Global Warming Policy in the United States: A Climate of Confusion

Katie Schmidt

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In December 2009, the UN Framework Convention on Climate Change (UNFCCC) held a conference in Copenhagen, Denmark. Designed as the follow up to the Kyoto Protocol, Copenhagen was to handle international emissions reductions beyond 2012. Since the UNFCCC came into being in 1992, the U.S. has been among the most reluctant countries in the world to enact domestic policy to deal with climate change and participate in international agreements on the issue. Although the U.S. was initially involved in the 1997 Kyoto Protocol, the Senate did not approve the treaty and, under the administration of George W. Bush, the U.S. withdrew from participation in 2001 (Congressional Research Service, 2006). In 2009, the U.S. did take part in negotiations in Copenhagen, with President Barack Obama making an appearance at the delegation and urging an agreement at the eleventh hour. However, the accord that was reached has been criticized for its lack of binding emissions reductions commitments, and the conference itself was plagued by disagreement (See for instance Vidal, Statton, and Goldberg, 2009).

Copenhagen required that developed countries submit voluntary reduction targets by the end of January, and the U.S. did so. In a formal letter to the UNFCC, the U.S. pledged to reduce emissions 17 percent below 2005 levels by 2020 "in conformity with anticipated U.S. energy and climate legislation" (USCAN, 2010). This is equivalent to a reduction of 3.67 percent below 1990 emission levels, or about half of what Kyoto would have required the U.S. to accomplish by 2012. U.S. commitments do not compare particularly favorably to commitments made by other developed regions such as the European Union (EU), which has pledged to reduce emissions 20 percent below 1990 levels (USCAN, 2010).[1]

Some, like Stephen Gardiner (2006), have argued that global climate change is "the perfect moral storm," that the uncertainty associated with it, the way that its effects are spread out over time and space, and the sacrifices that it asks us to make, make it a uniquely challenging threat to deal

[1] The EU's commitments are also legally binding as they are based off of an EU law that came into effect in June 2009 (European Commission, 2010). U.S. commitments are purely voluntary at this point.

with for all of humanity. There is no doubt that dealing with climate change presents some unique and serious challenges, but this does not make addressing the issue impossible, and some parts of the world have done considerably more than the United States. The EU, for example, in addition to the 20 percent cut in emissions mentioned above, offered at Copenhagen to reduce emissions by 30 percent below 1990 levels if other industrialized countries would join the effort (USCAN, 2009). Thus, it cannot be the nature of the problem alone that has limited the U.S. response to climate change, and there must be other factors that explain its failure to implement domestic policies or to participate very meaningfully in international agreements on the issue.

I address the question of why climate change policy progress in the United States has been slow relative to other parts of the world. I track congressional, presidential, media, and public attention to climate change since 1990 to try to establish where the obstacles to enacting comprehensive, legally binding climate change policy lie. I show that the U.S. public is concerned about climate change, knowledgeable about it, and interested in seeing policy change take place. In addition, the scientific consensus that climate change is happening and poses a serious threat has grown since 1990, and U.S. voters elected President Barack Obama in 2008 who promised during his campaign to fight global warming at home and re-engage the international community on the issue. Why then has the U.S. failed in recent years to implement domestic climate change policy and participate in binding international agreements? I argue that the U.S. political structure rewards local-level, specific action on climate change. This has contributed to and exacerbated policymaker confusion and debate about how serious global warming is and what should be done about it, preventing constituency-forming ideas from taking root. This, in turn, has led to fragmented state and local government action on climate change and has made it more difficult to articulate a coherent, national position on the issue.

Background: Climate Change in U.S. and World Affairs Since 1990

Scientific Consensus

In 1990, the Intergovernmental Panel on Climate Change (IPCC) completed its influential first assessment report on climate change. It found that "emissions resulting from human activities are substantially increasing the atmospheric concentrations of greenhouse gases…These increases will enhance the greenhouse effect, resulting on average in an additional warming of the Earth's surface" (IPCC, 1990: 6), and for the first time, climate change became a politically salient topic around the world. Since then, the IPCC has completed three other reports, compiling peer-reviewed literature about climate change from the scientific community (IPCC, 2010).

As time has gone on, the scientific consensus that global warming is happening and is caused by human activities has increased. The 2007 Fourth Assessment Report by the IPCC found: (1)"The understanding of anthropogenic warming and cooling influences on climate has improved since the TAR [Third Assessment Report], leading to *very high confidence* that the global average net effect of human activities since 1750 has been one of warming…" (italics in original, IPCC, 2007: 3)[2]; and (2) "Warming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level" (IPCC, 2007: 5). The report also predicts ocean acidification, sea level rise, loss of snow and ice at the poles, more heat waves, changing precipitation patterns, and increased likelihood of tropical storms (IPCC, 2007: 14-17).

In addition, the 2007 IPCC report found that North America will probably be negatively affected by climate change. For example, the report says that there is a 90 percent chance that, "…hot temperatures and extreme weather are likely to cause increased adverse health impacts from heat-related mortality, pollution, storm-related fatalities and injuries, and infectious disease" (IPCC,

[2] Note: For the IPCC "very high confidence" means that scientists consider there to be a 90 percent chance or greater that the statement is accurate.

2007: 619) in North America. Thus, the scientific consensus suggests that it is in the United States' interest to act on climate change.

International Agreements

Following the first assessment report of the IPCC, over 100 heads of state met at a U.N. conference on the environment in Rio de Janeiro, Brazil in 1992. The participants in this so-called "Earth Summit" signed the UN Convention on Climate Change (UNFCCC), which became the basis for international agreements about global warming (UN, 2010). This laid the groundwork for the Kyoto Protocol of 1997, which was the first international treaty dealing with climate change and was organized by the UNFCCC. The treaty set up binding emissions reduction targets for its signatories and would have required the U.S. to reduce emissions by 7 percent below 1990 levels between 2008 and 2012 (UNFCCC, 2010).

However, before the treaty could be ratified in the United States, the Senate passed the 1997 Byrd-Hagel resolution by a vote of 95 to 0, which said that the U.S. would not participate in any international agreement that mandated developed country emissions reductions without similar commitments by developing countries or that would result in serious harm to the U.S. economy (Paterson, 2009). After this amendment was passed, the Clinton administration did not submit Kyoto to the Senate for ratification and under the Bush administration, the U.S. officially withdrew from participation in 2001 (Congressional Research Service, 2006). As a result, the U.S. does not currently have any policy in place that sets limits on greenhouse gas emissions (Congressional Research Service, 2006). Meanwhile, the EPA reported in 2009 that U.S. emissions had risen 17 percent from 1990 to 2007.

