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## Climate Change and Institutional Design: Three Potential Design Areas

Climate change has been called the “challenge of our generation” because it poses a threat to people in every country regardless of borders, wealth, or governance choices.<sup>1, 2, 3, 4</sup> Among environmental scholars and theorists, there has been extensive debate about how to deal with climate change and whether our current government arrangements are capable of the task.<sup>5, 6, 7, 8, 9</sup> If scholars at the end of the 20<sup>th</sup> century believed that democracy was a settled question, they likely did not anticipate democracies trying to contend with an international, national, and local crisis as extensive as climate change. Scholars question whether democracy is the best form of government to handle such a “wicked” problem, and some scholars have even suggested that democracy may not be capable of handling climate change at all.<sup>10</sup> Empirical research on the subject suggests that democracies are not dealing with climate change much better than nondemocracies.<sup>11, 12, 13</sup>

Should we abandon our theories about democracy because of its shortcomings in dealing with climate change? The literature suggests that there are aspects of climate change governance that democracies may be better prepared for than nondemocracies, such as committing to international agreements, making political

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<sup>1</sup> United Nations. “Climate Change is the Challenge of Our Generation.” 2017. Retrieved from: <http://newsroom.unfccc.int/climate-action/climate-change-is-the-challenge-of-our-generation/>

<sup>2</sup> World Commission on Environment and Development. “Our Common Future.” Oxford University Press. 1987. ISBN: 978-1-19-282080-8. Viewed as a PDF

<sup>3</sup> Christopher Hobson “Addressing climate change and promoting democracy abroad: compatible agendas?” *Democratization*, (2012) 19:5, 974-992, DOI: 10.1080/13510347.2012.709691

<sup>4</sup> Daniel Ryan. “THE DESIGN OF CLIMATE INSTITUTIONS: CONTRIBUTIONS FOR THE ANALYSIS.” *Ambiente & Sociedade* 19, no. 4 249-258. (Oct, 2016). doi:<http://dx.doi.org.libproxy.library.wmich.edu/101590/1809-4422asocex0005v1942016x>. <http://libproxy.library.wmich.edu/login?url=https://search-proquest-com.libproxy.library.wmich.edu/docview/1862137666?accountid=15099>.

<sup>5</sup> Peter Burnell. “Democracy, democratization and climate change: complex relationships” *Democratization*, (2012) 19:5, 813-842, DOI: 10.1080/13510347.2012.709684

<sup>6</sup> Michèle B Bättig, and Thomas Bernauer. “National Institutions and Global Public Goods: Are Democracies More Cooperative in Climate Change Policy?” *International Organization* 63, no. 2 (2009): 281–308. doi:10.1017/S0020818309090092

<sup>7</sup> Eric Neumayer. “Do Democracies Exhibit Stronger International Environmental Commitment? A Cross-Country Analysis”. *Journal of Peace Research* 39, no. 2 (2002): 139-164. <http://www.jstor.org.libproxy.library.wmich.edu/stable/1555296>

<sup>8</sup> M., A. Gemmer, Wilkes, and L. M. Vaucel, “Governing climate change adaptation in the EU and China: An analysis of formal institutions. *Adv. Clim. Change Res*”, 2(1), (2011): doi: 10.3724/SP.J.1248.2011.00001

<sup>9</sup> Hobson *ibid*.

<sup>10</sup> Jack Reardon. “The Climate Change Challenge and the Failure of Democracy”, *On the Horizon*, Vol. 16 Issue: 3, pp.169-171, (2008) <https://doi-org.libproxy.library.wmich.edu/10.1108/10748120810901477>

<sup>11</sup> Battig and Bernauer *ibid*.

<sup>12</sup> Burnell *ibid*.

<sup>13</sup> Hobson *ibid*.

commitments, and having greater concern for human rights.<sup>14, 15, 16</sup> So instead of abandoning democracy altogether, scholars are turning towards understanding the institutional features of democracies that are equipped to handle climate change and those not equipped to handle climate change which may need to be adjusted.<sup>17, 18, 19, 20</sup> This analysis seeks to review the literature on institutional design and climate change policy in democracies and asks whether there are certain types of institutional arrangements which help democracies deal with climate change. It will focus on three formal institutional arenas frequently recommended for impacting climate change policies: electoral institutions, federalism and local-power sharing structures, and non-majoritarian climate change institutions. Each of these areas will be explored according to three questions. Which specific problems are reforms in these areas meant to address? How have these institutional arrangements been studied thus far? Finally, what might future research look like for climate change policies and institutional design? After reviewing these areas, it is clear that more work is needed to create theories of power sharing that apply to these institutions. Preliminary research has demonstrated that there are relationships between certain electoral arrangements and climate change, but these as well as the federalism and non-majoritarian studies all require increased research.

