Abstract

Climate change legislation in the United States Senate is marked by dissent and division. In order to understand this division, it is important to determine why Senators feel the way they do about climate legislation and what reasons they give for their support or opposition. John Kingdon’s model of legislative choice supplemented by an ideological model provides a conceptual description of climate legislation voting in the Senate. For this thesis I have created of an original data set of the reasons Senators mention in any public statement during the 111th Congress describing their support or opposition to climate legislation. Analysis of this data set shows a number of factors that enhance understanding of the climate debate in the Senate. These factors include the overall prevalence of economic arguments; a general lack of partisan divide on which issues are discussed, e.g. Democrats and Republicans talked about foreign policy a comparable amount; and that Senators strongly opposed to climate legislation mentioned the science behind climate change almost twice as often as Senators who are in favor, neutral or even weakly opposed to climate legislation.
Introduction

Climate change is an issue that seems to polarize like no other. This is reflected in its political history; after at least six major comprehensive climate bills in the U.S. House and Senate in the past decade, and over a hundred minor ones in the 111th Congress alone, very few new policy solutions have actually become law.\(^1\) Policymakers disagree on all aspects of climate legislation, from the economic structure of the system to the science of climate change itself. Why is there such contentious debate?

In this thesis, I attempt to describe why Senators in the 111th Congress feel the way they do about climate legislation. At the start of the project, I expected to be able to tie these feelings to actual votes; unfortunately, no comprehensive legislation was actually brought to the floor in the time period I studied. Nonetheless, I built a data set of statements from Senators that describe their public inclinations towards favoring or opposing climate legislation. I will explore the motivations behind sets of Senators concentrating on one issue or another, in an attempt to describe which arguments have been most used in ongoing discussions.

The first section of this thesis is an introduction to the field of legislative choice as a whole, and how it applies to climate legislation. There is very little literature that specifically covers climate issues, so I combine an existing model with the building blocks for a new one to form a fuller view of how Senators make decisions on climate bills. The second section is a content analysis of public statements from fifty Senators, one chosen at random from each state. This is the section that attempts to describe in a more concrete way what issues are most important to different sets of Senators—or at least what they say is the most important—and thus what issues reflect their voting habits.
The Senate is a complicated place with hundreds of conflicting influences. The process that goes into the creation, debate, and final outcome of a bill is complex and not easily comprehensible. This thesis attempts to simplify and condense that process into something that can be more easily dealt with from a strategic perspective. I do not claim to solve any of the problems and disputes that face climate legislation, but instead help to clarify them so that the nature of the disputes is more readily apparent.
Legislative Choice

One of the most important parts of determining why Senators feel the way they do about various climate bills is finding a general model that describes why they vote for or against legislation. The field of legislative choice offers a wide realm of models to pick from, but only a few can help describe an issue like climate change. This paper will start with a description of typical models of legislative choice, where they are valuable, and what problems arise in this type of consideration. It will then move to a discussion of John Kingdon’s actor-based model of choice, which will provide a good background for a new model that presents solutions specific to climate change.

Most models of legislative choice fall somewhere in between two extreme and nearly opposite modes of thinking. The first mode believes voting behavior can be determined based solely on the member’s own ideology or policy attitudes towards an issue. This form of model requires that members have sufficient information to make a reasoned decision on every issue they vote on, whether it is a bill of major importance and widely known, or minor and relatively insignificant. It also requires that the choice is made internally; the member will hear opinions and ideas from other policy actors, such as constituents, industry groups, and even their advisors, but will decide what is best for the country and their state individually.

There are two main problems with strictly applying this type of model to every bill considered in Congress. The first is that for the majority of bills and actions in each chamber, most members, and even their staff, are not very well informed. This is partly a product of the vast amount of uncontroversial and procedural legislation that comprises a large part of Congress’s agenda. A lack of information about an issue makes it more likely that when the member is deciding how to act, he or she will rely on cues from actors around them. For a vote
for which there is no public controversy, a member will much more likely vote with the rest of
his or her colleagues than try to gather enough information to make an informed personal
decision.³

The second problems also relates to information. Many issues are quite complicated and
require a certain level of specific policy background to understand the best course of action. In
these cases, most members will not have the necessary knowledge or training to be able to fully
comprehend the choices faced, and which option in fact corresponds to their personal ideology,
and they must turn to an expert in the field. This person could be a close advisor, a member of
industry, lobbyist, colleague, or any other number of actors. In many cases, the member will rely
on trusted sources that he or she knows have a similar ideological background. However, there
are times when the only source of sufficiently detailed or advanced information on an issue is an
actor the member does not know a whole lot about. This can lead to advice the member might
disagree with if he or she were more informed on the issue in question.⁴

The second mode of thinking in typical legislative choice models is outlined in Congress:
The Electoral Connection, by David Mayhew.⁵ Mayhew is convinced that members of Congress
are “single-minded seekers of reelection.” This mode describes a model of choice where
members, instead of considering what is ideologically consistent with their own views, make
decisions based solely on how it will personally benefit them in future elections. There are a
number of ways to improve reelection chances. The most effective is satisfying those actors that
directly or indirectly have an impact on elections, such as industry, party leadership, and
constituencies.⁶

There are two major difficulties with this mode of thinking. The first, similar to the
ideological case, is conflicting or nonexistent information. Often it is extremely difficult to
determine what actions will improve reelection chances; for example, certain industry figures may be opposed to a bill but the constituency is in favor of it. Does a member favor companies that may be able to provide a good deal of campaign funds, or the people who actually vote for him or her? Also, for many minor issues it is unclear just what opinions various actors hold, and thus the best option to increase reelection chances is not apparent.

The second difficulty is evidence-based. There are many cases of members voting apparently in opposition to their own reelection chances—against the party line, in opposition to constituent opinion, or other reasons. This is especially true in times when the member does not feel threatened in coming elections, either because he or she is in a “safe” district or is retiring. A good example of this is the position taken by Representative Bart Stupak in the 2009-2010 health care debate. Stupak is one of the few Democrats who are strongly against abortion, and he defied both his party and constituency in holding out against the health care reform legislation until it included language preventing the federal funding of abortion. This action definitely hurt his reelection chances—in fact, he announced his retirement a month or two after taking his stand—but it lined up with the ideology he had espoused from the beginning of his career in politics. While reelection is certainly a pressing concern for many members, it is by no means the only reason they vote the way they do.

