideology.

Comparison of opinion between voters and non-voters reveals that constituents who turnout to vote are more conservative than those who do not; this observed difference is statistically significant for both weighted and unweighted opinion measures.

This brief difference of means analysis indicates that there are substantial opinion differences between partisan subconstituencies and voter turnout subconstituencies while there are relatively minor opinion differences across income subconstituencies. With these descriptive statistics about each opinion measure outlined, model estimation to consider the hypotheses here follows below.

Results: The Partisanship Model and the Income Model

The models estimated for each hypothesis follow the same format employed by Bartels (2008). Senator DW-Nominate is the dependent variable in an OLS regression, with the independent variables capturing the ideologies of the relevant constituent subgroups. Additionally, Senator's party identification is also controlled for as this is a key determinant of each Senator's ideal point estimate.[11] Table 5 below provides the OLS coefficient estimates for the partisanship model (*Primacy of the Primary Constituency Hypothesis*), the income model (*Primacy of High-Income Constituency Hypothesis*) and the pooled model (*Income over*

[11] Estimations of the models without this control for Senator party can be found in Table 10 in the Appendix. Clear differences in the results are especially apparent for the partisanship models. These differences will be discussed below.

Partisanship Hypothesis).[12] Table 6 shows the OLS results of the same models estimated separately for each party.

The Partisanship Model

These estimates reveal that none of the partisan subconstituencies exert a statistically significant impact on Senator ideology. The ideology of the geographic constituency is actually the most prominent constituent group influencing Senator ideology. For each one-unit increase in geographic constituency opinion (from liberal to moderate, for example),

Table 5. Comparing Partisan and Income Models for Senator Ideology.

	Partisanship Model	Income Model	Pooled Model
Geographic Constituency Opinion	0.4984 (0.279)	---	0.1102 (0.305)
Reelection Constituency Opinion	0.1579 (0.399)	---	-0.1541 (0.447)
Primary Constituency Opinion	-0.0628 (0.352)	---	0.0942 (0.363)
Low-income Constituency Opinion	---	0.0680 (0.238)	0.0469 (0.444)
Middle-income Constituency Opinion	---	0.8080** (0.281)	0.7826 (0.424)
High-income Constituency Opinion	---	1.1788*** (0.312)	1.1777** (0.401)
Party of Senator	0.6608*** (0.078)	0.6297*** (0.028)	0.6098*** (0.083)
Constant	-0.5186*** (0.074)	-0.5064*** (0.029)	-0.4847*** (0.088)
R^2	0.822 n=302	0.835 n=302	0.836 n=302

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

[12] Models estimated separately for each year of the Senate Election Study (1988, 1990, and 1992) reflect the same trends exhibited in Table 1. These yearly models can be found in Table 11 in the Appendix.

there is a 0.498 positive shift in Senator ideology. This indicates a fairly substantial change in Senator opinion as a result of an opinion change from the whole district; however, this effect only approaches statistical significance (p=0.076). Both the reelection and primary subconstituencies, expected to exert a stronger effect on Senator ideology, are insignificant predictors; these effects are not statistically different from zero. There is not support for the primacy of the primary constituency hypothesis.

That said, it is important to note that these partisanship categories reflect concentric circles in the district and are not mutually exclusive. All members of the primary constituency are also members of the reelection constituency and the geographic constituency. Through this, co-partisans of a Senator still have an ability to influence the Senator's ideology; however, there is no additional representation advantage that results from membership in the primary or reelection constituencies as would be anticipated.

However, the party of Senator variable included in the model is likely capturing much of the effect of partisan subconstituencies in the district. Though exclusion of the party control does result in an incompletely specified model of Senator ideology, it is worth noting that opinion of the primary constituency has a substantial and statistically significant positive effect on Senator ideology (coefficient: 2.6222, p=0.000) in models that do not include a control for Senator's party identification.[13] As would be expected, Senator party identification picks up much of the effect from the primary subconstituency. Interestingly, the opinion of the reelection constituency in this same model demonstrates a substantial and statistically significant *negative* effect (coefficient: -1.7409, p=0.000). As ideology of the reelection constituency moves from in a conservative direction (from liberal to moderate),

[13] See this model in Table 10 in the Appendix.

there is a liberal shift in Senator ideology. Senator ideology tracks with the opinion the primary constituency and reacts against the ideology of the broader reelection constituency.

Though the primary constituency hypothesis does not posit any differences in the partisanship representation relationship between the two parties, there are divergences that are evident between the two parties when regressions are estimated separately for each party (Table 6). Similar to the estimates above run for the parties together, the partisanship model for Republicans suggests the greatest effect for the geographic constituency. However, the partisanship model for Democrats indicates that the expressed ideologies of the reelection constituency influence Senator ideology. For a one-unit shift in reelection constituent ideology from liberal to moderate, a 0.6987-point positive shift in Senator ideology is observed. This effect of the reelection constituency could be a result of the sample composition; in general, few respondents identified as strong Republicans. This means that the Democratic reelection constituency is generally larger than the reelection constituency for Republicans. With an average total sample size per state of approximately 166 respondents, the Democratic reelection constituency contained 137 respondents on average (82.5% of the geographic constituency) while the Republican reelection constituency contained 110 respondents on average (66% of the geographic constituency size).