### **Why Institutions?**

Of all the aspects of democracies that could be relevant to understanding climate change policies, why should we study institutions? The reason institutions are relevant to this policy domain can be traced in part to the precedent of using institutions to study problems of “the commons” and commons resource management. In attempting to understand how to deal with commons resource management outside of states or market actors, The World Commission on Environment and Development and Elinor Ostrom began a line of thought that sought to understand the design principles behind successful outcomes.<sup>21, 22</sup> The World Commission started the discussion of international sustainable development and argued that institutions, including transnational agreements, should be a focal point in dealing with questions of sustainability around the world.<sup>23</sup> Ostrom’s focus on local institutions will be taken up later in this analysis, but endogenous to the discussion is the idea that institutions matter to

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<sup>14</sup> Battig and Bernauer *ibid.*

<sup>15</sup> Neumayer 2002 *ibid.*

<sup>16</sup> Burnell *ibid.*

<sup>17</sup> Burnell *ibid.*

<sup>18</sup> Battig and Bernauer *ibid.*

<sup>19</sup> Ryan *ibid.*

<sup>20</sup> Henry Ergas. “New policies create a new politics: issues of institutional design in climate change policy.” *The Australian Journal of Agricultural and Resource Economics* 54, no. 2: 143-164. (2010) doi: <https://doi.org/10.1111/j.1467-8489.2010.00484.x>

<sup>21</sup> World Commission *ibid.*

<sup>22</sup> Elinor Ostrom. *Governing the Commons*. 1990. Cambridge University Press.

<sup>23</sup> World Commission *ibid.*

questions of governing resources. Following this basic premise, other scholars have continued to evaluate institutional design for environmental politics.<sup>24, 25, 26</sup>

In addition to the purely environmental/climate focus, political scientists have theorized and measured the effects that institutions have on substantive outcomes for democracies and suggest that it is important to focus on institutions to fully understand how political actors behave.<sup>27, 28, 29, 30, 31, 32</sup> Institutional analysis emphasizes the importance of the conditions which shape behavior and so different institutional designs are expected to generate different incentives affecting the goals, interests, and behaviors of actors.<sup>33</sup> Because there are many institutionalist scholars, there are as many different research styles and subjects within the field of new institutionalism, and many different research questions<sup>34</sup>. However, because climate change is a different type of issue than liberal democracy for instance, it requires its own specific objectives to study it.<sup>35, 36</sup> New lines of study such as research on Latin America completed by Daniel Ryan, detail that climate change represents a unique problem for democracies because of its cross-cutting nature: namely the way it impacts social policy, environmental policy, and economic policy.<sup>37</sup> Institutions are important specifically for this topic because they are predicted to have effects on the behavior of countries and are recommended as an area where design can take place to mitigate the problems of climate change.<sup>38</sup>

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<sup>24</sup> Patrick Huntjens, Loui sLebel, Claudia Pahl-Wostl, Jeff Camkin, Roland Schulzee, Nicole Kranzf. "Institutional design propositions for the governance of adaptation to climate change in the water sector" *Global Environmental Change*. Vol. 22 no. 1: 67-81 (2012).

<sup>25</sup> Thomas Dietz, Elinor Ostrom, Paul C. Stern. *The Struggle to Govern the Commons*. *Science* 202:1907-12. (2003). Doi: 10.1126/science.1091015

<sup>26</sup> Ryan *ibid*.

<sup>27</sup> Douglass North. *Institutions, institutional change, and economic performance*. 1990. Cambridge: Cambridge University Press.

<sup>28</sup> Pippa Norris. *Electoral Engineering: Voting Rules and Political Behavior*. 2004. New York: Cambridge University Press.

<sup>29</sup> Jose Antonio Cheibub and Fernando Limongi. "Democratic Institutions and Regime Survival: Parliamentary and Presidential Democracies Reconsidered." *Annual Review of Political Science* 5, 151-179. (2002).

<sup>30</sup> Nancy Bermeo, "The Import of Institutions." *Journal of Democracy* 13:23 (April), 96-110. (2002).

<sup>31</sup> Giandomenico Majone. "Nonmajoritarian Institutions and the Limits of Democratic Governance: A Political Transaction-Cost Approach." *Journal of Institutional and Theoretical Economics (JITE) / Zeitschrift Für Die Gesamte Staatswissenschaft* 157, no. 1 (2001): 57-78. <http://www.jstor.org.libproxy.library.wmich.edu/stable/40752249>.

<sup>32</sup> Arend Lijphart. *Patterns of Democracy* (2012). Yale University Press.

<sup>33</sup> *Ibid*.

<sup>34</sup> Peter Hall and Rosemary Taylor. "Political Science and the Three New Institutionalisms." *Political Studies* 44, 936-57. (1996).

<sup>35</sup> Burnell *ibid*.

<sup>36</sup> Kelly Levin, Benjamin Cashore, Steven Bernstein, and Graeme Auld. "Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change." *Policy Sciences* 45, no. 2 (2012): 123-52. <http://www.jstor.org.libproxy.library.wmich.edu/stable/41486859>.

<sup>37</sup> Ryan *ibid*.

<sup>38</sup> Ryan *ibid*.