To build a satisfactory model of legislative choice, both the ideological and reelection modes must be taken into account, as neither will work solely on its own. Some balance of the two ideas should be found in order to fully describe the actions of members. John Kingdon does a very comprehensive job walking the line between the two modes in his influential work *Congressmen’s Voting Decisions* (1973).
Kingdon’s model is derived from the results of his yearlong study, spent extensively interviewing congressmen and other actors. The entire first section is devoted to what he calls “political actors—constituents, party leaders, administration, fellow congressmen, and the like.” These actors form the base of the eventual model he develops. In addition to those mentioned in the quote from his book above, he talks about interest groups and staff members.

After detailed discussions of the roles of the different actors in a political system, Kingdon develops his full model, which he calls “the consensus mode of decision.” From studying each set of actors individually, he determined that there is no single set that alone can describe a member’s legislative choices. Thus, there must be some sort of decision-making process that occurs, that factors in multiple opinions and sources of information, based on who and what the member trusts the most, and what his or her most important legislative and personal priorities are. Kingdon’s model does this in a remarkably simple way.

His model comprises a series of questions the member asks about the legislation he or she is considering. The first is whether the bill or issue is controversial in any way. If there is no opposition from any source, there is generally no need to consider the issue further. Members often are limited by time in terms of gathering information, and so a non-controversial issue makes their job easier in terms of making a decision.

The next level down in the model arises when an issue is in fact controversial in some way. In this case, the member will ask whether any actors in what Kingdon calls the member’s “field of forces” disagree on the best outcome. This “field of forces” refers to those actors whose opinion and influence the member actually values, as well as any personal policy attitudes the member has. For instance, on a comprehensive climate bill, Senator Barbara Boxer (D-CA) will not value the opinions of the coal lobby very highly, because California doesn’t have much coal.
and listening to them wouldn’t provide her with any kind of advantages. However, someone like Senator Jay Rockefeller (D-WV) will care a lot about what the coal lobby says, because it is the biggest industry in his state and a lot of his campaign funds come from coal companies. For Senator Boxer, the coal lobby would not be inside her field of forces; for Senator Rockefeller, it would. If no actor within that field of forces disagrees on a choice, even if other outside actors do, a member will vote along with his or her field.

The next level down arises when there is some conflict in the field of forces. Kingdon shows that if only one or two actors within a member’s field are in disagreement with the rest, the member will vote with the majority almost all of the time. For example, if a member’s constituency and party are aligned on an issue, but one of his or her trusted peers is in opposition, it is very likely that the member will vote with the majority. With more than one or two actors in opposition, Kingdon’s model becomes vague, and he says that a different mode of decision-making must apply. This level, which Kingdon’s model cannot describe, is what my new model will focus on.

The six sets of actors Kingdon outlines are the most important influences on a member’s legislative choices. But what kind of influence do they actually have? Kingdon finds significant correlations between the positions of the actors and the choices made by members, but that correlation could exist for two principal reasons. The first is a causation relation; namely, that the position of the actor in question directly influences the member’s position on an issue. This is an active relation, assuming the member has no preconceptions and the “field of forces,” including the member’s own policy ideologies and the opinions of actors around them, create the member’s own position. This corresponds most closely to the mode of legislative choice where a member solely seeks reelection.
A second reason correlation could exist is basically a kind of selection bias. A member chooses his or her own “field of forces,” meaning there is a distinct possibility that he or she will choose actors that align with the member’s policy opinions. Of course, the member cannot choose all of the actors that go into his or her field; a good example is the administration, which will be a player in almost every circumstance. However, the member can decide how much attention and importance he or she will assign to each actor. This selection bias corresponds to the mode of legislative choice where a member is governed by his or her own policy ideologies.

Kingdon’s model represents a compromise between the two opposite modes of legislative choice discussed earlier. He doesn’t try to ascertain why a correlation exists between the positions of actors and members; instead he creates a model based only around the correlation itself. However, his model does not easily apply when we are thinking about something like climate change legislation. These issues are described below.

The first problem with applying Kingdon’s model to climate legislation is that his model usually describes the choice process when a member is voting on an issue on which they are not very well informed. Many of the actors function in Kingdon’s model by providing basic knowledge in addition to informing the member of their own opinion on an issue. However, the climate change debate has existed in the public sphere for such a long time that most Senators are sufficiently informed to have at least an internal ideological position. Not only do Senators have more information; the rest of the actors inside their field of forces are better informed, as is the media. That makes them more accountable for their decision, as they have to listen to more opinions and reason out what is best for them. In general, as Senators become more informed on an issue it seems likely that their ideological or policy attitude towards that issue will play a greater role in the field of forces influencing their decision on the issue.
Even though they have a lot of information and have likely formed an ideological position, it is not necessarily true that the information is actually factual. Gary Mucciaroni and Paul Quirk’s book *Deliberative Choices* presents a series of case studies on the actual informative value of debate in the House and Senate. They conclude that even on well-known issues with high salience, such as the climate change debate, information value can suffer when there is severe partisanship and other problems.\(^\text{10}\)

The second difficulty in applying Kingdon’s model to climate legislation is that for many Senators, the field of forces they interact with has multiple actors on both sides of the issue. For instance, consider Senator Susan Collins (R-ME). Her party leadership, trusted peers and some interest groups she pays attention to are generally against climate legislation, but the administration, her constituency, and other interest groups are generally in favor. Unfortunately, at this point, Kingdon’s model trends toward vagueness. There are some Senators who have actor groups that mainly agree on the issues, and it will work for them, but many others face more diversity.

The third difficulty is related to the second, and more specifically to comprehensive climate legislation in general. Climate change is an extremely broad topic, and the model so far assumes actors agree or disagree on that broad level. However, with a comprehensive bill that includes so many different provisions, many actors and the Senators themselves will agree with some pieces but disagree with others. Senators and actors will also ascribe different levels of importance to each issue; a Senator might agree with many aspects of the bill, but still be against it because they care very deeply about a specific issue they disagree with.