The Income Model

Results for the income model in Table 5 reflect the same trend identified by Bartels – an inattention to policy preferences of the low-income state residents paired with a much greater responsiveness to the opinions of middle- and high-income constituents. A change in low-income citizen opinion from liberal to moderate (a one-unit change) does not effect any

change in Senator ideology. A similar one-unit change in middle-income constituent opinion results in a 0.81 shift in Senator ideology, reflecting a large jump from liberal to conservative (or vice versa) based on a shift in middle-income constituent views. High-income constituents demonstrate an even more substantial impact on the ideology of their Senators: a one-unit change in high-income opinion results in a 1.18 unit shift in Senator ideology. This much higher impact of high-income constituents yields support for the primacy of high-income constituents hypothesis.

Table 6. Comparing Partisan and Income Models for Senator Ideology for each party.

	Partisan Model		Income Model		Pooled Model	
	Democrats	*Republicans*	*Democrats*	*Republicans*	*Democrats*	*Republicans*
Geographic Constituency Opinion	0.0389 (0.262)	0.9922*** (0.410)	---	---	-0.1022 (0.317)	0.1583 (1.021)
Reelection Constituency Opinion	0.6987** (0.393)	-0.3582 (0.657)	---	---	0.2143 (0.586)	-0.1853 (0.663)
Primary Constituency Opinion	-0.3518 (0.370)	0.6030 (0.670)	---	---	-0.2747 (0.399)	0.6869 (0.668)
Low-income Constituency Opinion	---	---	0.1812 (0.237)	-0.0144 (0.452)	0.2391 (0.542)	-0.2628 (0.969)
Middle-income Constituency Opinion	---	---	0.7121* (0.293)	1.0244 (0.517)	0.7996 (0.427)	0.7999 (1.099)
High-income Constituency Opinion	---	---	0.6109* (0.285)	2.0899** (0.660)	0.5795 (0.485)	1.9894 (1.025)
Constant	-0.5589 (0.082)	0.0151 (0.113)	-0.4632*** (0.027)	0.0333 (0.065)	-0.5095*** (0.106)	-0.0653 (0.144)
Adjusted R^2	0.264 n=170	0.169 n=132	0.291 n=170	0.250 n=132	0.299 n=170	0.267 n=132

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

Bartels indicates that estimation of these regressions for the total Senate population may be obscuring interparty differences in representation. Based on their electoral bases, Democrats should be expected to respond to low-income constituents to a greater degree than Republicans. Table 2 reports the income model regressions estimated separately for Democrats and Republicans. A one-unit shift in the opinion of middle-income constituents results in a 0.712 unit shift in Democratic Senator ideology; the effect of middle-income constituent opinion for Republicans is not statistically different from zero. A change from liberal to moderate or from moderate to conservative opinion among high-income constituents results in a 0.611 unit shift in Democratic Senator ideology and a 2.09 unit shift in Republican Senator ideology. For Senators of both parties, any change in low-income constituent opinion has no demonstrable effect (that is the possible change is statistically indistinguishable from zero). Though Republican responsiveness to high-income constituents is of a markedly greater magnitude than the responsiveness displayed by Democrats, the key fact is that *both parties* ignore the opinion of low-income constituencies.

Comparing Income and Partisanship: The Pooled Model

Inclusion of all constituency subgroups into a regression analysis simultaneously allows an opportunity to test which constituency groups exert more influence on representative behavior. Does citizen income or citizen partisanship exert a greater influence on Senator ideology? The pooled analysis from column 3 of Table 5 suggests support for the Income over Partisanship hypothesis; the ideology of high-income constituents is the only constituency opinion variable that demonstrates any substantive and statistically significant influence on Senator ideology. A one-unit shift from moderate to conservative in high-

income constituent ideology results in a large 1.178-point shift in Senator ideology. This change is observed when controlling for the effect of the Senator's party identification on Senator ideology, indicating that these effects of high-income constituent ideology are above and beyond the substantial influence of the Senator's own partisanship. Citizen partisanship, shown to have very little effect in the partisanship model discussed above, does not exert any influence on Senator ideology when the opinion of constituents divided by income is also accounted for.

However, findings from the pooled model estimated separately for Democrats and Republicans do not offer any support for the Income over Partisanship thesis – none of the income or partisanship constituency variables are significant predictors. High-income constituency opinion approaches statistical significance for Republicans ($p=0.058$). Middle-income constituency opinion is nearly significant only for Democrats ($p=0.066$). When the pooled model is estimated for smaller populations of Senators, the effects of constituency opinion of all groups dissipate.