U.S. Domestic Policy

Because the U.S. ratified the UNFCCC in 1992, it is required to submit regular reports to the UNFCCC secretariat about the actions it has taken regarding climate change. In 2007, the U.S. State

Department issued its fourth such report, which covers actions taken through 2006. In the section on policies and measures, the report focuses on the Energy Policy Act of 2005, which requires that the U.S. cut carbon intensity (carbon emissions per unit GDP) by 18 percent by 2012 and offers tax incentives for buying lower emission equipment and building nuclear power plants (U.S. State Dept., 2006). The act has been criticized, however, because no substantial changes were needed to achieve this goal; carbon intensity was projected to be reduced by close to this amount under a business as usual scenario (Paterson, 2009). Also, reducing carbon intensity allows absolute greenhouse gas emissions to rise, and they are predicted to do so by 11 percent between 2002 and 2012 (U.S. State Dept., 2006). And, finally, in order to pass the bill, section 1612 of the Senate bill was excluded, the part that would have expressed the Sense of the Senate "…that human activities are a substantial cause of greenhouse gas accumulation in the atmosphere, causing average temperatures to rise" (Congressional Research Service, 2006: 2). This is significant because it shows that Congress has been reluctant to acknowledge that global warming is happening and that it is human-caused despite the growing scientific consensus that it is.

The State Department report also says that the U.S. contributed $1.4 billion to developing countries to help them cope with climate change between 2001 and 2006. The U.S. is the largest contributor to the UNFCCC, and the report points out that it is a founding member of some international groups that deal with environmental issues such as the Asia-Pacific Partnership on Clean Development and Climate. However, this group, made up of the U.S., China, Australia, Canada, India, Japan, and Korea (Asia Pacific Partnership, 2010) has been criticized for its weak commitments and for supposedly seeking to undermine the Kyoto protocol (Radio Netherlands, 2005).

The 2006 State Department report also says that President Bush established a cabinet-level Committee on Climate Change Science and Technology Integration in 2002. The committee has a

budget of $4.5 billion per year and is charged with conducting climate change technology research and emissions monitoring. This focus on ongoing research rather than emissions reduction is also reflected in Bush's 2001 Climate Change Research Initiative, which was intended to "reduce the most important uncertainties in climate science" (U.S. Climate Change Science Program, 2003). U.S. policy has tended to focus on ongoing research and scientific uncertainty, and policymakers have argued that these are important reasons to avoid serious action on climate change.

Finally, since 1990, the U.S. has had a strong industrial lobby that opposes action on climate change. Formed in 1989, the Global Climate Coalition was a group funded by corporations including the oil, coal, and automobile industries (Revkin, 2009). The coalition's main strategy was to raise doubts about climate science through massive advertising campaigns (Revkin, 2009; Paterson, 2006), but, as the scientific consensus around climate change increased, the group lost credibility, and it was disbanded in 2002. Another example of industry influence is the 2006 advertising campaign by the Competitive Enterprise Institute titled "CO2: They Call it Pollution; We Call it Life" and their 2008 campaign that criticized Al Gore for having a carbon intensive lifestyle while encouraging others to cut back on emissions (Hall, 2008). The Competitive Enterprise Institute is heavily funded by the oil industry, especially ExxonMobil. The *Washington Post* reported in 2007 that Exxon had given the institute about $2 million over seven years (Mufson, 2007). Although industry opposition to climate change policy has been reduced by the disbandment of the Global Climate Coalition, U.S. industry remains a powerful lobby against emissions reduction legislation.

President Obama and Climate Change Policy

When Barack Obama was elected president in November 2008, some predicted, based off of his campaign promises, that he would reinvigorate policy to deal with global climate change in the U.S. and would mend transatlantic relations tarnished by the Iraq war and U.S. resistance to the Kyoto Protocol (See, for instance, the *Telegraph,* 2008). While Obama did support legislation to cut

carbon emissions, and a bill that would have established a cap and trade system and required power plants to get 15 percent of energy from renewable sources passed the House of Representatives in 2009, it did not pass the Senate (Godenberg, 2009; Eilperin, 2009). At the Copenhagen climate talks in December 2009, Obama played a key role in negotiating the eleventh-hour deal that emerged from the conference. However, the Copenhagen Accord was negotiated only between the U.S., China, India, Brazil, and South Africa and then presented to the conference. It also lacks binding emissions targets, an omission that disappointed many European leaders (See, for instance, Broder, 2009). Thus, even though it was predicted that Obama would breathe new life into the United States' domestic and international approach to climate change, the failure of his efforts to do so thus far indicates that significant obstacles to climate change policy still exist in the United States.

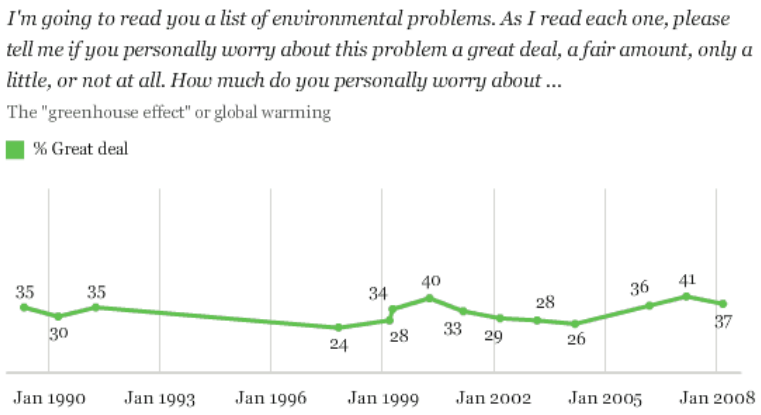
U.S. Awareness of Climate Change

In addition to the scientific consensus and the election of Barack Obama mentioned above, the level of public, media, and policymaker attention to global warming seems to support climate change policy in the U.S. Public awareness of global warming in the U.S. has been high for some time and compares favorably with other parts of the world. Media and congressional attention has increased sharply in the past three years, and presidential attention also appears to be on the rise.

Public Awareness

Recent polls indicate that the U.S. public is highly aware of climate change, is concerned about the issue, and favors U.S. government action to mitigate global warming. In surveys conducted in 2007 and 2008, Gallup found that 97 percent of people in the United States were aware of global climate change. In addition, 63 percent of people in the U.S. were both aware of climate change and considered it a serious personal threat (Pugliese and Ray, 2009). Gallup has also tracked the percentage of U.S. adults who worry about climate change a great deal since 1990, and

found that U.S. public concern about climate change has remained fairly constant over time (Newport, 2008; See Figure 1).