In order to properly describe how Senators feel about climate legislation, I propose a new model that builds off Kingdon’s. It describes the legislative choice process when most Senators
and actors have a lot of information, when there is division between actors, and when the bill itself has a number of divisible, possibly controversial issues.

The new model is essentially a combination of the two opposite modes of thinking discussed at the beginning of this section: ideology vs. reelection prospects. It creates a slightly different duality, though, looking at the blending of internal and external stimuli. Internal stimuli are any policy opinions that a Senator holds. That could mean what he or she believes is morally right, what he or she thinks will benefit some group the most, and other potential reasons. External stimuli pressures from all of the other actors that hold some sort of opinion about what is right for them or some group they represent. Senators pay attention to their internal stimuli when they are trying to vote more ideologically, according to their own policy attitudes. They pay attention to external stimuli when they want to please others; this could be, for example, because they are concerned about reelection, or want to gain more power in the Senate.

Senators value both internal and external stimuli in varying degrees for each policy issue. As discussed in the analysis of Kingdon’s model, when an issue is uncontroversial, either in all circles or just within the Senator’s field of forces, the external stimuli—other actors in that field—are much more important than trying to gather enough information to create convincing internal stimuli. However, in cases where there is a good deal of information, and a lot of division between actors, Senators pay more attention to internal stimuli. In other words, in cases like climate legislation, for many Senators there is little agreement between actors and thus no apparent consensus within the external stimuli. When consensus is absent, especially when abundant information is available, the Senator is forced to rely more on internal stimuli.

Kingdon’s model does an excellent job describing the situations in which a Senator relies mainly on external stimuli. The new model, therefore, must give a description of how Senators
feel about various issues when they must rely mostly in internal stimuli, as seems appropriate for many Senators in the climate debate.

Issues like climate change and the legislation associated with it have different effects in different regions. For an issue with these regional differences, it is likely that policymakers would be specifically concerned about and loyal to the region they are representing. For Senators, this region is their state. Different states are affected differently by climate legislation, and by climate change itself. For instance, Alaska has already had to start planning the relocation of low-lying villages due to coastal erosion and rising sea levels, caused by climate change. An example in opposition is West Virginia, the largest coal producer east of the Mississippi. If climate legislation is passed requiring large greenhouse gas emissions reductions, the coal industry may suffer losses, hurting West Virginia’s economy. All else equal, a Senator from Alaska will be more likely to vote for climate legislation than a Senator from West Virginia.

All Senators, of course, should be concerned with not only the well-being of their states but of the nation as a whole. Many worry that climate legislation would put America at an economic disadvantage to the rest of the world, because of restriction on industry. Others believe that if America does not invest in clean energy technology and force businesses to become greener, we will start losing out to other countries in the green economy of the future. The prosperity of states depends on the well-being of America, and so Senators who are concerned about climate effects on the states will have similar feelings towards the country as a whole.

In addition, many Senators care about the safety and security of the world. Few if any Senators wish harm upon other countries, and so if given a choice between a policy that will harm the world and one that will help, Senators will choose the policy that helps, assuming it doesn’t hurt their more specific region.
In terms of describing internal stimuli that affect a Senator, this is a good outline to build a model around: State, Country and World, three levels of ideological concern. Some combination of these three levels is what describes a Senator’s policy attitudes, or internal stimuli. This combination is influenced by two measures: importance and effects. Each Senator ascribes a certain relative degree of importance to each level. Some Senators believe their state’s interests should come much higher than the interests of the nation or the world as a whole, while others may place a more equal value. This is very similar to the debates over federalism, an idea that scholars have discussed for years. Many Senators with strong environmental records consider the World/Country levels to have more importance than others do, since they value the environmental quality over larger regions.

For each issue or bill, every Senator interprets differently the effects it will have on the three ideological levels. For instance, some think that putting a price on carbon would be very good for the World, but hurt America and State economically. Others believe that putting a price on carbon wouldn’t help the World much, but it might drive business innovation, and so America would benefit; however, it may put a burden on State-level industry.

The internal stimuli that drive a Senator’s voting decisions depend directly on the importance he or she ascribes to each ideological level, and the effects of each issue on that level. Based on these interpretations of the world around them, a Senator will have different views on what the best course of action is to take on each issue, and how important that issue is compared to others. For a bill with many issues like climate legislation, this ranking process is how a Senator can understand and recognize which pieces are the most important, which are not preferred, and what changes need to be made. If there are a number of important pieces missing,
or working in the opposite direction from the Senator’s beliefs, the Senator will likely vote against the bill.

Two examples as they relate to climate legislation will make this even clearer. The first is one of the most often discussed: the costs and benefits of legislation with a focus on industry. Some believe that climate legislation will harm industry, especially in the short run, particularly in certain states. Others believe forced emissions cutbacks in some way will make American businesses more competitive either by driving innovation and the creation of new technologies, or by creating an economy based on clean energy production.

So how does this fit into the new model? Some states, such as Texas, have large industries associated with the fossil fuel business; Senators from those states who have strong State ideological levels are not likely to be in favor of climate legislation. However, Senators with strong World ideological levels will be more likely to be in favor, because the creation of new technologies will improve the global economy and environment in the long run, even if a few companies have to lay off workers or go bankrupt. Senators with strong Country ideologies could go both ways, depending on if they believe the overall economic effects of legislation will benefit America or not.

Another good example is a national security issue caused by climate change: destabilization of regions and countries around the world. Many Senators accept that climate change could cause rises in sea levels, more diseases and changes in weather patterns. All of these impacts could destabilize certain areas, especially where there is extensive poverty. A good example is Bangladesh; rising sea levels could cause enough flooding to displace up to thirty million refugees into nearby India. This would not only be bad for the region; destabilization could also be expensive and potentially dangerous for the United States.
Senators with strong World level ideologies would instantly see this as an important issue, making climate legislation vital to prevent millions of climate refugees and thousands of potential deaths. Senators with stronger Country ideologies could view this in multiple ways. Some would view it as having a large net effect on America, in terms of the United States’ historic role as a steward in conflicts we are not directly involved in, or because destabilization can multiply our enemies and hurt our allies. Others would not be convinced that the effects of destabilization would hurt America much. Senators with stronger state ideologies would not be swayed as easily by arguments framed around this issue.