As shown in Bartels (2008), citizen income has a strong impact on how constituent ideology is reflected in a Senator's own ideology. That this effect holds while controlling for the opinion of fellow partisans in the district indicates how impactful the income effect really is. Having identified this differential level of responsiveness to district residents with higher incomes, it is important to engage a question considered by Gilens (2005): do the policy preferences of these subconstituencies necessarily differ?

The minimal differences in ideology across income subconstituencies, highlighted previously, are reason to be more optimistic about the nature of representation in American politics. While Bartels (2008) and the income model findings reported above indicate that

the ideology of middle- and high-income subconstituencies are more reflected in Senator's ideology, the exploration of opinion differences provided in this paper suggests that the views of low-income citizens may be represented by proxy. On average, their ideologies correspond closely with those of high-income constituents, indicating that their opinions may be heard after all.

The Turnout Model

How does accounting for the opinions of voters alter the conclusions reported above? If different rates of turnout account for some of the income or partisan advantages in representation, then inclusion of the opinion of voters in the state should diminish the other effects observed. Before assessing this claim directly, it is important to note that there are differences in the voter turnout rates in the Senate Election Study among the subconstituencies being considered here. Low-income constituents vote at a much lower rate (62.7%) than middle-income (at 71.2% turnout) and high-income constituents (at 82.5% turnout). Voter turnout ratings, though slightly higher for Republicans are not significantly different between the two parties; in the Senate Election Study data, 75.9% of the Democratic primary constituency report voting in the last election while 78.4% of the Republican identifiers report voting in the last election.[14]

Table 7 presents an analysis of the basic turnout model, including measures of the opinion of voters and non-voters in each state. As posited by the Voter Turnout Hypothesis, the opinion of constituents who vote influences Senator ideology to a substantial extent. For all Senators, a shift from liberal to moderate constituent opinion among voters results in a

[14] 69.8% of independents in the sample reported voting.

Table 7. Comparing the Influence of Voter Opinion to Non-voter Opinion.

	All Senators	Democrats	Republicans
Voter Constituent Opinion	0.6858***	0.5135***	1.0483***
	(0.120)	(0.111)	(0.272)
Non-voter Constituent	0.1531	0.2752	0.0914
Opinion	(0.281)	(0.257)	(0.700)
Party of Senator	0.6452***	---	---
	(0.029)		
Constant	-0.4819***	-0.4528***	0.0942
	(0.029)	(0.029)	(0.068)
R^2	0.826	0.262	0.181
	n=302	n=170	n=132

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

0.69-point shift in Senator ideology. This effect holds when the model is estimated separately for each party as well. Both parties are more responsive to voters in the district. For Republican Senators, the effect is quite substantial; a shift in opinion from liberal to moderate among voters yields a 1.05-point shift in Senator ideology. The effect for Democratic Senators, while still statistically significant, is about half the magnitude of the effect observed for Republicans.

The primary reason to explore the opinion of district voters is to test a plausible rival hypothesis. Higher-income constituents are more likely to turnout so perhaps the effects of income identified above are capturing this turnout effect rather than an income effect. Inclusion of voter opinion into the same models estimated above (Table 8) does not diminish the impact of income observed. Senator ideology still reflects the opinions of middle- and high-income constituents in tests of the income model; in fact, the coefficients estimated for middle- and high-income opinion are slightly larger than in the previous specification. In this model, voter opinion is not statistically significant. In the pooled model, the same trend in observed – voter opinion is not a statistically significant predictor of

Senator ideology though middle- and high-income subconstituency opinion are statistically significant.

The partisanship model had limited support in the initial tests. Incorporating a control for voter opinion into the first partisanship model does not cause any change to the partisan subconstituency variables; none of them are statistically significant predictors of Senator ideology. However, voter opinion is significant – a one-unit shift in voter opinion from liberal to conservative results in a 0.57-point shift in Senator ideology. Only after removing the control for Senator party identification from the model – a variable that is

Table 8. Comparing Partisan and Income Models, *controlling for turnout*

	Partisanship Model	Income Model	Pooled Model
Geographic Constituency Opinion	0.1223 (0.266)	---	0.1451 (0.319)
Reelection Constituency Opinion	-0.0150 (0.407)	---	-0.1500 (0.448)
Primary Constituency Opinion	0.0317 (0.347)	---	0.0931 (0.363)
Low-income Constituency Opinion	---	0.1032 (0.344)	0.0697 (0.458)
Middle-income Constituency Opinion	---	0.8519** (0.292)	0.8194* (0.407)
High-income Constituency Opinion	---	1.2544* (0.519)	1.2759* (0.540)
Voter Constituency Opinion	0.5746* (0.276)	-0.0617 (0.336)	-0.1007 (0.361)
Party of Senator	0.6394*** (0.078)	0.6291*** (0.027)	0.6094*** (0.083)
Constant	-0.4791*** (0.074)	-0.5066*** (0.028)	-0.4877*** (0.088)
R^2	0.826 n=302	0.835 n=302	0.836 n=302

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

capturing the preference similarities between Senators and their district co-partisans – is there some support for the primacy of the primary constituency hypothesis. Estimation of the partisanship model with voter opinion and without the Senator party identification control reveals that primary constituency opinion and voter opinion are statistically significant and positive and reelection constituency opinion is significant and negative, reflecting the same patterns discussed previously.[15]

The possibility that voter turnout patterns among these different subconstituency groups contributed to the expected advantages of partisan and income subgroups is not supported here. Although in a simple turnout model, Senators are found to be more responsive to voters than to non-voters, consideration of the impact of voter opinion relative to the other subconstituency opinions does not alter the conclusions discussed in the original models reported in Table 5. The effect of partisan subconstituencies is still negligible and the effect of income is still robust.