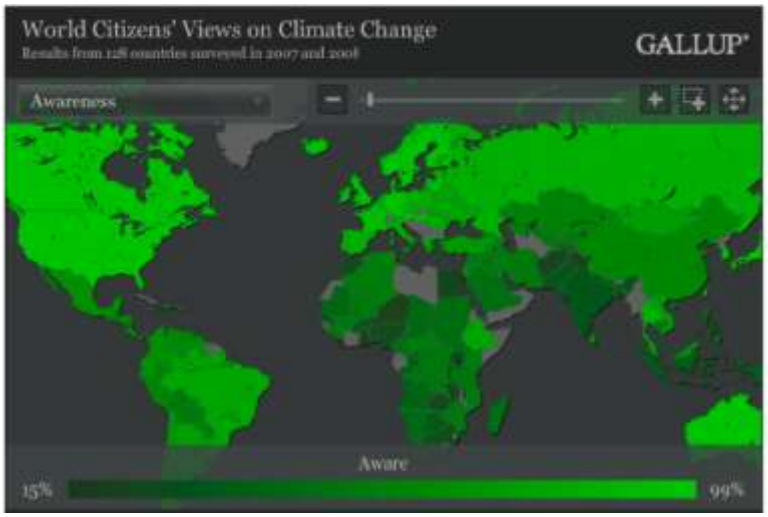


Source: Newport, 2008

Figure 1: U.S. public concern about climate change over time.

In another report, Gallup compared awareness and concern about climate change across continents. This survey found that, "Regionally, people in Europe and the Americas (which includes North, South, and Central America) are the most likely to be aware of climate change" (Pugliese and Ray, 2009: 1). In the Americas, 82 percent of people were aware of climate change, and in Europe 88 percent were aware. Also, in the Americas, 67 percent of adults said that they considered the threat of global warming to them and their families to be very or somewhat serious. This was a greater percentage than in Europe, an area known for its leadership in emissions reductions, where 59 percent of adults said that global warming posed a very or somewhat serious threat. In fact, the percent of people surveyed in the Americas who thought that climate change was threatening was greater than in any of the other regions in the study.[3] It is true that the category "Americas" includes more countries than just the United States, but a map that accompanied the report (included here as Figure 2) shows that the U.S. public is among the most aware in the world.

[3] Besides Americas and Europe, these regions were: World, Middle East/North Africa, Sub-Saharan Africa, and Asia.



Source: Pugliese and Ray, 2009

Figure 2: Public Awareness of Climate Change by Region.

Between December 24, 2009 and January 3, 2010, the Yale Project on Climate Change conducted a survey about public support for climate change policy in the U.S. (Leiserowitz, Maibach and Roser-Renouf, 2010). They found that not only are most Americans aware of climate change, the majority of them support government policy to mitigate the issue. The Yale project reported that 54 percent of U.S. adults believe that Congress should do more or much more to address climate change, and 50 percent believe that the President should do more or much more. Also, 57 percent of the U.S. public says that the U.S. should reduce greenhouse gas emissions regardless of what other countries do, and just seven percent believes that the U.S. should only do so if other industrialized and developing countries reduce their emissions. Thus, congressional resistance to international treaties like Kyoto on the basis that they do not require developing countries to take action seems not to be based in public opinion.

In terms of domestic policy, the Yale Project study found that 71 percent of Americans say that they would support regulating carbon dioxide as a pollutant, a measure that has been proposed, but has failed to gain support in Congress. As international agreements are concerned, the researchers found that 61 percent of the U.S. public either strongly supports or somewhat supports

signing an international treaty that would require the U.S. to cut emissions of carbon dioxide 90 percent by the year 2050 (Leiserowitz, Maibach and Roser-Renouf, 2010: 6).

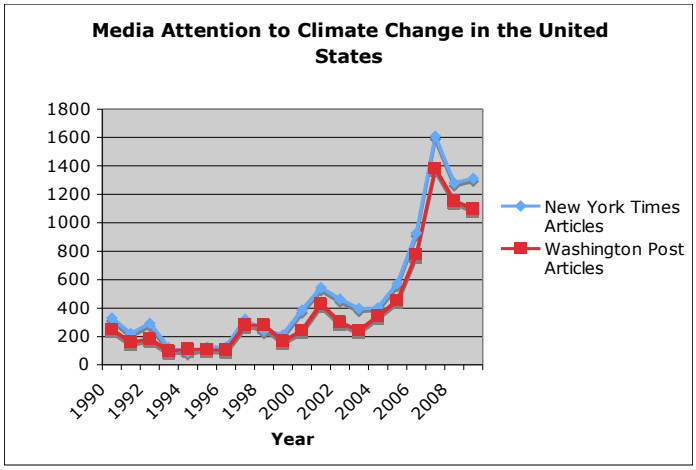
The economy has also been a major concern of policy makers considering climate change policy in the past, as evident in the Byrd-Hagel resolution discussed above. However, surveys show that the majority of the U.S. public does not share these concerns. The 2010 study mentioned above found that 62 percent of Americans said that the U.S. should make a medium or large-scale effort to reduce global warming even if this has moderate to large economic costs (Leiserowitz, Maibach and Roser-Renouf, 2010: 4). Also, in a compilation of public opinion polls, Matthew Nisbet and Teresa Myers (2007) found that in 2005, 71 percent of U.S. adults believed that the U.S. economy would become more competitive as a result of efforts to reduce greenhouse gas emissions (p. 462). Thus, based on public opinion polls, Americans tend to be more supportive of aggressive climate change policy than the actions of their representatives would suggest, and public opinion probably cannot explain U.S. reluctance to deal with global warming through international treaties or domestic policy.

Media Attention

In order to assess U.S. media attention to climate change, I tracked articles in the *New York Times* and the *Washington Post* from 1990 through 2009 using the Lexis Nexis Academic database. I found that since 2006, the number of articles that mention global warming in both of these publications has more than doubled.

For my first search, I looked for articles that mentioned "climate change" or "global warming." I found that between 1990 and 2005, the number of mentions of global warming fluctuated between 100 and 600 per year. There were increases in coverage in years that international conferences on the issue took place (1992 and 1997) and in years when the IPCC released reports (1990, 1992, 1995, 2001, 2007). The coverage of climate change increased dramatically in the 2006 through 2009 period, however. Over these years, the number of mentions per year increased to

between about 700 and 1600 per year up from the previous high numbers of 544 and 573 (in 2001 and 2005, respectively). The results are graphed below in Figure 3.

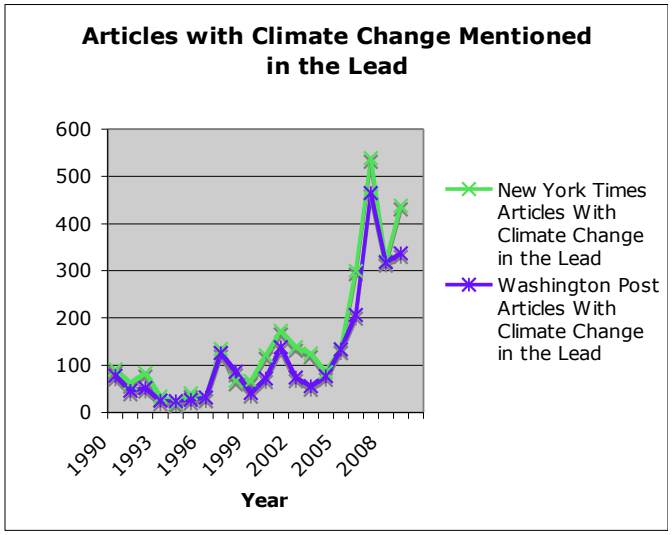


Source: Author

Figure 3: *New York Times* and *Washington Post* articles mentioning climate change.[4]

I also searched for articles that had the term "climate change" or "global warming" in the lead. I did so to determine the number of articles that focused on climate change as a main story element. In this case, like the one above, media attention to climate change increased significantly in the 2006-2009 period. In this case, it peaked in 2007 at 465 articles focused on climate change in the *Washington Post* and 539 in the *New York Times*. After that, coverage declined in 2008, but then increased again in both papers. This decline after 2007 may have been due to coverage of the 2008 presidential election and to the severe financial crisis that also began in 2008. Even given these declines, however, coverage has remained above the previous 2001 high of 173 articles in the *New York Times* and 138 in the *Washington Post*. The results are shown below in Figure 4.