The three types of institutions chosen for this analysis are three that are discussed regularly by institutionalists, but especially by scholars who study climate change and its unique problems.<sup>39, 40, 41, 42</sup> An example of one of these problems is that climate change mitigation involves a level of future planning and uncertainty that other policy domains do not, so it comes in direct contrast with the short-term planning of elected officials that often characterizes democracies.<sup>43, 44</sup> As such, some have proposed designing and redesigning institutions to account for the problem of short-term planning specifically as it relates to climate change.<sup>45, 46, 47</sup> The following analysis will discuss institutions related to elections and voting, federalism/local-power sharing institutions, and non-majoritarian institutions, which have all been proposed as ways to deal with specific climate change dilemmas for democracies. Questions of power-dynamics, veto points, and institutional strength and capacity run throughout the institutions discussed in this analysis.

### **Elections, Voting, and Climate Change**

Because of its scope, there is reason to believe that climate change will impact elections and that elections then have a further impact on climate change.<sup>48, 49, 50</sup> Obradovich found that increases in temperatures reduce officeholders' vote shares and that with projected temperature rises, turnover is likely to increase over the next 70 years around the world because of climate change (2017). Higher turnover in elections can result not only in shorter-term policies, but in instability for regimes, especially those in the global south or countries that suffer from issues of institutional capacity and stability<sup>51</sup>. The problems with long-term decision-making are well-known and studied in democracies where electoral frames are already shorter than policy-making frames, but the possibility of a further-extended electoral cycle suggests that climate change presents unique and intimidating problems for democracy, especially when coupled with likely increases in the number of refugees around the

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<sup>39</sup> Ibid.

<sup>40</sup> Dennis F. Thompson. Representing Future Generations: Political Presentism and Democratic Trusteeship. *Critical Review of International Social and Political Philosophy* 13 (1): 17-37. (2010).

<sup>41</sup> Jorg Tremmel. Parliaments and Future Generations: the Four Power Model. In Birnbacher, Dieter, Thorseth, May The Politics of Sustainability: Philosophical Perspectives. Routledge, London. 212-233. (2015).

<sup>42</sup> Nick Obradovich. "Climate Change may Speed Democratic Turnover." *Climatic Change* 140, no. 2 (01, 2017): 135-147. doi:<http://dx.doi.org.libproxy.library.wmich.edu/10.1007/s10584-016-1833-8>. <http://libproxy.library.wmich.edu/login?url=https://search-proquest-com.libproxy.library.wmich.edu/docview/1855024594?accountid=15099>.

<sup>43</sup> Ryan *ibid*.

<sup>44</sup> Thompson *ibid*.

<sup>45</sup> *Ibid*.

<sup>46</sup> Tremmel *ibid*.

<sup>47</sup> Maja Gopel. "Guarding our Future: How to protect future generations. Solutions for a sustainable and desirable future" (1-9). 2011.

<sup>48</sup> Obradovich *ibid*.

<sup>49</sup> Per G.Fredriksson and EricNeumayer. "Democracy and climate change policies: Is history important?" *Ecological Economics* Volume 95, Pages 11-19 (2013). <https://doi.org/10.1016/j.ecolecon.2013.08.002>

<sup>50</sup> Ryan *ibid*.

<sup>51</sup> Obradovich *ibid*.

world, food and water shortages, and natural disasters.<sup>52, 53</sup> This section discusses electoral institutions which are directly related to the problems of climate change and elections. It goes on to suggest future areas for this research to help continue to determine the connections between electoral institutions and climate change.

A common debate among institutional scholars is whether parliamentary or presidential democracies create better outcomes.<sup>54, 55</sup> This has been brought up in the climate change literature, with some mixed theoretical ideas about how both systems should work. Some have proposed that presidential systems might be better because policy is less likely to be overturned in these systems and because they require a larger winning coalition, so less spending would be monopolized by minority contingents that could be taken away from public goods.<sup>56</sup> Still others suggest that parliamentary systems could also have an easier time creating policies in the first place and that they generally create more policies related to public goods.<sup>57</sup> By evaluating environmental policies generally as well as carbon dioxide policies, the evidence points towards presidential systems having a slight edge in implementing these types of policies over time.<sup>58, 59</sup> This suggests that the separation of powers present in presidential systems, the size of the winning coalition, or perhaps some other feature may contribute to the presence of certain types of policies. Building from the potential for presidential systems and climate policy, some have recommended using the presence of a presidential system, and the office of the president itself, to leverage climate change and give it high political relevance.<sup>60</sup> For instance, in Brazil, the Civil House of the Presidency coordinates “The Action Plan for Prevention and Control of Amazonia” (PPCDAm, its Portuguese acronym), and specifically works to assist the President in this sector and keep climate change on the agenda.<sup>61</sup>

While adding new institutional features to existing presidential systems may prove promising, and Brazil has had success with increasing its renewable energy use, for countries without presidential systems, changing structural rules may be extremely difficult.<sup>62</sup> Even if there is evidence that existing presidential systems perform better, there is no evidence that parliamentary systems transforming themselves would be the best or only institutional design change with an impact on climate change. Additionally, presidential and parliamentary questions are not the only ones pursued by those interested in questions of electoral characteristics and climate

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<sup>52</sup> Ibid.