The Effects of Election Years

The staggered election years in the Senate allow an opportunity to investigate whether the responsiveness patterns identified above are consistent across all years or if there is variation based on the electoral cycle. Bishin (2000) suggests that Senators may demonstrate greater responsiveness to constituent opinion in reelection years. Table 9 below compares Senator's behavior in their election year to their responsiveness patterns in their

[15] See Table 10 in the Appendix and the previous discussion on p. 20.

off-years in the partisan, income and pooled models.[16] From the results of the partisan model, Senators up for election are more responsive to opinion of the geographic constituency. In this same model, the findings for Senators not on the ballot reflect the results above, with no partisan constituency opinion showing statistical significance. The

Table 9. Comparing Senators up for Election with those Not up for Election.

	Partisan Model		Income Model		Pooled Model	
	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election
Geographic Constituency Opinion	0.6071* (0.300)	0.4381 (0.289)	---	---	0.0840 (0.328)	0.1181 (0.321)
Reelection Constituency Opinion	0.0163 (0.437)	0.2357 (0.405)	---	---	-0.3421 (0.481)	-0.0569 (0.468)
Primary Constituency Opinion	0.0350 (0.363)	-0.1136 (0.369)	---	---	0.1604 (0.380)	0.0689 (0.378)
Low-income Constituency Opinion	---	---	0.1423 (0.238)	0.0282 (0.249)	0.2701 (0.445)	-0.0681 (0.489)
Middle-income Constituency Opinion	---	---	0.8602** (0.281)	0.7812** (0.299)	0.9789* (0.443)	0.6814 (0.450)
High-income Constituency Opinion	---	---	1.1499*** (0.345)	1.1922*** (0.321)	1.2566** (0.444)	1.1360** (0.415)
Party of Senator	0.6523*** (0.081)	0.6647*** (0.081)	0.6429*** (0.030)	0.6225*** (0.029)	0.6071*** (0.086)	0.6085*** (0.086)
Constant	-0.505*** (0.076)	-0.526*** (0.078)	-0.516*** (0.031)	-0.501*** (0.030)	-0.462*** (0.088)	-0.494*** (0.095)
R^2	0.839 n=104	0.813 n=198	0.851 n=104	0.827 n=198	0.852 n=104	0.827 n=198

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

[16] See Table 15 and 16 in the Appendix for these same models run separately for each party. Dividing the sample of Senators by party and by reelection reduces the sample size substantially and, as a result, the standard errors in these models are larger.

income model shows responsiveness to middle- and high-income constituencies regardless of a Senator's election cycle status. From the partisan and income models, it is clear that attention to the geographic constituency depends on election concerns but responsiveness to higher-income subconstituencies remains relatively consistent across a Senator's six-year tenure.

The pooled model offers further support for the Income over Partisanship hypothesis. High-income constituent opinion is statistically significant for both Senators up for election and those not up for election while none of the partisanship subconstituencies are significant predictors of Senator ideology. Interestingly, attention to middle-income constituents in the pooled model is found to be significant only among Senators up for reelection.

Consideration of the Senate reelection cycle reveals that Senators are responsive to the opinion of high-income constituents throughout their term, but that their responsiveness to other subconstituencies is conditional on their status in the reelection cycle. Responsiveness to the geographic and middle-income constituencies is found in election years only. This reveals some interesting nuances to the findings reported above, but the most robust finding – that Senators respond to high-income constituents more regularly than all other groups – remains unchanged.

Discussion

This study represents the first direct comparison of the income-based and partisanship-based explanations for the responsiveness of representatives. The partisan subconstituencies, first proposed by Fenno (1978), do not receive much support in this

study. Rather, the income-based subconstituencies explored by Bartels and Gilens are shown to be strong and consistent determinants of Senator ideology, above and beyond the expected effects of partisan subconstituencies *and* the Senator's own party identification.

The models presented in this paper reveal that, in the Senate, the opinions of constituents with higher incomes are more represented than those with lower incomes. This corresponds with the findings of Bartels (2008). What are the explanations for the advantage of high-income constituents? Exploration of voter constituent opinion as an alternative hypothesis to explain the income effects – since higher income voters turn out to vote at higher rates than lower income voters – is not supported here. Bartels (2008) also considers the opinion of higher political knowledge citizens and of citizens who contact public officials; he finds little reduction in the impact of high-income constituent opinion with the inclusion of these measures. He suggests that campaign contributions are the likely cause of the increased responsiveness to high-income citizens, but does not test this possibility due to constraints in the data.