[4] This graph was based off of data from the Lexis Nexis Academic database using the search terms "climate change" OR "global warming on 8 February 2010.



Source: Author

Figure 4: *New York Times* and *Washington Post* stories with climate change in the lead.[5]

In conclusion, the increase in attention to climate change in the *New York Times* and the *Washington Post* in recent years suggests that it is becoming a more salient topic for the news industry in the United States. The lack of corresponding climate change policy in the U.S. to date suggests that, while the media may influence how much policymakers talk about global warming, it does not determine whether they pass legislation on the issue.

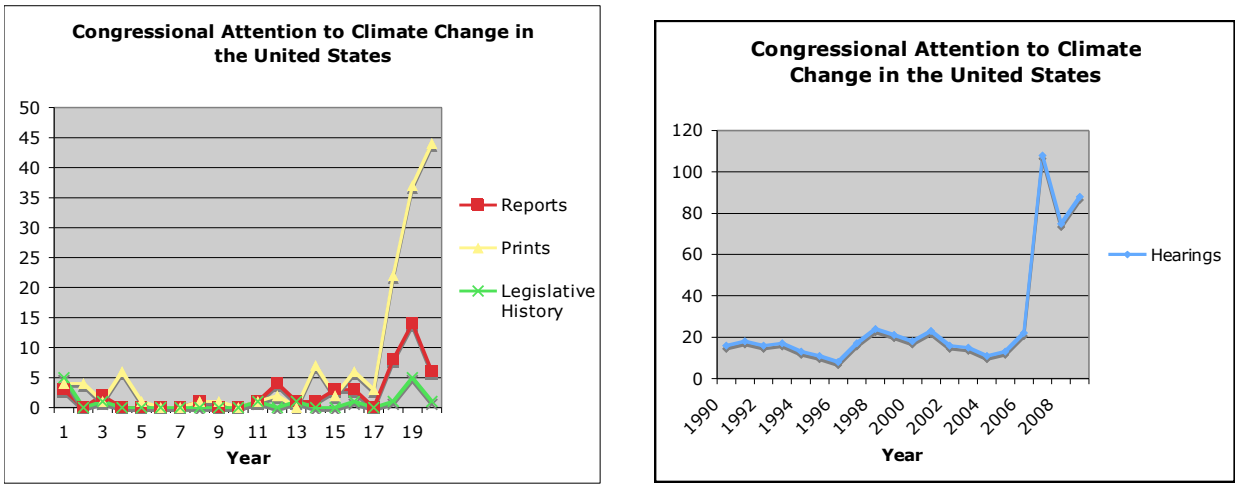
Congressional and Presidential Attention

Like media attention to climate change since 1990, the number of congressional hearings that brought up climate change per year remained fairly constant through 2006 and then more than quadrupled. In order to track congressional attention, I used the database Congressional Universe from Lexis Nexis and searched for "climate change" OR "global warming."[6] I found that the number of hearings per year peaked in 2007 when climate change was brought up in 108 hearings.

[5] This graph was based off of data from the Lexis Nexis Academic database using the search terms LEAD ("climate change" OR "global warming") on 16 February 2010.

[6] Thus, my results include documents that do not have climate change as their main focus. However, I think it is important to include mentions of climate change as well because that too indicates the salience of the issue for members of Congress.

In 2008, the number decreased to 75, but then increased again to 88 in 2009. Congress's legislative history has not kept pace with the increasing number of hearings held, however. In 2007 when the number of hearings increased particularly dramatically, only one law resulted (The Energy Independence and Security Act of 2007) and it did not have climate change as its main focus. The results are graphed below in Figure 5.



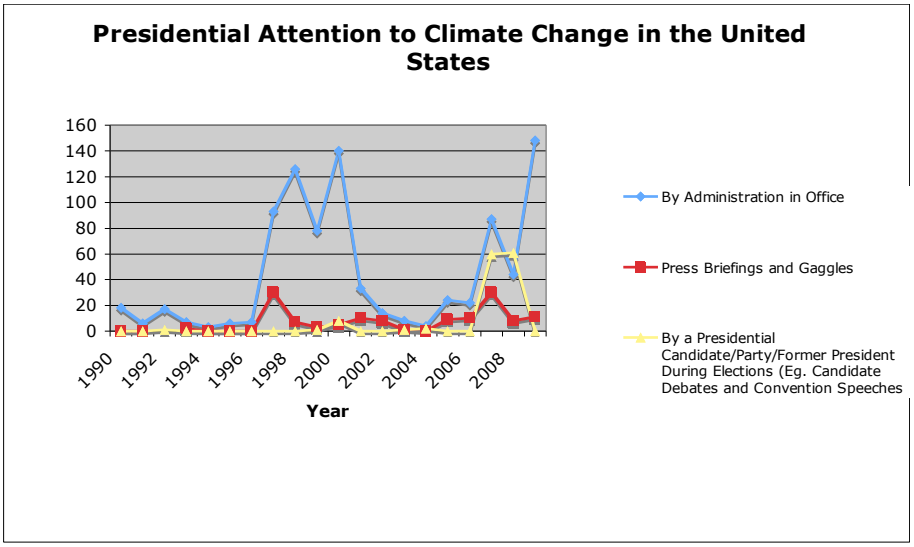
Source: Author

Figure 5: Congressional reports, prints, hearings, and legislative history related to climate change.[7]

Presidential attention to climate change peaked in 2000, dropped off to almost nothing, and then increased to a new high in 2009 as shown in the data graphed in Figure 6. To compile these data, I used the American Presidency Project database (Woolley and Peters, 2010). I separated the data into three categories shown in the graph below because I found that some years the documents that turned up were mainly by presidential candidates or were the result of questions in a press conference and were not produced by the administration in office. Before 1997, the year of the Kyoto Protocol negotiations, presidential attention to climate change was very limited, with fewer than 18 documents mentioning the topic produced per year. After that, climate change was

[7] For this graph, I used the database Congressional Universe and the search terms "climate change" OR "global warming" on 5 February 2010.

mentioned much more often, peaking in 2000 at 148 presidential documents mentioning the issue. Presidential attention to global warming seems to have dropped off in the lead-up to election years ever since 1996, which may mean that advancing an agenda to deal with climate change is not a perceived as very politically pragmatic in the U.S. In addition, these data show that presidential attention to climate change seems to be much higher during democratic administrations. However, because these data only cover 19 years and slightly over two administrations, it is difficult to tell if that is a reliable trend. Finally, like media and congressional attention to climate change, presidential mentions of the term have increased sharply in recent years. Strangely, though, policy to match this growing attention to global warming has not materialized. This must mean that other factors besides attention to global climate change are responsible for preventing U.S. policymakers from acting on the issue.