<sup>53</sup> Ryan *ibid.*

<sup>54</sup> Cheibub and Limongi *ibid.*

<sup>55</sup> Lijphart *ibid.*

<sup>56</sup> Thomas Bernauer and Vally Koubi. “Effects of political institutions on air quality”. *Ecological Economics* Vol. 68 no. 5 1355- 1365 (2009) doi: <https://doi.org/10.1016/j.ecolecon.2008.09.003>

<sup>57</sup> Katharina Rietig and Timothy Laing. “Policy Stability in Climate Governance: The case of the United Kingdom.” *Environmental Policy and Governance* Volume 27 no. 6.575-587. (2017). Doi: <https://doi-org.libproxy.library.wmich.edu/10.1002/eet.1762>

<sup>58</sup> Bernauer and Koubi *ibid.*

<sup>59</sup> Rietig and Laing *ibid.*

<sup>60</sup> Ryan *ibid.*

<sup>61</sup> *Ibid.*

<sup>62</sup> The International Trade Association. “Brazil - Renewable Energy” (2017). <https://www.export.gov/article?id=Brazil-Renewable-Energy>

change. Multiple scholars have studied the correlations between the types of parties present and the presence of climate change policies.<sup>63, 64</sup> Left-wing parties tend to do better for environmental outcomes, with the caveat that factors such as the state of economy, where in the government the left-wing parties are located, and whether the party is labor, green, or Christian Democratic have specific impacts on outcomes. Neumayer found evidence that left-wing government in cabinets results in a weak and sometimes positive effect on pollution levels, while left-libertarian parties specifically and left parties in the Parliament result in strongly negative levels of pollution<sup>65</sup>. This finding was further echoed by Bernauer and Koubi who found that the strength of green parties contributes to environmental quality, while labor unions do not have a positive effect.<sup>66</sup> More recently, using panel data, Wen et al. found that left-wing governments prefer environmental quality policies to economic growth policies, unless they are under public pressure for more growth policies: and that Christian Democratic parties can be included with left-wing parties in this instance.<sup>67</sup> If countries with specific types of parties have an advantage for climate change policy, how can countries ensure that they get these types of parties in government?

The answer may lay in electoral systems. The debate between proportional representation (PR) systems and majoritarian systems is as contentious as the one between presidential and parliamentary systems, though there has been less large-n research behind which type of electoral system benefits climate change policies outside of Europe and North America.<sup>68, 69, 70, 71, 72</sup> One theory behind electoral system choice and climate change policies is that PR systems give more opportunities for environmentally-concerned voters to be represented in Parliaments by green parties compared with majoritarian systems which bring voters to the center and requires a larger coalition for climate change policies to take shape.<sup>73, 74</sup> Similarly, if the presence of left governments helps to increase environmental policies, there is evidence that PR systems tend to favor center-left governments

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<sup>63</sup> Eric Neumayer. "Are left-wing party strength and corporatism good for the environment? Evidence from panel analysis of air pollution in OECD countries" *Ecological Economics* Volume 45 no. 2. 203-220. (2003.) Doi: [https://doi.org/10.1016/S0921-8009\(03\)00012-0](https://doi.org/10.1016/S0921-8009(03)00012-0)

<sup>64</sup> Jun Wen, Yu Hao, Gen-Fu Feng, Chun-Ping Chang. "Does government ideology influence environmental performance? Evidence based on a new dataset" *Economic Systems*. Volume 40 no. 2 232-246. (2016).

<sup>65</sup> Neumayer 2003 *ibid*.

<sup>66</sup> Bernauer and Koubi *ibid*.

<sup>67</sup> Wen et al. *ibid*.

<sup>68</sup> Lijphart *ibid*.

<sup>69</sup> Kathryn Harrison, and Lisa McIntosh Sundstrom. "Introduction: The Comparative Politics of Climate Change." *Global Environmental Politics*, vol. 7 no. 4, pp. 1-18. (2007). Project MUSE, [muse.jhu.edu/article/224161](http://muse.jhu.edu/article/224161).

<sup>70</sup> Kathryn Harrison and Lisa McIntosh Sundstrom. *American and Comparative Environmental Policy : Global Commons, Domestic Decisions: the Comparative Politics of Climate Change*, MIT Press, 2014. ProQuest Ebook Central.

<sup>71</sup> TORBEN IVERSEN, and DAVID SOSKICE. "Electoral Institutions and the Politics of Coalitions: Why Some Democracies Redistribute More Than Others." *American Political Science Review* 100, no. 2 (2006): 165–81. doi:10.1017/S0003055406062083.

<sup>72</sup> Phillip Y. Lipsky. "The Electoral Politics of Energy" *Stanford University Conference Paper*. (2015). Doi: <https://web.stanford.edu/~plipsky/lipskyelectoralenergy.pdf>

<sup>73</sup> Harrison and Sundstrom 2007 *ibid*.