It is important to note that the opinion differences between income-based subconstituencies are not substantial (and, in most instances, not statistically distinct). This additional finding, not explored in Bartels' work, suggests that the differential representation patterns noted in income and pooled models are not necessarily indicative of unequal representation. The opinions of low-income constituents align closely with the views of high-income constituents, so low-income district residents views are still represented in an indirect way. This finding should be subjected to verification using other measures of public opinion; it is obvious that the correspondence of low- and high-income constituency opinion may not be reflected across all issues. Reliance on ideological self-placement has its

weaknesses (as highlighted above) and it is likely that this measure overstates the congruence of opinion between these two constituent groups. Still, this effort reiterates the importance of assessing subconstituency opinion differences regardless of the measurement employed. Gilens finds that the rich and the poor are in agreement on approximately 60% of the public opinion poll questions in his study (Gilens 2005). Future studies need to explore subconstituency opinion differences as a crucial component in determining the real influence of potential representation gaps in the U.S. system.

Significant opinion differences are noted across all the partisanship categories examined here; however, Senator ideology seems to mostly reflect the district ideological average and does not demonstrate stronger connections to the reelection or the primary subconstituencies. When constituency opinion of income subgroups are combined with partisan subconstituency views in the Pooled model, even the effect of overall district ideology is no longer significant. Why aren't there closer ties to the ideology of a Senator's co-partisans in the state?[17] It is possible that the effect of partisanship of district residents may be moderated by this Senate data set. With staggered elections only every six years, the Senate is more isolated from partisan swings in the states. However, comparing Senators up for election to those who are not on the ballot doesn't reveal any stronger partisan subconstituency effects in election years. Studies of these same concepts in the House of Representatives may reveal different trends.

[17] Much of the effect of partisan subconstituencies is captured by including the control for Senator partisanship in the models. Without this control, models of Senator ideology are incompletely specified, but the primary and reelection constituencies are shown to have significant effects. By virtue of sharing the party identification of their Senator, the primary constituency shares similar preferences and they are having their preferences represented.

All these findings could be improved by the development of better measures of both constituency opinion and representative behavior. Matching the ideal points of Senators to the ideological self-placements of constituents offers a very limited view of the politics of representation. Even extension of Senate-side measures to specific roll-call votes captures only a partial component of the work that elected officials pursue on behalf of their constituents. Hall (1996) argues for a broadened definition of representational efforts to include the way members of Congress actually participate in the legislative process. Allocating scarce resources and time to a cause denotes a greater commitment to that issue and that subset of the constituency than does a roll-call vote for that group's interest.[18]

This same logic applies to metrics for constituent opinion; the views of participatory citizens should be accounted for in estimations of responsiveness to constituents. Through the reliance on ideology and general preferences, direct communication from the district (i.e. phone calls, letters, personal contacts) is not taken into account. While the entire constituency does not call and express their views on each issue, there is a subset of the district that does initiate contact and offer their opinions on issues that are important to them. Are the effects of the entire electorate's general ideology or the expressed preferences of a subset of the district more influential in legislator's behavior and ideal point? "Should the legislator respond to the articulated demands of the few or the views he believes a much larger number probably hold?" (Jewell 13).

Miler (2010) offers the theory of legislative perception to provide a preliminary answer to this question. She suggests that "legislators are more likely to act on behalf of

[18] In fact, Hall (1996) offers a very minimal test of the effect of constituent income on representative behavior, finding that "members tend to walk onto the House floor to pursue the interests of (non-poor) constituents likely to be affected by the matter under consideration" (203).

those constituents they perceive in the district" (3). Acting within a high-information, high-pressure environment, elected officials necessarily rely on cognitive heuristics when thinking about the interests in their districts, resulting in "perceptions that are neither a perfect nor a representative reflection of the constituents actually in their districts" (3). Through interviews with 81 legislative offices on Capitol Hill, Miler finds evidence of systematic biases in legislator perceptions of their districts. Members of congress are more likely to perceive constituents who are "active in contacting and contributing to the legislative office" (103). The current treatment of public opinion in studies of representation does not account for differences in more or less visible populations. Studies that consider the ideology of citizens and the ideology of legislative outcomes cannot identify the citizens that are more interested in and likely to voice their opinions on particular issues. Identifying district residents who have a propensity to be politically active and/or have available resources could provide a new way to assess subconstituencies and their effects on policy; this possibility should be pursued further.[19]

As Clinton (2006) acknowledges, inadequate measures have limited progress for the study of subconstituency influence: "Since few alternatives to survey-based measures of same-party constituency opinion exist, research into the influence of subconstituency preferences…has been limited" (399). Using one of the few data sets that allows for some exploration of subconstituency concepts, this study is meant to advance a focus on district subgroups and their influence in representative government. There are many more

[19] Exploration of participation subconstituencies could be viable, even relying on the same constituent ideology measures already employed. Most studies incorporate a series of questions about respondent political activism (contacting a legislator's office, working for a campaign, etc.). For some reason, these responses were not available in the Senate Election Study data I had access to, meaning these questions are deferred to future research.

subconstituencies that need to be investigated and new measures of both constituent opinion and legislative behavior are necessary to examine these important questions about the quality of our representative democracy.