Source: Author

Figure 6: Presidential and presidential candidate attention to climate change in the U.S.[8]

[8] To compile these data, I did a search using the American Presidency Project database and the search terms "global warming" OR "climate change" on 5 February 2010. Please note: "press briefings, gaggles, and releases" are included in "by administration in office" and "by presidential candidates, parties, or speakers at party conventions" is not.

An Unclear Policy Framework:

Since public opinion and media, congressional and presidential attention to climate change all seem to support U.S. policy, I argue that the failure of the U.S. government to act on climate change is due to ongoing debates about the issue in by U.S. policymakers that have prevented it from being framed as a coherent policy priority. I read a sample of congressional hearings from 2009 and looked at State of the Union addresses since 1997, when the Kyoto negotiations began, to understand how politicians talk about the issue. I found that, in congressional hearings, senators and representatives tend to conceptualize climate change policy in terms of the effects it is likely to have on their state or local level constituencies and to imagine solutions that will benefit these constituencies, rather than focusing on the U.S. as a whole. Moreover, members of Congress remain sharply divided over whether climate change is a serious problem and what should be done about it. In their state of the unions, I found that presidents do not talk about climate change as a problem that needs to be addressed in itself, but as an added bonus of pursuing other objectives of their administration. Presidents tend to tie global warming policy to job creation, U.S. energy security, and a plan to reassert U.S. leadership on the world stage.

In a forthcoming article Peter May and Ashley Jochim argue that problems that span multiple subsystems and involve a wide range of interests are difficult to formulate policy around. Central to doing so, they say, is creating a coherent policy regime with a core set of ideas that various constituents can rally around. These regimes also require interests and institutions that support policy on a given issue, and they are generally formed either in response to crisis or because of more gradual pressure exerted by strong advocacy coalitions.

Based off of this framework, I show that U.S. policymaker disagreement over global warming means that the U.S. lacks a well-defined set of what I call *constituency-forming ideas* around climate change. By constituency-forming ideas, I mean a coherent consensus about the problem and

desirable solutions that policymakers, voters, and environmental organizations can rally around. The lack of a clear, national-level conception of the relative importance of the risks climate change poses and the strategies that we ought to use to mitigate these risks has created serious conflict, confusion, and legislative stalemate. Despite the efforts of some prominent figures like Al Gore, it has kept global warming mitigation from becoming a national priority.

Confusion in Congress

In order to analyze how lawmakers talk about climate change, I read through a sample of congressional hearings about climate change from 2009. There is still serious disagreement among legislators over the seriousness of climate change as a problem and what to do about it, and I identify five major debates about the issue that remain unresolved. Lawmakers disagree about whether climate change policy will create jobs or harm the economy, whether action on the issue should be governed by the precautionary principle, what role developing countries should play in emissions reduction, whether participating in international agreements makes the U.S. a world leader or undermines its national sovereignty, and whether market mechanisms are an effective way to reduce emissions. In addition, the stances that Senators and Representatives took in many cases related to the specific concerns of the states or districts that they represented rather than the concerns of the nation as a whole.

The effects of climate change policy on the economy are still debated in Congress. Some lawmakers such as Massachusetts Senator John Kerry argue that supporting renewable energy will create "green jobs" and ease unemployment. In a November 2009 hearing of the Senate Committee on Finance, Kerry said, "But the fact is, in terms of raw job creation and moving into this sector, if we don't go there, somebody's got to explain to at least this senator where America's great job growth's going to come from and what products we're going to compete in, because the fastest growing sector of—of every economy anywhere in the world today is in the energy alternative and

renewable and efficiency sector" (U.S. Congress, 2009). Although Kerry and others say that climate change policy will improve the U.S. economic situation, others like Kansas Senator Pat Roberts argue that policy to reduce emissions will do the opposite. In the same hearing, Senator Roberts said, "So, my question is, what is a green job? And why should the federal government, with their definition, pickpocket hardworking Kansans with existing energy industry, just to buy—just as I have discussed—if, at the end of the bill, there are little or no environmental benefits?" (U.S. Congress, 2009). This question demonstrates that senators remain divided over the issue. It also shows how that division can be created by the state-level concerns of senators like Roberts.

What to do in the face of scientific uncertainty is also a subject of debate in Congress. While some espouse the precautionary principle, or acting to prevent harm even if we are not entirely sure that the anticipated harm will take place, others say that scientific uncertainty is an important reason not to act on climate change. This kind of debate was evident in a 2009 hearing in the House of Representatives Foreign Affairs Committee. Here, Representative Howard Berman acknowledged the uncertainty surrounding climate change saying that, "At this late state, no consensus has been reached on specific objectives for lowering global greenhouse gas emissions or on how best to help poor countries adapt to climate change." However, he endorsed the precautionary principle by going on to say that, regardless, "If we hope to achieve a meaningful international agreement on climate change, the United States will have to make serious commitments to reduce its emissions and to help developing countries" (U.S. Congress, 2009). In contrast, in the same hearing, Representative Dana Rohrabacher argued that uncertainty was an important reason not to act. He said that, "…we field more and more scientists stepping forward to repudiate this flawed theory, "global warming," which is being used basically to obtain a political agenda through the, basically, manipulation of the scientific establishments in various countries" (U.S. Congress, 2009). Thus, another argument in

Congress seems to be whether, in the face of uncertainty about the issue, climate change merits policy to mitigate possible future harms.

The role other countries should play in an international effort to address climate change is also a subject of debate in Congress. Some members of Congress argue that U.S. efforts will be pointless unless developing countries like India and China agree to emissions cuts and say that the developing world is asking too much of industrialized countries. In a 2009 House Foreign Affairs Committee hearing, Representative Ileana Ros-Lehtinen said, "Also raising concerns is the disproportion in the obligations and the idea being considered for the U.S. and other developed nations to voluntarily impose significant restrictions on ourselves while granting developing countries a pass." She added that she found this approach objectionable in the Copenhagen negotiations (U.S. Congress, 2009). Others, like Representative Eni Faleomavaega, argued in the same hearing that developing countries were being treated unfairly because they would have to bear the consequences of global warming even though they had contributed much less carbon dioxide to the atmosphere than developed countries. He said, "Driving global warming, as the World Development Report 2010 noted, high-income countries, with one-sixth of the world's population, are responsible for nearly two-thirds—and I repeat, Mr. Chairman, two-thirds—of the greenhouse gases currently in the atmosphere yet those limited and developing countries are bearing and will continue to bear the overwhelming majority of the costs" (U.S. Congress, 2009). This disagreement over developed and developing country responsibilities would presumably make it more difficult for the U.S. to articulate a clear negotiating position at international conferences like Copenhagen.