<sup>74</sup> Harrison and Sundstrom 2014 *ibid*.

compared to majoritarian systems which favor center-right governments.<sup>75</sup> Building from these theories is the idea that PR systems can diffuse the costs of public goods over the public more easily than in majoritarian systems which face powerful opposition to high energy costs and redistributive policies in general.<sup>76</sup>

To test these theories, scholars are relying mostly on OECD countries where the most data have been available. Harrison and Sundstrom found that in the PR cases they studied, countries implemented stronger international and domestic policies to combat climate change compared with majoritarian cases.<sup>77</sup> They argue that PR is the reason the EU has been able to show consistent support for climate change policies, particularly compared with the United States, Canada, and Australia's lower house which follow the median voter for whom climate change is not as salient. Similarly, Lipsy completed a panel-data analysis of OECD countries as well as a natural experiment of countries which changed their electoral systems within the past 25 years.<sup>78</sup> He found that PR systems were correlated with less carbon dioxide intensity and that in the case of countries that changed their electoral systems, such as Japan and Italy, there were some noticeable differences. Japan's energy conservation policies specifically weakened in correlation with a system change that encouraged more broad, popular political appeal.<sup>79</sup>

While there is some preliminary evidence that presidential systems, PR systems, and green/left parties may benefit climate change policies, this research is far from settled. For instance, do the PR and presidential arguments imply that policies are a function of some sort of strong institution with the ability to override public sentiment about high gas prices, or are they about these electoral design choices themselves? The question of separation and diffusion of powers runs throughout electoral questions and needs to be studied further in relation to climate change. There should be more work done to connect the evidence about parties with climate change policies themselves instead of broader categories of public goods and environmental policies. There also needs to be more done to integrate this work into not just OECD countries, but any number of countries around the world, especially as data becomes more available. Electoral systems have been studied extensively in terms of welfare policies, longevity, and functionality, but the literature on electoral systems still needs better integration into climate change literature and vice versa. There should be more unified, large-n studies which match climate change policies and climate change policy outcomes with electoral variables.

### **Federalism/Local Governance**

Another problem frequently pointed out about climate change is its asymmetrical and cross-cutting nature whereby it affects all aspects of society from the local to the national level (and international levels), but

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<sup>75</sup> Iversen and Soskice *ibid.*

<sup>76</sup> Lipsy *ibid.*

<sup>77</sup> Harrison and Sundstrom 2014 *ibid.*

<sup>78</sup> Lipsy *ibid.*

<sup>79</sup> Lipsy *ibid.*

power is not always evenly dispersed between different levels of government and people.<sup>80</sup> For instance, when the United States Congress chose not to act on climate change and rejected the Kyoto Protocol, there was some attempted recourse against it, but ultimately no other level of government had the ability to undo it because of the way the treaty powers in the constitution are structured. To deal with these problems, power-sharing arrangements such as federalism and strengthening local governments are sometimes recommended; however, there are mixed opinions about how these should work and whether they may complicate the governance of climate change further.<sup>81, 82, 83</sup> This section will focus first on the question of federalism generally and then on local institutions specifically and will recommend some future areas of study for both.

Whether federalism will help or hurt climate change policies around the world is very much an unsettled question. One example which highlights the complexity is a comparison between the United States/Australia and Canada. While these cases are extremely similar in terms of the presence of federalism, in the United States and Australia, federalism has allowed subnational government units to try to implement their own climate change policies, while in Canada, provinces complicate climate policy because provinces try to protect greenhouse gas industries rather than working towards climate change policies.<sup>84</sup> There are several theories about why federalism affects climate change policies differently in different locations. One possibility is that there are different levels of coordination whereby some systems have loose coordination and so end up “competing”, while others have more cohesive coordination.<sup>85</sup> For instance, the EU has stronger authority to coordinate smaller units of government than a country such as Canada, where powerful provincial units have more power to dictate their actions.<sup>86</sup>

The structures of institutions themselves may not be the only feature of federalist systems that creates different results. For instance, public opinion also interacts with the institutions to impact climate change policies.<sup>87</sup> In a place like Germany, public opinion likely helped to create early action on climate change in conjunction with their federalist system, while in Sweden, even despite being a more centralized, unity country, public opinion at the local level made the creation of wind-farms difficult.<sup>88, 89</sup> The environmentalist adage “not in my backyard” appears to affect the potential for climate change policies alongside the type of institutions present. Another reason federalism may work differently for climate change policies in different places is the regional cost

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<sup>80</sup> Ryan *ibid.*

<sup>81</sup> Harrison and Sundstrom 2007 *ibid.*

<sup>82</sup> Harrison and Sundstrom 2014 *ibid.*

<sup>83</sup> Brown *ibid.*

<sup>84</sup> Harrison and Sundstrom 2014 *ibid.*

<sup>85</sup> Brown *ibid.*

<sup>86</sup> Harrison and Sundstrom 2014 *ibid.*

<sup>87</sup> Harrison and Sundstrom 2014 *ibid.*

<sup>88</sup> *Ibid.*

<sup>89</sup> Patrik Söderholm, Kristina Ek, and Maria Pettersson. “Wind power development in Sweden: Global policies and local obstacles” *Renewable and Sustainable Energy Review* Volume 11 no. 3 365-400. (2007). Doi: <https://doi.org/10.1016/j.rser.2005.03.001>

of acting on climate change.<sup>90</sup> Comparisons of economic conditions suggest that the cost of adapting may also impact their willingness to adopt climate change policies. For example, Germany experienced emissions reductions prior to EU emissions cuts, which also likely contributed to their early embrace of climate change policies.<sup>91</sup>