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Appendix A: Additional Tables

Table 10. Models, *without Party of Senator Control*

	Partisanship Model	Income Model	Pooled Model
Geographic	0.7519*	---	0.0025
Constituency Opinion	(0.321)		(0.347)
Reelection Constituency	-1.7409***	---	-2.0631***
Opinion	(0.355)		(0.362)
Primary Constituency	2.6222***	---	2.5617***
Opinion	(0.144)		(0.136)
Low-income	---	-0.9933	0.4063
Constituency Opinion		(0.582)	(0.482)
Middle-income	---	1.6058*	1.1597*
Constituency Opinion		(0.632)	(0.477)
High-income	---	1.5604	1.9663***
Constituency Opinion		(0.802)	(0.423)
Constant	-0.0029	-0.2663***	0.0095
	(0.059)	(0.073)	(0.065)
R^2	0.729	0.097	0.761
	n=302	n=302	n=302

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

Table 11. Pooled Model, estimated for each year.

	101st Congress 1989-1990	102nd Congress 1991-1992	103rd Congress 1993-1994	Pooled Analysis 1989-1994
Geographic	-0.0421	-0.0299	0.4133	0.1102
Constituency Opinion	(0.339)	(0.344)	(0.349)	(0.305)
Reelection Constituency	-0.0031	-0.0570	-0.4187	-0.1541
Opinion	(0.482)	(0.504)	(0.475)	(0.447)
Primary Constituency	0.1159	0.1029	0.0823	0.0942
Opinion	(0.390)	(0.398)	(0.394)	(0.363)
Low-income	0.0605	0.1751	-0.1117	0.0469
Constituency Opinion	(0.449)	(0.495)	(0.552)	(0.444)
Middle-income	0.8317	0.8227	0.6754	0.7826
Constituency Opinion	(0.436)	(0.454)	(0.521)	(0.424)
High-income	1.0370*	1.0114*	1.4893***	1.1777**
Constituency Opinion	(0.436)	(0.454)	(0.441)	(0.401)
Party of Senator	0.5869***	0.6151***	0.6238***	0.6098***
	(0.090)	(0.093)	(0.084)	(0.083)
Constant	-0.4754***	-0.4807***	-0.4934***	-0.4847***
	(0.095)	(0.099)	(0.096)	(0.088)
R^2	0.844	0.836	0.834	0.836
	n=100	n=101	n=101	n=302

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

Table 12. Comparison of Partisan Subconstituencies for Democrats, by state.

	Statewide Opinion	Reelection Constituency	Primary Constituency
Alabama	0.5056818	0.5149254	0.0597015
Alaska	0.2	0.2341772	-0.0189873
Arizona	0.1625	0.2671756	-0.0305344
Arkansas	0.5063291	0.5203252	0.1788618
California	0.1574803	0.2079208	-0.0693069
Colorado	0.1502591	0.2134146	-0.0670732
Connecticut	0.1273885	0.219697	-0.0454545
Delaware	0.1630435	0.2368421	0
Florida	0.3910256	0.4488189	0.0708662
Georgia	0.4695122	0.4656489	0.1603053
Hawaii	0.1958042	0.2920354	0.0707964
Idaho	0.3062201	0.3666666	0.0111111
Illinois	0.127907	0.1780822	-0.0684932
Indiana	0.2692308	0.3205128	0.0384615
Iowa	0.3068783	0.3694268	0
Kansas	0.2760417	0.2903226	0.0387097
Kentucky	0.3636364	0.3851351	0.0810811
Louisiana	0.4	0.4538462	0.1153846
Maine	0.2663317	0.3803681	0.1104294
Maryland	0.1118421	0.2105263	-0.0350877
Massachusetts	0.242424	0.1021898	-0.1167883
Michigan	0.2717391	0.3378379	-0.0337838
Minnesota	0.2319588	0.2981367	0
Mississippi	0.3818182	0.424	0.04
Missouri	0.208589	0.3076923	0.0538461
Montana	0.1387283	0.1538462	-0.0419581
Nebraska	0.3771429	0.4172185	0.0662252
Nevada	0.2321429	0.260274	-0.0342466
New Hampshire	0.2485549	0.3469388	-0.0272109
New Jersey	0.2333333	0.2735043	-0.0769231
New Mexico	0.2163743	0.270073	-0.0145986
New York	0.1231884	0.2285714	-0.0095238
North Carolina	0.3636364	0.4084507	0.0774648
North Dakota	0.3584906	0.4140625	0.0859375
Ohio	0.2244898	0.2695652	-0.026087
Oklahoma	0.490099	0.5384615	0.1794872
Oregon	0.2443182	0.3741497	0.0340136
Pennsylvania	0.2876712	0.412844	0.0733945
Rhode Island	0.1341463	0.1532847	-0.0291971
South Carolina	0.4033149	0.4468085	0.0921986
South Dakota	0.2731959	0.3333333	0.0123457
Tennessee	0.3825137	0.4044118	0.0808824
Texas	0.3941176	0.4452555	0.0875912
Utah	0.2215569	0.350365	-0.0364963
Vermont	0.16	0.1953125	-0.0859375
Virginia	0.3958333	0.45	0.0499999
Washington	0.1523179	0.2131148	-0.0983607
West Virginia	0.4461538	0.4965517	0.2
Wisconsin	0.2580645	0.3333334	0.0916667
Wyoming	0.3417085	0.3779069	0.0813953