Members of Congress disagree over whether participating in international agreements will establish the U.S. as a world leader or undermine its national sovereignty. For example, in a January 2009 hearing by the Senate Committee on Foreign Relations about the upcoming Copenhagen conference, Senator Kerry said, "This issue will be an early test of our capability to exert thoughtful,

forceful diplomatic and moral leadership on any future challenge that the world faces" (U.S. Congress, 2009). Representative Ros-Lehtinen, on the other hand, has argued that international organizations and agreements will be corrupt and unaccountable. In a November hearing, she said, "A recurring theme is the establishment of a new and unaccountable United Nations-style organization—organizations—acting as global regulatory bodies and armed with far-reaching powers that current U.N. bureaucrats can only dream of…The prospect of a powerful, unaccountable international regulatory bureaucracy leads directly to an even greater concern, namely the undermining of U.S. sovereignty" (U.S. Congress, 2009). Thus, members of Congress disagree over whether the U.S. should be involved in international efforts to reduce greenhouse gas emissions.

Members of Congress also disagree about the effectiveness of market mechanisms to reduce emissions. The United States was the original author of cap and trade programs to regulate sulfur dioxide under the Clean Air Act, and U.S. negotiators insisted that market mechanisms be involved in the Kyoto Protocol (Smith and Mix, 2007). Since then, however, lawmakers have failed to agree over whether Kyoto mechanisms are good policy. In a November 2009 hearing by the Senate Committee on Energy and Natural Resources, Senator Lisa Murkowski questioned the effectiveness of market mechanisms. She said, "There's a group of professors including Steve Rayner of Oxford and Gwen Prinze of the London School of Economics, and they have argued that it is in the world's best interest to abandon the construct behind the Kyoto Protocol and have noted that Kyoto has failed to reduce the emissions of participating nations. And they wrote recently that it was always the wrong tool for the nature of the job and instead have advocated a massive investment in the technological innovation and adaptation" (U.S. Congress, 2009). Kansas Senator Roberts in a Finance Committee hearing was more adamantly opposed to cap and trade. Roberts said, "Cap-and-trade proposals, which try and ration domestic energy production would lead to higher

unemployment rates and a net loss for our state both in jobs and also economic input" (U.S. Congress, 2009). Thus, there is even controversy in Congress over what was once a hallmark of the U.S. position on climate change.

Finally, as demonstrated in some of the debates above, support for climate change policy by senators and representatives was often explained in the context of state and local interests. In a November, 2009 hearing by the House Committee on Foreign Affairs, Representative Watson advocated climate change action on the basis on his constituents' concerns when he said, "…in my own district, California, Los Angeles, we constantly face water shortages that are exacerbated by the reduction in the rain waters over the years. Therefore, Copenhagen represents an opportunity for us to collectively think through and act to ensure that we live in a healthy environment" (U.S. Congress, 2009). In the same hearing, Representative Giffords argued that action should be taken on climate change because his home state of Arizona was suffering from invasive species brought on by warming and increased strain on Colorado River water supplies that would be exacerbated by climate change. And, in a February hearing about renewable energy, senators tended to advocate technological innovation if it benefited their states. Senator Debbie Stabenow of Michigan said, "And I just want to indicate for the record that there are 8,000 different parts in a wind turbine and we can make every single one of those in Michigan. Just for the record. And we also create about 30 percent of the poly silicon that's used as a basic material for solar panels in Saginaw Township, Michigan through Dow Corning and I'd like very much to stop shipping that out of the country to make solar panels. I'd like very much to see it made in Michigan…"(U.S. Congress, 2009). Thus, the side that legislators take in global warming debates and discussions about renewable energy tends to correlate to the interests of the local districts they represent.

These current debates in Congress demonstrate that policymakers in the United States lack a clear set of ideas about what, if anything, should be done about global warming. Legislators are

divided over whether climate change policy will help or hurt the economy, whether they should use the precautionary principle, what other countries' responsibilities ought to be, whether an international agreement would undermine U.S. sovereignty, and whether market mechanisms are a good strategy for emissions reduction. This means that there is no clear set of ideas surrounding climate change in the U.S. of the kind that May and Jochim say is necessary to create a policy regime and rally support around.

Presidential Priorities

Since 1997, when the U.S. President has brought up global climate change in his State of the Union address, it has almost always been in the context of other priorities of his administration. I identified three priorities that climate change tends to be associated with by the president: energy security, job creation, and establishing U.S. leadership in world affairs.

Of the 12 years of State of the Unions that I looked at (1997-2010), climate change was mentioned in seven. Between 1997 and 2000, President Clinton mentioned climate change in every State of the Union for a total of seven mentions. Once Clinton framed global warming policy in terms of economic opportunity[9] and once he framed it in terms of U.S. leadership in the international community.[10] Otherwise, he framed combating climate change as a responsibility to protect the environment and preserve the planet for future generations. Since 2000, however, these references to climate change as an environmental problem have disappeared from State of the Union Addresses.

[9] In his 1998 state of the union, President Clinton said, "Every time we have acted to heal our environment, pessimists have told us it would hurt the economy. Well, today our economy is the strongest in a generation, and our environment is the cleanest in a generation. We have always found a way to clean the environment and grow the economy at the same time. And when it comes to global warming, we'll do it again."

[10] In his 2000 state of the union, Clinton said, "We will reverse the course of climate change and leave a safer, cleaner planet. America will lead the world toward shared peace and prosperity and the far frontiers of science and technology; The greatest environmental challenge of the new century is global warming."

President George W. Bush began this shift away from framing climate change as an environmental threat to posterity. For his first five State of the Union Addresses, President Bush did not mention climate change. He mentioned it once in 2007 and once again in 2008. Both times he framed action on climate change in terms of energy security[11], demonstrating that his administration was concentrating its attention elsewhere. Bush's discussion of climate change in terms of finding alternatives to U.S. reliance on middle eastern oil may have had to do with his administration's focus on fighting terrorism; in his seven State of the Union Addresses, Bush mentioned terrorism 174 times. Thus, when he mentioned it at all, Bush tended to frame climate change in terms of other priorities of his administration.

President Barack Obama also framed climate change in terms of other goals in his 2010 State of the Union. He mentioned it twice in the speech; once he did so in reference to U.S. leadership in international affairs[12] and once in terms of economic growth.[13] Both of these ways of framing climate change correlate with promises from Obama's campaign for office in 2008; creating green jobs and re-engaging with the international community are listed in his campaign's "Blueprint for Change" (Obama for America, 2008:10 & 39). So, for the past ten years, both Obama and Bush have framed climate change in terms of their administrations' other priorities.