In addition to attempts to understand the connection between conventional federalism which may include regional, provincial, or municipal levels of government and climate change, others have theorized that the important part of the federalism debate is that agency can be given to local people to act in the best interest of their own resource management.<sup>92, 93, 94</sup> With this conceptualization, federalism itself is not the focus per se, though it is part of the equation, but instead it is the ability of local people to create their own institutions. Unsurprisingly, this research draws heavily from Ostrom's *Governing the Commons*, which first suggested that local people can successfully devise their own resource management systems to overcome the "tragedy of the commons" where shared resources are depleted because there is an incentive to overuse them.<sup>95</sup> Since this initial study, others have attempted to build on this theory and on Ostrom's design principles specifically.

Huntjens et al. continued this discussion by analyzing Ostrom's original design principles in the context of three countries (the Netherlands, Australia, and South Africa) and found that the majority of Ostrom's eight principles were still important in these cases related specifically to climate change.<sup>96</sup> They argue that in these cases, specific features of local geography, ecology, economies, and culture mean that while design is key, that design must be focused on localized climate change adaptation and institutions that can learn and adapt themselves.<sup>97</sup> Kehew et al. do not directly pursue a follow-up to Ostrom's design ideas, but similarly are interested in the involvement of local government units in climate change policies within countries.<sup>98</sup> They chose to study South Africa, the Philippines, and Mexico, three "global south" countries where interesting or innovative climate change policies have formed and all three of these cases allowed for funding to be given to local governments for the purposes of climate change initiatives.<sup>99</sup> Their findings demonstrate that there are interesting differences among these cases, such as whether the local governments are encouraged to "mainstream" their climate policies into the federal or higher-level government policies or to create their own unique policies.<sup>100</sup> The question of "mainstreaming" or creating unique policies relates to the idea of loose or cohesive coordination mentioned

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<sup>90</sup> Harrison and Sunstrom 2014 *ibid.*

<sup>91</sup> *Ibid.*

<sup>92</sup> Ostrom *ibid.*

<sup>93</sup> Huntjens et al. *ibid.*

<sup>94</sup> Robert B. Kehew, Mthobeli Kolisa, Christopher Rollo, Alejandro Callejas, Gotelind Alber & Liana Ricci Formulating and implementing climate change laws and policies in the Philippines, Mexico (Chiapas), and South Africa: a local government perspective, *Local Environment*, 18:6, 723-737, (2013). DOI: 10.1080/13549839.2013.818949

<sup>95</sup> Ostrom *ibid.*

<sup>96</sup> Huntjens et al. *ibid.*

<sup>97</sup> *Ibid.*

<sup>98</sup> Kehew et al. *ibid.*

<sup>99</sup> *Ibid.*

<sup>100</sup> *Ibid.*

above, but also allows conceptualization of the coordination from a bottom-up perspective whereby cities may choose to follow or create their own policies regardless of the type of federalism present. A final example of local governance comes from a study by Ingty which examined the application of traditional ecological governance in the Himalayan mountains in India to climate change adaptation.<sup>101</sup> The study found that knowledge from these communities can be useful for different aspects of climate change adaptation and has the capacity to work alongside scientific data.<sup>102</sup> This example highlights that studying climate change institutions may rely heavily on local knowledge when discussing federalism and local governance.

These studies represent only a small fraction of the potential for research on federalism, local governance, and climate change. However, some noticeable similarities stand out about this body of research compared with the last section. Like the electoral literature, there needs to be increased focus on developing countries as well as developed countries, especially in terms of theory-building. Much of the work done on theories of federalism's interaction with climate change have come from OECD countries. Additionally, this field would benefit from more large-n studies and more inventive research designs. For instance, have there been cases where countries have adjusted the amount of power given to provincial or local entities, and how has that affected climate change policy? Scholars may borrow from research designs which look at electoral system changes to incorporate the same types of natural experiments. Since Ostrom's original design, there does not appear to have been as much innovation in the research design for this area as there could be.