Table 13. Comparison of Partisan Subconstituencies for Republicans, by state.

	Statewide Opinion	Reelection Constituency	Primary Constituency
Alabama	0.5056818	0.5	0.3059701
Alaska	0.2	0.2278481	0.164557
Arizona	0.1625	0.2519084	0.2977099
Arkansas	0.5063291	0.4308943	0.203252
California	0.1574803	0.2178218	0.2277228
Colorado	0.1502591	0.2621951	0.2317073
Connecticut	0.1273885	0.280303	0.2272727
Delaware	0.1630435	0.256579	0.1973684
Florida	0.3910256	0.4015748	0.2992126
Georgia	0.4695122	0.4198473	0.1984733
Hawaii	0.1958042	0.2123893	0.159292
Idaho	0.3062201	0.3833333	0.2666667
Illinois	0.127907	0.2328767	0.1712329
Indiana	0.2692308	0.2884616	0.2307692
Iowa	0.3068783	0.4012739	0.299363
Kansas	0.2760417	0.2580645	0.2193549
Kentucky	0.3636364	0.3378378	0.2432432
Louisiana	0.4	0.3230769	0.3
Maine	0.2663317	0.3374233	0.196319
Maryland	0.1118421	0.2631579	0.1491228
Massachusetts	0.242424	0.1386862	0.1313868
Michigan	0.2717391	0.3716216	0.2635135
Minnesota	0.2319588	0.3167702	0.2236025
Mississippi	0.3818182	0.408	0.272
Missouri	0.208589	0.2615384	0.2076923
Montana	0.1387283	0.1818182	0.1258741
Nebraska	0.3771429	0.3907285	0.2715232
Nevada	0.2321429	0.2321429	0.1986301
New Hampshire	0.2485549	0.3333333	0.2517007
New Jersey	0.2333333	0.2991453	0.2649573
New Mexico	0.2163743	0.2481752	0.2554744
New York	0.1231884	0.2380953	0.2095238
North Carolina	0.3636364	0.3661972	0.3098592
North Dakota	0.3584906	0.3515625	0.2421875
Ohio	0.2244898	0.3478261	0.2782609
Oklahoma	0.490099	0.3910256	0.3076923
Oregon	0.2443182	0.4013605	0.3129252
Pennsylvania	0.2876712	0.3577982	0.3027523
Rhode Island	0.1341463	0.1751825	0.0729927
South Carolina	0.4033149	0.4184397	0.2695035
South Dakota	0.2731959	0.2901235	0.2469136
Tennessee	0.3825137	0.3235294	0.2426471
Texas	0.3941176	0.4233576	0.1970803
Utah	0.2215569	0.4160584	0.3284672
Vermont	0.16	0.2109375	0.1953125
Virginia	0.3958333	0.4583333	0.2666667
Washington	0.1523179	0.2704918	0.2213115
West Virginia	0.4461538	0.3931035	0.2206897
Wisconsin	0.2580645	0.275	0.1666667
Wyoming	0.3417085	0.3546512	0.25

Table 14. Comparison of Income Subconstituencies, by state.