This analysis of State of the Union Addresses shows that U.S. presidents tend to define their climate change agendas in terms of other objectives of their administrations. For the past ten years,

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[11] In 2007 he said, "America is on the verge of technological breakthroughs that will enable us to live our lives less dependent on oil. And these technologies will help us be better stewards of the environment, and they will help us to confront the serious challenge of global climate change."
In 2008 he said, "The United States is committed to strengthening our energy security and confronting global climate change. And the best way to meet these goals is for America to continue leading the way toward the development of cleaner and more energy efficient technology."

[12] President Obama said, "We have gone from a bystander to a leader in the fight against climate change." He was probably referring to the role that his administration took in negotiating the Copenhagen Accord.

[13] President Obama said, "Even if you doubt the evidence, providing incentives for energy efficiency and clean energy are the right thing to do for our future, because the nation that leads the clean energy economy will be the nation that leads the global economy. And America must be that nation."

Presidential Framing of Climate Change in State of the Union Addresses

Year	President	Mentions of climate change	Associated with economy?	Associated with energy security?	Associated with U.S. leadership in world affairs?	Mentions of "economy"	Mentions of "jobs"	Mentions of "terrorism" or "terror"
2010	Obama	2	1	0	1	15	26	3
2008	Bush	1	0	1	0	6	6	24
2007	Bush	1	0	1	0	7	3	22
2006	Bush	0	0	0	0	16	7	21
2005	Bush	0	0	0	0	11	6	27
2004	Bush	0	0	0	0	14	13	20
2003	Bush	0	0	0	0	10	3	22
2002	Bush	0	0	0	0	4	13	38
2000	Clinton	2	0	0	1	10	6	4
1999	Clinton	1	0	0	0	10	7	5
1998	Clinton	3	1	0	1	11	13	3
1997	Clinton	1	0	0	0	11	11	3

Source: Author

mitigating climate change has not been mentioned in a State of the Union as important because warming the climate is a bad thing; rather it has consistently been promoted as a way to further other goals of the U.S. president. This demonstrates the lack of coherent ideas about global warming in the U.S.

Some, like Stephen Schneider and Kristin Kuntz-Duriseti (2002) in a chapter in *Climate Change Policy: A Survey*, have argued that associating environmental programs with other national priorities can help advance them on the national agenda and that doing so is one way that policymakers can cope with scientific uncertainty (p.74-75). While this may be an effective way to get climate change onto the national agenda to begin with, in order for a serious policy regime to develop, global warming must eventually acquire priority status in its own right. This is something that this presidential strategy has so far failed to do in the United States. It is virtually impossible to create a policy regime and a constituency around a problem that is only considered in terms of other national objectives and not acknowledged as a priority in itself by government leaders.

Conclusions

Remaining congressional debates over global warming and recent presidential reluctance to consider the issue as a priority in itself show that coherent ideas about climate change have not developed in the United States. Thus, the U.S. lacks the conditions that May and Jochim identify as necessary for policy regimes to develop. This analysis is reinforced by the work of Elizabeth DeSombre, who found that the U.S. tends not to participate in international environmental agreements unless they correspond with domestic policy already in place. In a chapter in *The Global Environment: Institutions, Law, and Policy,* DeSombre argues that domestic regulation serves to rearrange the incentive structure for industry, reducing the chances that the corporate lobby will mobilize against international treaties (Axelrod, Downie and Vigs eds., 2005: 195-196). The U.S. government tends to avoid regulating industry because industry resists regulation, but ultimately the only way to foster industry cooperation is to regulate (DeSombre, 2002: 105). Thus, it is important to have an idea-driven environmental movement that leads to changes in consumer behavior and supports the passage of domestic legislation in order to successfully participate in international negotiations. The U.S. lacks the necessary constituency-forming ideas around climate change.

The Implications of U.S. Political Structure and Local-level Climate Change Action

The United States' political system is decentralized both vertically and horizontally. Federalism separates the U.S. government into local, state, and federal realms while at the national level, three separate branches and a bicameral legislature further distribute government power. In this final section, I demonstrate that U.S. political structure creates an incentive system that exacerbates and encourages an incoherent policy response to climate change and the kind of congressional confusion discussed above. Furthermore, I argue that the federalist structure of the United States tends to lead to local-level action on climate change. This represents some important progress in a country that has otherwise done very little to address the issue, but also runs the risk of

entrenching local-level responses at the expense of a coherent national strategy appropriate for the scope of the problem.

Decentralization, State Interests, and Veto Points

In a 2008 chapter in *Global Warming and Climate Change,* Paul Hamilton argues that the United States has not been as successful as Europe at acting on climate change because of the many veto points in the U.S. system and loose party discipline. Hamilton says that these factors combine to produce less annual legislation in the U.S. than in parliamentary systems (p. 572). Federalism and separation of powers give interest groups that oppose change multiple opportunities to influence the legislative process, and the U.S. Senate has given a powerful voice to states with large industries in energy and coal production (Hamilton, 2008: 575). Loose party discipline is important in that it allows senators and representatives to act in the interest of local constituencies instead of basing their actions on a national platform. This is supported by the tendency in the congressional hearings discussed above of members of Congress to refer to impacts in their home states when debating about climate change policy.

In addition, in the U.S., legislators are largely dependent on private financing for their campaigns, making it difficult for members of Congress to ignore powerful industry lobbies (Hamilton, 2008: 577). This explains the reluctance, discussed by DeSombre above, of government to regulate industry unless there is consumer mobilization in support of environmental policy. This kind of mobilization and regulation around climate change have been absent in the U.S. so far. The ability of industry to influence congressional decision-making will probably be strengthened by the January 2010 Supreme Court decision to overturn campaign finance reform legislation on free speech grounds in (See Liptak, 2010).

Another element of U.S. political structure that is important for climate change policy is the constitutional requirement that a supermajority of the senate and the president ratify international

treaties. DeSombre (2005) argues that this makes ratification much more difficult than in parliamentary systems where the prime minister is also a member of the majority party in the legislature (p. 194). Because different parties often control the presidency and Congress in the U.S., it can be difficult to come to an agreement on treaty ratification. Although DeSombre only talks about this in terms of international treaties, it would make sense for the same obstacles to impede domestic legislation, which may be one reason no greenhouse gas regulations have been enacted in the U.S. to date.

Local Action and its Drawbacks

This decentralized political structure encourages members of Congress to focus on specific, local-level concerns and prevents clear constituency-forming ideas from developing around climate change. It also means that state and local action on global warming has taken precedence over national action in the United States. Here, I provide a brief summary of some of the state and city actions taken on the issue and explain some of the drawbacks of addressing a global issue on a local scale.

While national policy to combat climate change is virtually non-existent in the U.S., there have been some important local successes seeking to reduce greenhouse gas emissions. In 2003, for instance, several New England and Mid-Atlantic states together adopted the Regional Greenhouse Gas Initiative (RGGI). This local cap and trade program was the first plan in the U.S. with mandatory emissions reductions (Linstroth and Bell, 2007: 26).