There are two extreme models of legislative choice that this paper combines into a new model. This new model, laid out above, describes Senators as being affected by both internal and external stimuli. Kingdon’s model does a good job predicting member voting habits when they are mainly ruled by external stimuli, but does not fully describe choice behaviors for comprehensive climate legislation. When there is abundant information about a topic, actors are divided, and there are a number of different issues bundled into a single bill, it may be fruitful to look more closely at the internal stimuli driving Senators’ choices. Climate legislation is an immensely complex topic, and describing how Senators choose various outcomes is equally so. The new model is designed to simplify that process.
Content Analysis

Introduction

In attempting to describe the stated opinions of Senators about climate legislation, I built a data set based on a content analysis of fifty Senators’ public statements on the issue of climate change from January 1, 2009 to May 31, 2010. Using the news and press release databases in LexisNexis, I attempted to compile a full universe of every public statement made by the Senators in the time period studied. I read a list of more than 26,000 potentially useful documents; of those, I coded the 600 that contained a quote, speech, press release, or other public communication from the Senator. This produced a data set that I will statistically analyze below, looking for trends that can describe potential voting habits. For a more thorough explanation of the coding process and for the coding sheet itself, please see Appendix 1.

In building the data set, I included two categories of variables. The first comprised demographic descriptors, such as the state a Senator was from, whether or not he or she was retiring, Democrat/Republican, and others. These demographic descriptors did not vary from statement to statement. The second was a set of observational variables, which were different in each statement. These include a ranking of the favorability of the statement towards a climate bill; whether the statement was prepared, as in a press release or speech, or unprepared, as in comments during a press conference or hearing; and finally the specific reasons a Senator gave in describing and defending their views on climate change. Senators often would include multiple reasons in a statement; for example, on July 24, 2009, Senator Boxer (D-CA) said in an interview with MSNBC, referencing climate change, “We can transform our economy. It could help with us with foreign policy, if you read Thomas Friedman's article today, Iran has so much sway in the world because they have so much oil and if we can get to clean energy and clean
jobs, we can rid ourselves of that, not that we buy their product.” She touches on a number of issues, such as foreign policy and a variety of economic reasons.

This study concentrates on the reasons Senators give for their position on climate change legislation. The analysis that follows aims to describe what issues various sets of Senators concentrate on the most. In aiming to describe voting behavior, this data set can suggest which issues are the most important to Republicans and Democrats, to those who support or oppose climate legislation, to those from different regions of the country, and so on. Below there is a description of the different variables used in the analysis, followed by the analysis itself.

**Demographic Variables**

These variables remain constant for all statements from each Senator. Some are binary variables, such as whether or not a Senator is retiring. Others are on some sort of scale, such as the percent of the time a Senator votes with his or her party. The variables are listed below, with short explanations.

- **Partisan Status.** This variable describes the partisan status of the Senator. I condensed it into a binary variable, meaning that it is only split into a value for Democrats and another for Republicans. The only Independent Senator in the study, Joe Lieberman (CT), is listed as a Democrat because he caucuses with the Democrats.
- **Retirement Status.** This variable, also binary, describes whether or not a Senator had announced that he or she is/was retiring during the time period of the study.
- **Year of Reelection.** This indicates which year a Senator is up for reelection.
• **Level of Partisanship.** This variable describes the percentage of times in the 111th Congress a Senator voted with his or her party. It is a good measure of the relative partisanship of each Senator compared to the others in his or her party.

• **Regional Analysis.** This is divided into eight different regions, as defined by the Bureau of Economic Analysis.\(^{15}\)

**Observational Variables**

These variables are separately observed for each statement from a Senator. Three are treated as independent variables in this study, while one is the dependent variable that the majority of the analysis will be based on. Some of these variables are scaled, while others are binary.

• **Date.** This variable is simply the date of the statement.

• **Prepared or Unprepared.** This binary variable describes whether the statement was unprepared or prepared. Examples of prepared statements are letters, speeches, and press releases; these statements, while likely staying true to the views of the Senator in question, were more likely written at least in part by staff members. Examples of unprepared statements are interviews, questions at a press conference, and comments during hearings.

• **Favorability.** For each statement, I coded a number between 1 and 5 that described how favorable the statement was towards climate change policy. For example, a statement like Thomas Carper’s (D-DE) in a hearing on October 29, 2009 would get a rating of “1” for being strongly in favor of climate legislation: “Climate change is the challenge of a
generation—my generation—our generation. We need to take bold action. The actions we'll take now will impact generations to come. The best way, I believe, to bring jobs and prosperity back to our country is also the best way to end our dependence on foreign oil, clean up our air, protect the Earth for our children and for their children.” On the other side, Charles Grassley (R-IA) had a press release on September 30, 2009 in reference to the climate bill that was just released in the Senate. I classified it with a “5” for being strongly against climate legislation: “In fact, it looks like the American consumer will be hit even harder in the coming years, while still being given no guarantee that other nations will agree to similar limits imposed by this legislation.”

- The fourth observational variable, describing the reasons coded from each statement, requires more discussion than the ones above. A fuller description of this variable follows in the “Reasons” section below.

**Reasons**

This section describes the different reasons Senators gave for why they favor or oppose climate legislation. I have divided these reasons into four categories: Science and the Environment (SE), Economy (Econ), Domestic Politics (DP), and National Security and Foreign Policy (FP). Each of those categories has between two and six more specific reasons embedded within it, described below. Each statement can be coded with multiple reasons, if more than one applies.

*Science and the Environment (SE)*
The first reason within this category is “Scientific Background.” This refers to any time a Senator either questions or defends the science backing climate change. For example, on December 29, 2009 Charles Grassley (R-IA) spoke on what he believes is the uncertainty surrounding climate science: “It brings attention to a lot of the scientists that are saying global warming is more natural than man-made, although they don't exclude man-made as being some addition to it, but is it enough to make a difference?”

The second reason within this category is “Benefits/Harms to Environment.” This reason would be coded if a Senator mentioned climate legislation as a way to protect the environment, or spoke about the harms or benefits of climate change in an environmental sense. For example, Senator Benjamin Cardin (D-MD) spoke on April 24, 2010 in reference to the cap-and-trade bill that was expected to be introduced in the Senate: “We’re trying to protect our environment.”