### **Non-Majoritarian Institutions**

As mentioned above, climate change presents a problem for governance for long-term decision-making in democracies and is likely to induce specific power imbalances.<sup>103, 104, 105, 106</sup> In addition to questions of power in electoral systems and for different levels of government, another question is whether current configurations of democracies can represent future generations, especially with the expectation that climate change will cause lasting effects far into the future. The question of how to create intergenerational equity is relatively new in the institutions literature, but there is evidence that democracies overweight the views of present generations by focusing on issues such as social security over long-term issues such as the preservation of natural resources.<sup>107, 108,</sup>  
<sup>109</sup> To contend with the question of longer-term governance as well as side-stepping problems of high turnover in elections, some have recommended creating non-majoritarian institutions such as future-oriented environmental

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<sup>101</sup> Tenzing Ingty "High mountain communities and climate change: adaptation, traditional ecological knowledge, and institutions" *Climatic Change* 145: 41. (2017) <https://doi-org.libproxy.library.wmich.edu/10.1007/s10584-017-2080-3>

<sup>102</sup> *ibid*

<sup>103</sup> Ryan *ibid*.

<sup>104</sup> Thompson *ibid*.

<sup>105</sup> Tremmel *ibid*.

<sup>106</sup> Gopel *ibid*.

<sup>107</sup> Tremmel *ibid*.

<sup>108</sup> Thompson *ibid*.

<sup>109</sup> Gopel *ibid*.

counsels adjacent to existing institutions that have a specific focus on climate policies, the protection of future generations, and understand technocratic solutions to climate change governance and management. This section will focus on these types of institutions, limited evidence about them, and how they may be studied in the future.

Non-majoritarian institutions are in some ways more difficult to study and quantify than the other types discussed above because they have only recently been related to commons governance and climate change. However, there are several interesting existing examples of non-majoritarian institutions, which will be discussed in more detail in the following paragraphs.<sup>110</sup> Before discussing how these work, it seems necessary to explain what a non-majoritarian institution is and why it differs from other types of institutional arrangements. At the most basic level non-majoritarian means that the majority of the citizens do not have political decision-making power in that institution.<sup>111</sup> Sweet and Thatcher define them specifically as “those governmental entities that (a) possess and exercise some grant of specialized public authority, separate from that of other institutions, but (b) are neither directly elected by the people, nor directly managed by elected officials.<sup>112</sup>” Instead, decision-making power is delegated to a different apparatus, including institutions such as independent regulatory agencies, specialized courts, standard-setting boards, and central banks. According to theorists of these types of institutions, they may provide an additional avenue for the separation of powers so that power cannot be concentrated in a single government institution.<sup>113</sup> They are also said to provide another avenue for horizontal accountability, whereby parallel institutions keep each other in line rather than higher levels checking lower levels as we see in federalism.<sup>114, 115, 116</sup> In the specific instance of non-majoritarian institutions for climate change, Thompson discusses how the concept of trusteeship serves as an important feature because these institutions would be tasked with being trustees for the future, suggesting a specific type of representation based on future outcomes rather than the present, on which current institutions tend to focus.<sup>117</sup>

Where can we find examples of these institutions? How do they work in practice? The UN reports that examples of specific offices to protect future generations can be found in Hungary, Israel, Canada, Finland, and Wales.<sup>118</sup> Other countries such as the Phillipines, Norway, and Germany have also moved towards the creation of institutions to serve future generations in an environmental capacity. There is some variety in the format of these institutions and the functions/roles they serve. Some are modeled after independent commissions or citizen assemblies. The benefits of commission-style institutions according to Thompson are that they are made up of

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<sup>110</sup> UN Secretary General. “Intergenerational Solidarity and the Needs of Future Generations”. (2013). Doi: [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/68/322&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/68/322&Lang=E)

<sup>111</sup>Alec Stone Sweet and Mark Thatcher. "Theory and Practice of Delegation to Non-Majoritarian Institutions" (2002). Faculty Scholarship Series. Paper 74.[http://digitalcommons.law.yale.edu/fss\\_papers/74](http://digitalcommons.law.yale.edu/fss_papers/74)

<sup>112</sup> Sweet and Thatcher *ibid*.

<sup>113</sup> Tremmel *ibid*.

<sup>114</sup> Tremmel *ibid*.

<sup>115</sup> Majone *ibid*.

<sup>116</sup> Sweet and Thatcher *ibid*.

<sup>117</sup> Thompson *ibid*.

<sup>118</sup> UN Secretary General *ibid*.

people with specific expertise who are still average citizens and so more closely resemble citizens of the future than current politicians.<sup>119</sup> One of the most prominent cases of these institutions was Israel's commission established in 2001.<sup>120</sup> Its task was to review legislation and its effect on future generations using investigatory and advisory powers. It was intended to complete these duties by looking not only at directly environmental legislation, but any type of legislation it found potentially relevant to future generations. The commission had considerable ability to delay legislation it found problematic in a similar fashion as US Senate filibusters.<sup>121</sup> However, it was disbanded in 2007 by the Parliament.