The state of California has also been a leader in the U.S. In 2002, California passed Assembly Bill 1493, which mandates that the state develop regulations to reduce vehicle emissions. Although this law was stalled in court by the auto industry for several years and the state's proposal for regulating emissions was initially denied by the EPA, new regulations were eventually approved by the EPA in June 2009 (California EPA, 2010). The California EPA predicts that the new rules will

reduce emissions by 22 percent by 2012. In 2006, California's legislature passed the Global Warming Solutions Act (Assembly Bill 32), which requires that the state implement a cap and trade program and eventually reduce emissions to 1990 levels by 2020 (California EPA, 2010).

Finally, cities have also taken the initiative on climate change policy in the U.S. On February 16, 2005, the same day that the Kyoto Protocol came into effect without U.S. participation, Seattle Mayor Greg Nickels launched the U.S. Mayors' Climate Protection Agreement. By June, 141 mayors had signed, committing their communities to "strive to meet or beat the Kyoto Protocol targets," encourage state and federal governments to do the same, and urge Congress to pass legislation to establish a national emissions trading system (Mayors Climate Protection Center, 2010). By July 2007, 600 mayors had signed the agreement (United States Conference of Mayors, 2007).

These accomplishments are important, and this is largely how federalism is intended to work. The authors of *Local Action: The New Paradigm in Climate Change Policy* argue that local action is a good thing because it can happen fast, requires less bureaucratic involvement, is customized to local needs, and allows states to realize benefits like better air quality that go along with reducing greenhouse gas emissions (Linstroth and Bell, 2007: 26). However, there are some serious drawbacks to state level action that these authors have failed to acknowledge.

To begin with, local action has largely happened as a response to localized needs and concerns. The successes of California and the Northeast, for instance can be at least partly explained by existing concerns in those areas. California suffers from serious water shortages, which climate change will exacerbate by reducing snow pack and subsequent runoff in western mountain ranges. California's concern about this issue is illustrated in a recent report commissioned by the state titled "Climate Change and California Water Resources: A Survey and Summary of the Literature" (Kiparsky and Gleick, 2003), and this may help explain the state's interest in mitigation programs. Also, California's cities are plagued by pollution problems. A 2009 report by the American Lung

Association found that California cities make up five of the seven with the most year-round particle pollution in the country and five of the top seven most ozone polluted (p. 16-17). Thus, California's desire to regulate emissions can probably be attributed, at least in part, to local-level concerns.

Likewise, east coast states have tended to support renewable technology and emissions reduction programs probably in part because their largely natural gas and coal-based electricity is the most expensive in the nation. The U.S. Energy Information Administration found that in 2009, consumers paid more per kilowatt-hour for electricity in New England and Mid-Atlantic states than anywhere else in the country (U.S. EIA, 2010).

The problem with local policies that arise in response to local concerns is that they do not necessarily lend themselves particularly well to implementation anywhere else. In fact, the opposite could happen in that states that have not yet acted on climate change could be encouraged to free ride at the expense of neighboring states. Thus, rather than experimenting with local policy to find mitigation strategies that could succeed at the national level, states may be cementing constituencies in support of disparate, regional approaches to climate change at the expense of a cohesive national regime.

Second, even if states can function as effective laboratories for policy experimentation, the climate change problem does not lend itself well to the gradual federal uptake of local ideas. This is because climate change is a somewhat delayed process, and the time that we have to act on the issue before we commit ourselves to serious negative consequences is rapidly running out. Carbon dioxide accumulated in the atmosphere does not immediately lead to planetary warming; rather, the earth system slowly reaches a new equilibrium as less infrared radiation is released back into space. EU policymakers have predicted that warming must be kept to no more than two degrees Celsius if catastrophic events are to be avoided, but if we stopped emitting greenhouse gases today, the earth would continue to warm about another 0.9 degrees Celsius before a new equilibrium is reached

(Battisti, 2010).[14] Thus, climate change requires quick action to prevent the kind of warming that could devastate food supplies, flood low-lying areas, and alter precipitation patterns. Waiting for state policy to trickle up takes too much time to be an effective way of addressing climate change.

Finally, state and local governments do not have access to the same resources as the federal government. Because most must have balanced budgets (National Conference of State Legislatures, 1999), reduced tax revenue from the 2008 economic crisis and ongoing recession have severely strained many states' abilities to spend on public programs. This will probably be a setback for state climate change policy, and illustrates one of the weaknesses of relying on local-level action to eventually create long-term, comprehensive climate change policy.

Conclusion

Since climate change was brought to the attention of policy makers worldwide with the first IPCC report in 1990, the U.S. has been reluctant to mitigate the issue through domestic legislation and has explicitly opposed international emissions reduction agreements. This has happened in a climate of high public concern about and awareness of the problem and has continued even as the media, Congress, and the president have begun to pay more attention to global warming. Over the same period of time, the scientific consensus around climate change has grown, and the U.S. has elected a new president who pledged in his campaign to reduce emissions at home and re-engage the international community in climate change negotiations. At the 2009 Copenhagen Conference, however, it became clear that the U.S. remained a reluctant negotiator, and an attempt to pass domestic climate change legislation before the conference died in Congress.

[14] This number also takes into consideration that cutting off emissions would cut down on the presence of aerosols (largely from burning coal) that increase earth's albedo and have a cooling effect. The effect from just the greenhouse gas concentration in the atmosphere would be about a 0.6 degree C warming.

In this paper, I have argued that U.S. policymakers lack a clear set of constituency-forming ideas about how to define climate change as a problem and what should be done to address it. Congressional debates and presidential speeches demonstrate that serious disagreements about the issue remain, legislators tend to conceptualize the threat of global warming in terms of their home states, and, when he mentions it at all, the president tends to frame climate change in terms of other priorities of his administration. The result has been an unclear policy framework and a lack of consensus over whether climate change policy is a priority in itself or an added benefit of addressing other national problems. The lack of domestic consensus on climate change has made it virtually impossible to participate effectively in international negotiations.

Finally, this domestic confusion is the result, at least in part, of a decentralized political structure that encourages lawmakers to act in the interests of local districts rather than the country as a whole and gives the powerful U.S. industrial lobby ample opportunity to influence the legislative process. U.S. federalism has also encouraged some state and local governments to act on climate change, in some cases quite aggressively. However, this local-level approach runs the risk of institutionalizing U.S. policy incoherence by tailoring climate change policy to specific regional interests.

In the post-Cold War world, U.S. hegemony is no longer taken for granted, and U.S. leadership in world affairs is increasingly coming under scrutiny. Climate change policy is one realm where the United States has failed to lead and has been left behind, debating issues that are already settled in other parts of the world. It remains to be seen whether the U.S. will be able to rally around a climate change policy regime and adapt to a changing world order or if it will fall by the wayside and watch others take its place. Either way, our strategy for adapting to a changing climate will shape the United States' role in future international affairs, and, in a very real way, will transform the world we live in.