**Economy (Econ)**

The first reason within this category is “Costs/Benefits of Legislation to Industry.” Some believe that comprehensive climate legislation would damage industry because of a rise in energy costs. Others argue that climate legislation would drive conservation and innovation and many companies would produce the same amount for less energy, or with energy from greener sources. If business or industry is mentioned as an economic driver in a comment about climate change, this is the reason I coded. For example, on May 17, 2010, Debbie Stabenow (D-MI) said in a statement, “[M]uch more work needs to be done to make sure this bill will create jobs here in America, that it addresses the serious trade issues involved, and that it protects consumers and businesses from price increases.”
The second economic reason is “Costs/Benefits of Legislation to Consumers.” Similarly to industry, Senators are divided as to whether consumers will be hurt by rising energy prices, or helped by the development of clean energy sources and other effects. Any time consumers or citizens were mentioned, I coded this reason. For an example, see Senator Stabenow’s quote above.

The third economic reason is “Green Jobs/Clean Energy Economy.” Many Senators mentioned this in a positive light. If a statement talked about creating green jobs, creating a cleaner economy, or so on, I coded it under this category. For instance, Robert Casey (D-PA) wrote in a letter on August 22, 2009, “Domestic manufacturers and the workers they employ can and must play a vital role in our nation's clean energy future.”

The fourth economic reason is “Policy and/or Regulatory Mechanism.” This refers to the economic or policy mechanism the bill actually uses to achieve required emissions reductions, whether that is cap-and-trade, a carbon tax, some variation of the two, or another pricing plan altogether. Any time a Senator talked about the specific economic tools used to achieve a climate goal, I coded it under this category. For instance, in reference to the likelihood of getting a climate bill passed, Jeff Bingaman (D-NM) said on March 10, 2010, “Trying an economywide cap-and-trade system of the type passed through the House will be very difficult for us to do this year.”

The fifth economic reason is “Costs/Benefits of Climate Change Itself.” While the rest of the economic reasons thus far have been specifically about legislation, this describes when a Senator talks about the economic damages or benefits of climate change, whether through ocean acidification, flooding, or even greening of areas that were previously barren. For example, on March 23, 2010, Mark Begich (D-AK) called for “dedicated funding to assist Alaska
communities on the front line of climate change with the costs of village relocation, infrastructure rebuilding and energy costs.”

The sixth economic reason is “America’s Competitiveness Abroad.” Some believe that climate legislation will hurt our economy enough to lose market share in the global economy to countries that do not have similar restrictions on emissions, like China. Others believe that without encouraging or forcing businesses to innovate in clean energy technologies, we will lose market share in the future when the global economy becomes more driven by clean energy. If a Senator references our economy in relation to other countries when talking about climate change, I coded this reason. For example, see Senator Stabenow’s quote on page 20, in the first economics paragraph; she talks about “trade issues” and “creating jobs here in America.”

*Domestic Politics (DP)*

The first reason in this category is “Ideology/Size of Government.” Some Senators are opposed to climate legislation because they believe it is a government intrusion into the market, and indirectly into people’s lives. In addition, if a Senator talks about how climate reductions should be done on a state-by-state basis, I coded it in this category. An example is a letter from John Barrasso (R-WY) on June 4, 2009, which states, “The legislation poses sweeping changes to our nation’s energy and environmental laws, and involves complex issues of state equities, federalism, and consumer choice, among others.”

The second reason in this category is “Partisan Politics.” Many Democratic Senators blame the current failure of climate legislation on the delaying tactics of Republicans, while many Republican Senators believe Democrats are trying to push through a bill that has not been studied enough in terms of economic impacts. Any time a Senator mentions the other party in a
negative light, or alludes to it, it is coded in this category. For example, when Republican Senators boycotted an Environment and Public Works committee vote on November 2, 2009, Senator Frank Lautenberg (D-NJ) said, “It’s almost like school children over there.”

The third reason in this category is “Public Opinion/Representing Constituents.” Any time a Senator mentions the citizens of his or her state, or talks about public support or opposition to an issue related to climate change, I coded this reason. An example is Ben Nelson (D-NE), who on July 23, 2009, in reference to issue of climate legislation, stated that the letters he had received from constituents on the issue were about “99 to 1 against.”

The fourth reason in this category is “EPA Clean Air Act Regulatory Authority.” According to the 2007 Massachusetts v. EPA Supreme Court decision, the EPA is required to regulate greenhouse gases under the Clean Air Act because climate change constitutes a danger to human health. Many Senators, fearing this EPA regulation would hurt industry much more than a climate bill, use this as an argument against climate legislation. For example, Robert Byrd (D-WV) stated on March 5, 2010, “I was encouraged by the response last week from EPA Administrator Lisa Jackson to a letter that I signed along with other senators that would delay into next year the application of stronger standards regarding increased efficiency or reduced pollution at large power plants and factories.”

*National Security and Foreign Policy (FP)*

The first reason in this category is “Dependence on Foreign Resources.” There are few Senators who do not agree that the United States’ dependence on foreign oil is a problem. Some believe comprehensive climate legislation is the best strategy for reducing this dependence, while others think other tactics could have the same effects. A good example is from the press
release from Joe Lieberman (I-CT) on May 12, 2010: “Our bill will create jobs and transform the American economy; make our country more energy independent, which in turn will strengthen our national security; and improve the quality of the air we breathe.”

The second reason in this category is “Destabilization of Other Countries.” As mentioned briefly in the legislative choice section above, climate change can have devastating economic impacts, especially to developing countries. These impacts lead to instabilities that are potentially dangerous to the United States. Whenever a Senator mentions instability caused by climate change, I coded this reason. For example, Barbara Boxer (D-CA) stated in a speech on March 19, 2009 that it is very important to, “[w]ork with the international community, including faith leaders, to provide support to developing nations in responding and adapting to global warming. In addition to other benefits, these actions will help avoid the threats to international stability and national security posed by global warming.”