	Low Income	Middle Income	High Income
Alabama	0.1758216	0.2058398	0.1156972
Alaska	0.0186744	0.1003688	0.0702841
Arizona	-0.0208703	0.0932806	0.0685374
Arkansas	0.2029272	0.2056962	0.0886101
California	0.0119908	0.0856214	0.0534321
Colorado	0.0062315	0.0661364	0.0690261
Connecticut	0.0221595	0.0688628	0.0407392
Delaware	0.024608	0.0410503	0.0739286
Florida	0.1294366	0.190893	0.1408606
Georgia	0.1654	0.1928677	0.0869565
Hawaii	-0.016117	0.1123021	0.0807589
Idaho	0.0805288	0.1523433	0.057688
Illinois	0.061565	0.0263401	0.0400204
Indiana	0.0258621	0.127954	0.0586494
Iowa	0.1604032	0.1208645	0.0054919
Kansas	0.0185968	0.1259303	0.1062957
Kentucky	0.1680246	0.121229	0.0893771
Louisiana	0.15675	0.1585694	0.0830587
Maine	0.1146766	0.1022713	0.0596808
Maryland	-0.0081083	0.0685188	-0.00715
Massachusetts	0.0305525	0.01989	-0.0127925
Michigan	0.0663522	0.07232	0.1111067
Minnesota	0.0054916	0.1234947	0.0684047
Mississippi	0.1817677	0.1296269	0.1094898
Missouri	0.0769935	0.01292	0.1123432
Montana	-0.01292	0.0906911	0.0457867
Nebraska	0.1024946	0.170909	0.1162335
Nevada	0.0778471	0.0133624	0.1269809
New Hampshire	0.0687399	0.0688699	0.1173295
New Jersey	0.022	0.1046981	0.1239536
New Mexico	0.0208535	0.1331767	0.0406878
New York	0.0349545	0.0326242	0.0232439
North Carolina	0.0854339	0.1572581	0.1258032
North Dakota	0.1410204	0.0935541	0.1210185
Ohio	0.118668	0.0347699	0.0894379
Oklahoma	0.1809155	0.1994845	0.1318639
Oregon	0.0651041	0.1175684	0.0584848
Pennsylvania	0.128229	0.1424669	0.0230503
Rhode Island	-0.0456326	0.1003556	0.0777417
South Carolina	0.0998521	0.0735941	0.2011811
South Dakota	0.0898989	0.072929	0.075257
Tennessee	0.1527667	0.1117949	0.0577277
Texas	0.1216822	0.1609031	0.1043006
Utah	0.0519876	0.1021292	0.0807391
Vermont	0.0587829	0.0518293	-0.0074529
Virginia	0.0807692	0.1921523	0.1076985
Washington	0.1039862	0.0596731	-0.0068938
West Virginia	0.1766301	0.2006969	0.051813
Wisconsin	0.0492697	0.0886877	0.0675897
Wyoming	0.0219852	0.2299905	0.0704153

Table 15. Comparing Senators up for Election with those Not up for Election, *Democrats*.

	Partisan Model		Income Model		Pooled Model	
	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election
Geographic Constituency Opinion	-0.0075 (0.304)	0.0578 (0.253)	---	---	-0.1555 (0.357)	-0.0717 (0.332)
Reelection Constituency Opinion	0.8552 (0.448)	0.6193 (0.382)	---	---	0.3992 (0.689)	0.1203 (0.568)
Primary Constituency Opinion	-0.4910 (0.377)	-0.2757 (0.388)	---	---	-0.4466 (0.418)	-0.1765 (0.418)
Low-income Constituency Opinion	---	---	0.2186 (0.257)	0.1603 (0.241)	0.2453 (0.556)	0.2217 (0.604)
Middle-income Constituency Opinion	---	---	0.8004* (0.305)	0.6699* (0.305)	0.8813 (0.485)	0.7482 (0.446)
High-income Constituency Opinion	---	---	0.5239 (0.328)	0.6563* (0.278)	0.4453 (0.563)	0.6485 (0.4768)
Constant	-0.594*** (0.082)	-0.540*** (0.087)	-0.470*** (0.027)	-0.460*** (0.029)	-0.550*** (0.108)	-0.488*** (0.114)
R^2	0.278 n=59	0.258 n=111	0.292 n=59	0.293 n=111	0.312 n=59	0.297 n=111

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001

Table 16. Comparing Senators up for Election with those Not up for Election, *Republicans.*

	Partisan Model		Income Model		Pooled Model	
	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election	Up for Election	*Not* Up for Election
Geographic Constituency Opinion	1.2230** (0.424)	0.8628 (0.447)	---	---	0.3682 (1.089)	0.0127 (1.073)
Reelection Constituency Opinion	-0.8124 (0.695)	-0.1090 (0.694)	---	---	-0.6155 (0.722)	0.0392 (0.698)
Primary Constituency Opinion	1.0537 (0.677)	0.3620 (0.721)	---	---	1.0211 (0.695)	0.5126 (0.710)
Low-income Constituency Opinion	---	---	0.0835 (0.451)	-0.0658 (0.477)	-0.1081 (1.014)	-0.3054 (1.025)
Middle-income Constituency Opinion	---	---	1.0307 (0.519)	1.0129 (0.554)	0.7830 (1.197)	0.8328 (1.117)
High-income Constituency Opinion	---	---	2.1502** (0.715)	2.0545** (0.690)	1.9713 (1.145)	2.0141 (1.083)
Constant	0.0006 (0.118)	0.0218 (0.118)	0.0326 (0.072)	0.0350 (0.066)	-0.0610 (0.145)	-0.0651 (0.153)
R^2	0.237 n=45	0.143 n=87	0.294 n=45	0.229 n=87	0.328 n=45	0.243 n=87

Robust Standards Errors (clustered by member) are found in parentheses below the coefficients
* p<0.05, ** p<0.01, ***p<0.001