The third reason in this category is “America’s Standing Abroad.” America prides itself on the fact that it is a world leader, and some Senators are using that fact to argue that we need to lead the way on reducing emissions before other large emitters will sign on. Whenever a Senator mentions America leading the rest of the world (in a non-economic sense, as that possibility is covered in the “America’s Competitiveness Abroad” category) I coded this reason. For example, in a letter dated January 28, 2010, Michael Bennet (D-CO) said the President “could provide the momentum necessary to pass a clean energy, climate change, and employment bill and again demonstrate the world leadership that the U.S. showed in December.”

The fourth and final reason in this category is “America’s Political/Regulatory Autonomy.” Some Senators do not wish the United States to sign onto a treaty that would severely limit our economic choices, and do not want our authority and autonomy to be subject
to an organization that operates on the international level like the United Nations. If a Senator spoke about keeping the United States free from international laws that would put us at a competitive disadvantage or limit our rights in some way, I coded this reason. For example, Sherrod Brown (D-OH) wrote on December 4, 2009, “Indeed, to promote equitable and effective global action any new U.S. climate change laws should establish a national system of border adjustments, in concert with emission allowances or rebates to trade- and energy-intensive sectors of the economy.”

**Data Analysis**

The data set I researched and coded for this study has much information. In this section, I will analyze some of that information, but there will certainly be elements of the data set that I do not discuss. The data and this thesis paper, therefore, leave open the possibility for future study.

In this section, I will concentrate on the reasons and categories that Senators use to describe why they favor or oppose climate change, and try to determine what variables described above have the greatest significant effects on those reasons. The sections below are broken into these independent variable or variables.

There are two different sets of conclusions that could potentially be taken from this data. The first is quite bold, and not necessarily correct; it essentially takes the statements Senators are making at their word. If a Senator mentions that he or she does not believe in the scientific basis for climate change, this set would argue that this in fact implies the Senator does not believe in the science, or at least isn’t sure. The second set of conclusions is much safer; it recognizes that sometimes the statements a Senator is making are less about policy opinions and attitudes, and
more about pacifying that “field of forces” talked about in the Legislative Choice section of this paper. In the case where a Senator states he or she does not believe in climate science, this set would try to determine if he is pacifying the actors that influence his decisions, or actually disbelieves the science. When drawing conclusions from this data analysis section, I try to keep in mind which set they fall under.

Overview

For a brief overview of the data, see Figure 1 below. This is designed to provide a basis for subsequent discussions of the data.

Figure 1

This graph describes how often a statement includes at least one of the reasons within the broad categories. Single means that at least one reason falling under the broad category was mentioned, and multiple means at least two.

Figure 1 shows the relative percentages of statements containing at least one reference to the four broad categories discussed above. The black bars represent when at least one reason is mentioned within a broad category, and the grey bars represent at least two.
As you can see, more than 80% of statements from Senators included at least one mention of the economy, an enormous number. On top of that, nearly half of the statements mentioned more than one economic reason describing the Senator’s opinion. I suspected before this study that the economy is very important when considering climate legislation, especially in harsh economic times, but I didn’t anticipate the extent. Senators are extremely concerned about the economic effects of climate change and climate legislation.

**Trend Analysis**

For the independent observational variables and Partisan Status, I did trend analyses to see how they affect the dependent variables. As in the rest of the study, the dependent variables dealt with here are the reasons stated by Senators, in the form of percentages of total statements.

**Date**

One variable that I thought might be an important factor was time. At the beginning of the time period studied, comprehensive climate legislation was more of a vague idea than a concrete fact. However, once the Waxman-Markey bill passed in the House on June 26, 2009, climate legislation was much more definite, had specific provisions for Senators to favor or oppose, and so on. My hypothesis was that in the first few months of the 111th Congress, the issues discussed would be different from the remaining time period. Figure 2 suggests that this hypothesis is somewhat correct:
For almost the entire period studied, the economy dominated the conversation with more than fifty percent of the total reasons stated. However, it did not rise above fifty percent until April of 2009, when the first drafts of the Waxman-Markey bill started being circulated. Before that date, Science and the Environmental reasons played a much bigger role, which makes sense under my original hypothesis. When climate change was more of a vague issue, Senators talked more about the effects of climate change itself and whether it actually exists. When it became more concrete, they talked more about the economic effects of legislation.

Other than that conclusion, the time series does not give us much more useful information. Economic reasons stay mainly between fifty and sixty percent, while the other three stay between ten and thirty percent, with few outliers. This consistency is interesting in itself: even with events like the introduction of two different bills in the Senate, the President’s trip to the Copenhagen climate conference, and others, the Senate is generally talking about the same issues. As the Overview section suggested, Senators are concerned about the impacts of climate change and climate legislation on the economy.
**Favorability – Broad Categories**

The favorability variable is one I will use often in this analysis, because I believe it is very important in determining which issues are important to various groups of Senators. Each statement was coded with a favorability variable; in this section, I look at each statement separately, and compare the favorability variable with the broad categories in the statement. Figure 3 is the sum of all of the statements together:

![Figure 3](image)

The favorability of each statement versus the percentages for each broad category.

There are a number of interesting features within this data. The first is the unequivocally decreasing trend within National Security and Foreign Policy. Statements extremely favorable towards climate legislation refer to foreign policy reasons almost 20% of the time, while statements that are very unfavorable only refer to them around 3% of the time. This trend is interesting because it means there is a correlation between favorability to climate legislation and use of Foreign Policy arguments. One possible conclusion is that Senators who are against action
on climate change avoid talking about the foreign policy and national security consequences of climate legislation and climate change itself because they believe it is less effective in arguing against said legislation.

There is a similar, less pronounced trend in Science and the Environment, implying perhaps that those arguments are also seen as not being effective by those Senators who oppose climate legislation. A third and opposite trend can be seen in Economy, where those strongly in opposition are 22% more likely to mention economic issues than those who favor legislation. Again, this could imply that those in opposition to legislation believe economic arguments are more useful than do the Senators who are in favor.

_Favorability – Specific Reasons_

It is also useful to look at the more specific reasons used by those favorable to or against climate legislation. Figure 4 shows the percentage of statements that include the reasons Scientific Background or Benefits/Harms to the Environment for each favorability level.

![Figure 4](image)

This graph shows the percent of statements at each favorability level, with 1 being extremely in favor of climate legislation and 5 being extremely against.
There is a clear declining trend in Environmental reasons; statements that strongly oppose climate legislation mention the environment less frequently. The more interesting conclusion that can be drawn from this graph, however, is in the science section. Statements that are strongly opposed to climate legislation are almost twice as likely to mention the scientific background than any other favorability level.

Figure 5 shows the percentages for four of the economic reasons: Costs/Benefits of Legislation to Industry, Costs/Benefits of Legislation to Consumers, Green Jobs/Clean Energy Economy, and Policy and/or Regulatory Mechanism.

![Figure 5](image)

This graph shows the relative percentages of statements that include economic reasons for each favorability level.

There are clearly increasing trends for Consumers, Mechanism, and Industry, meaning that statements that oppose climate legislation are more likely to mention the effects of legislation on consumers, the policy or regulatory mechanism, and/or industry. There is also a
clearly decreasing trend in Clean Energy Economy, meaning that statements in favor of climate legislation are more likely to mention green jobs.

The broad domestic and foreign policy categories did not display any strong trends. This is interesting in itself; even on issues where one side would be strongly in favor any the other side strongly against, like EPA regulation, both sides mention the issue around the same number of times.

**Partisan Status**

I also looked at how partisan status affected the arguments used by various Senators. Figure 6 is a summary of the percent of statements made by Democrats and Republicans that include at least one reason from within each of the four broad categories.

![Figure 6](image)

Figure 6 shows the percent of reason within each category for Democrats, in black, and Republicans, in grey.

Interestingly, Democrats and Republicans essentially mentioned the categories Science and the Environment and Economy an equal amount between them. In fact, only in Domestic
Politics do we really see a significant difference in the categories spoken of by each party, with Republicans mentioning those reasons about twice as much as Democrats.

However, perhaps the most interesting conclusion that can be drawn relates to the fact that Democrats and Republicans spoke about Foreign Policy about the same percent of the time. Earlier, I found that statements that oppose climate change are much less likely to use Foreign Policy arguments. However, Republicans are generally against climate legislation and Democrats are generally for it, a fact that seems to present contradictory data. One possible solution is that Republicans who are more in favor of climate change legislation talk about Foreign Policy issues a lot, while Democrats who lean towards opposing climate legislation rarely do. Another explanation is that those who think globally politically also think globally scientifically, and vice versa.

To see why so few differences exist in terms of issue categories between Democrats and Republicans, I looked at the specific reasons more closely. I will not include a graph of these conclusions, because they are generally self evident; for instance, Democrats talk more about green while Republicans talk more about the effects of legislation on consumers. There was one interesting set of numbers that I found: Republicans were almost four times as likely to mention Public Opinion/Representing Constituents as Democrats were.

**Regressions**

The analysis of the effects of some of the demographic variables in the study is a little more complicated than that of the observational variables. In this section, I combine variables and run regressions on them with respect to the dependent variables. Each data point is a summary of a single Senator’s statements, for a maximum of fifty total points. However, some
Senators had very few statements, which meant that their percentages might bias the data. For each regression in this section, I ran it three times: once with all fifty points, once excluding any Senator with five or fewer statements (thirty points), and once excluding any Senator with fewer than ten statements (twenty-three points, less than half of the Senators studied). The advantage of running it with fewer data points is precision; if a Senator only has two statements, they may not present a good summary of his or her views. The disadvantage is that the error bars will be higher, since there are fewer points off of which the data can be based.

**Retiring, Reelection**

Retiring and Reelection were the next two variables I tested for significance. When other independent variables are held constant like Favorability, neither the announcement of retirement nor the year the Senators would be up for reelection change any of the dependent variables in a statistically significant way. This is interesting, because it implies that there is less of a concern for reelection than I originally expected. If there is no significant difference in opinion between those who are definitely no longer running for office and those who are, whether now or in the future, then it seems to be that the desire for reelection in this case does not affect at least what issues are discussed. Of course, this is also a small sample size, since only thirty of the Senators had enough public statements to give us a good picture of their opinions on the issue.

**Region**

One variable I definitely expected to find in differences in was Region. Climate change, many have said, is more of a regional issue than a partisan one.\(^{16}\) The first regressions I ran on my regional variables did imply this; I saw statistically significant differences in different
regions for multiple broad categories. However, when I added Partisan to the regression (holding partisan affiliation constant), only one category, Science and the Environment, had any regional differences. Senators from the New England and Mideast regions—essentially the entire east coast north of and including Maryland—are significantly more likely to talk about Science and Environment arguments than those from the Southeast region—the area bounded by the Ohio River on the north, and the Mississippi River on the west, with Arkansas and Louisiana added.

This is an interesting result. The east coast states are generally represented by Democrats and the southern states by Republicans. When we control by partisan status that means we are comparing the sum of Democratic and Republican opinions separately in the two different regions. Thus, we are essentially comparing moderate Democrats (in the south) to more liberal Democrats (on the east coast), and more conservative Republicans (south) to more moderate ones (east coast). This could imply that the more liberal a Democratic Senator is, the more likely he or she is to use Science and Environment arguments. Similarly, the more conservative a Republican is, the less likely Science and Environment arguments will come up.
Conclusions

Both the Legislative Choice and the Data Analysis sections above have provided a better view of the processes Senators use and reasons they profess towards making voting decisions on climate change legislation. Senators are influenced by two sometimes conflicting strategies; an ideological or internal decision-making process, and a more reelection-driven or external process. In addition, I determined that Kingdon’s model of legislative choice, combined with a supplementary ideological model, adequately describes why Senators feel and vote the way they do on climate legislation.

The most interesting conclusion in the data analysis section is that the economy is incredibly important when considering climate change, as reflected in the number of times Senators mentioned it. I reached further conclusions as well. In general, when presented with actual legislation to criticize or support, Senators will become more concrete in their statements, talking about economic effects more and scientific and environmental arguments less. A Senator who is less likely to vote in favor of climate change legislation is also less likely to make foreign policy arguments, although Republicans and Democrats talk about foreign policy about equally. The more liberal the Democrat, the more likely he or she will use science and environment arguments; the more conservative the Republican, the less likely science and environment arguments are used. Senators who are strongly opposed to climate legislation will mention the science behind climate change almost twice as often as any other favorability level.

How do the Legislative Choice and Data Analysis sections connect? The goal of this paper is to describe why Senators vote the way they do. As discussed in the Data Analysis section on page 24, the data can be useful in accomplishing this goal on two different levels.
First, I could boldly state that the trends found in the data correspond directly to the opinions of the Senators; for example, I could say that since more than 80% of statements mention the economy, Senators almost always vote based on economic impacts. I believe this level of conclusion is too strong. Instead, I state less strongly that in my data, the issues Senators concentrate on reflect the Senators’ opinions, but do not describe it perfectly; the economy is certainly an important factor, but Senators know that actors in their “field of forces” will be expecting them to frequently mention it.

The legislative choice section presents an empirical model of voting decisions on climate change, and I believe it is supported by the data. For example, Republican Senators with a conservative constituency were more likely to question the science on climate change. Their “field of forces” pushed them in one direction, and they went that way. In addition, many of those Senators on the fence supported the ideological choice model. Mark Begich, a Democrat from Alaska, had very strong State level tendencies; he wanted to pass a climate bill to get adaptation funding for his state, but also wanted to include very loose offshore drilling regulations because of the oil revenue that benefits Alaska each year.

The analysis of this data is in no way complete, and I believe the legislative choice model and the data can connect more closely as more demographic examination is done. Additional regressions with more variables and more exploration into the specific reasons will likely provide further insight.

The data collected here can be used again in the future to help policymakers determine what issues are ostensibly important to various Senators. The legislative choice model should serve as a stepping stone for a more complete comprehension of the way Senators decide how to vote on extremely complex issues like climate change. And together, the Legislative Choice and
Data Analysis sections accomplish the goal set forth in this paper: to reach a better understanding of the dissent and division that surround the debate on climate legislation.
Appendix 1 – Research Design

The analysis will focus on fifty Senators, one from each state chosen randomly. I flipped a coin 50 times, and then arranged the states alphabetically. Heads corresponded to the first Senator alphabetically by last name within each state, and tails to the second. The results are as follows:

H – Mark Begich, D – AK
H – Jeff Sessions, R – AL
H – Blanche Lincoln, D – AR
T – John McCain, R – AZ
H – Barbara Boxer, D – CA
H – Michael Bennet, D – CO
T – Joe Lieberman, I – MA
H – Thomas Carper, D – DE
T – Bill Nelson, D – FL
T – Johnny Isakson, R – GA
T – Daniel K. Inouye, D – HI
H – Chuck Grassley, R – IA
H – Mike Crapo, R - ID
T – Richard Durbin, D – IL
H – Evan Bayh, D – IN
T – Pat Roberts, R – KS
T – Mitch McConnell, R – KY
T – David Vitter, R – LA
H – Scott Brown, R – MA
H – Benjamin Cardin, D – MD
T – Olympia Snowe, R – ME
T – Debbie Stabenow, D – MI
T – Amy Klobuchar, D – MN
H – Christopher Bond, R – MO
H – Thad Cochran, R – MS
T – John Tester, D – MT
H – Richard Burr, R – NC
T – Byron Dorgan, D – ND
T – Ben Nelson, D – NE
T – Jeanne Shaheen, D – NH
H – Frank Lautenberg, D – NJ
H – Jeff Bingaman, D – NM
H – John Ensign, R – NV
T – Charles Schumer, D – NY
H – Sherrod Brown, D – OH
H – Tom Coburn, R – OK
I concentrated on the time period from January 3, 2009 to June 1, 2010. The starting date was chosen because that was the first meeting of the 111th Congress, and thus the current crop of Senators. The ending date was chosen because it is as near to the current date as possible, considering the amount of research that needs to be put into the paper.

My sets of documents for analysis came from the Lexis Nexis Academic and Congressional database systems. Within Lexis Nexis Academic, I used the search string “((Sen! or FIRSTNAME) w/3 LASTNAME) w/35 (climate w/3 chang! or global warming)” in the All News (English) category. The form is different for Lexis Nexis Congressional; I searched for the full name in full text AND climate change in full text. I got some extraneous documents; by this I mean documents where the Senator didn’t have a quote, but was just referenced in some way. I removed these from the set of documents that I used. Also, there were some quotations that showed up twice in a selected search. As a rule of thumb, I only coded each distinct quotation once.

I entered in the appropriate values into a Microsoft Excel spreadsheet, and used that sheet to do the data analysis. The categories were coded with the broad number first, then the more
specific number (for instance, a scientific dispute would be coded as 11 and a quote that refers to partisan politics would be coded as 32). The categories were coded in the order they are mentioned in the document. Because of the large amount of data involved, I was only able to look at fifty Senators. Future analysis, in which even more specific conclusions can be drawn, would involve looking at all hundred Senators.

**Coding Sheet**

Statement Category: (Circle one)

1=Press Release  2=Public statement  3=Floor statement  4=Hearing

Prepared or unprepared?

1=Prepared statement  2=Unprepared Statement  3=Unclear

Date:____________________

Senator:___________________  State:________________________

Favorability Scale:

1=Strongly For  2=Weakly For  3=Neutral
4=Weakly Against  5=Strongly Against

Main broad category (circle):

1=Science/Environment  2=Economy  3=Domestic Politics
4=National Security and Foreign Policy

If Science/Environment, circle secondary category:

1=Scientific background  2=Benefits/harms to environment
3=Other

If Economy, circle secondary category:

1=Costs/benefits of legislation to industry  2=Costs/benefits of legislation to consumers
3=Green jobs/clean energy economy   4=Policy and/or regulatory mechanism
5=Costs/benefits of climate change itself   6=America’s competitiveness abroad
7=Other

If Domestic Politics, circle secondary category:

1=Ideology/size of government   2=Partisan politics
3=Public opinion/representing constituents   4=EPA Clean Air Act regulatory authority
5=Other

If National Security and Foreign Policy, circle secondary category:

1=Dependence on foreign resources   2=Destabilization of other countries
3=America’s standing abroad   4=America’s political/regulatory autonomy
5=Other (generic national security concerns)
References


<http://www.climatechange.alaska.gov/>.


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Endnotes