Another commission-style institution can be found in Hungary, which in 2008 created the Parliamentary Commissioner for Future Generations, now absorbed into a broad institution called the Office of the Commissioner for Fundamental Rights.<sup>122, 123</sup> The commissioner's jobs include giving opinions on draft rules of law affecting the environment and future generations, preparing statistics about the rules, initiating a review of the laws, and involvement in preparing international treaties.<sup>124</sup> New Zealand and Finland also have similar institutions, although the committee in Finland has a much more limited role and only deliberates with Parliament upon request. Visible within these different institutions are questions of whether they should have the power to create and/or veto laws.<sup>125</sup> Tremmel argues that giving them these types of powers would require the restructuring of legislatures and dealing with questions of power and checks and balances, but that it is also needed if they are to be able to make a difference for climate change.<sup>126</sup> In the case of a place such as Israel, the commission was viewed as being too powerful and therefore problematic because of its broad scope and legislative-stalling powers. Striking the correct amount of legislative powers is likely to be a place for the future research and design of these institutions.

To deal with a perceived problem of overly-powerful non-majoritarian institutions, some countries have also chosen to situate these institutions within existing bureaucracies and other institutions such as Germany's advisory council, Canada's Auditor General, or the Philippines judiciary which has adopted specific measures for the protection of future generations.<sup>127</sup> Obviously if they are situated within existing legislatures, they may not meet the definition listed above for non-majoritarian institutions not being directly managed by elected officials, but it appears to be a fine line in some of these cases, and one worth discussing. For instance, Canada established the Commissioner of the Environment and Sustainable Development in 1995 and situated it within the Office of the Auditor General so that it can conduct assessments of departments of the Federal Government and oversees

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<sup>119</sup> Thomson *ibid.*

<sup>120</sup> UN Secretary General *ibid.*

<sup>121</sup> *Ibid.*

<sup>122</sup> *Ibid.*

<sup>123</sup> Office of the Commissioner for Fundamental Rights. "About the Office". 2017. <https://www.ajbh.hu/web/ajbh-en/about-the-office>

<sup>124</sup> *Ibid.*

<sup>125</sup> Tremmel *ibid.*

<sup>126</sup> Tremmel *ibid.*

<sup>127</sup> UN Secretary General *ibid.*

the petitions process.<sup>128</sup> Germany chose to use a Parliamentary Advisory Council, which was established in 2009, to provide support in the parliamentary process and make recommendations for planning, including evaluating the sustainability impact assessments.<sup>129, 130</sup> However, the parliamentary rules do not specify whether and to what degree the recommendations made by the Advisory Council must be considered by other parliamentary committees.<sup>131, 132</sup> In this way, it clearly does not have the comparative power that Israel's institution, or even Hungary's have. There could be an argument made that situating these committees within existing institutions may weaken them too much.

What does the existence of these institutions mean for climate change management and institutional design? There have yet to be comparative studies on the outcomes from these institutions. Some scholars view them as having quite a bit of potential, especially when given legislative or judicial review powers<sup>133, 134</sup>, while others see them as being problematic for the types of goals they are meant to achieve and for them being able to maintain any independence rather than being co-opted by the governments in power<sup>135</sup>. There are also concerns that these types of institutions which might benefit from technical backgrounds of their members and insulation from other political institutions, may not have the political leverage or democratic legitimacy to make substantial changes for climate change.<sup>136</sup> In the cases listed above, there is already some indication that politics matters, even for non-majoritarian institutions; namely, the fact that Israel's institution was disbanded after a small number of years, and budget constraints could completely derail an institution such as Hungary's.<sup>137</sup> By design, these institutions cause division and separation of powers, which may be helpful for some countries, but for others such as Germany which already has many veto players, it may cause gridlock, especially if they are given official veto power.<sup>138</sup>

Ultimately, we will not know how these institutions are performing until more research is done beyond describing them and theorizing about them. Non-majoritarian institutions should be studied similarly to the other institutions in this analysis in terms of looking at tangible climate change policy outcomes. Perhaps a reasonable place to start may be comparing these institutions across one region, such as Europe, where they have been popular. Like the other institutions in this analysis though, there cannot be any real indication of how these institutions perform around the world until more large-n analyses are performed. It is also clear that like the other

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<sup>128</sup> Ibid.

<sup>129</sup> Ibid.

<sup>130</sup> Gopel *ibid.*

<sup>131</sup> UN Secretary General *ibid.*

<sup>132</sup> Tremmel *ibid.*

<sup>133</sup> Tremmel *ibid.*

<sup>134</sup> Ryan *ibid.*

<sup>135</sup> Ergas *ibid.*

<sup>136</sup> Ryan *ibid.*

<sup>137</sup> Gopel *ibid.*

<sup>138</sup> Ibid.

institutions mentioned in this analysis, the simple presence of a non-majoritarian institution will likely not matter as much as the carefully considered features of its design.

## Conclusion

Electoral institutions, federalism, and non-majoritarian institutions represent three areas of institutional design that have been discussed as potential remedies to the problems from climate change in democracies. This discussion re-asserts the fact that climate change represents an unparalleled and exceedingly difficult problem for democracies. Reviewing each of these institutions individually demonstrates that they each may contribute specific remedies to the problems of climate change. However, these three institutions do not exist in separate worlds from one another and they all relate to the questions of separation of powers, citizen-engagement, and good governance. Future research should work to examine whether there is a theory that unifies these all collectively or at least further unlocks the connections between them. Reasonable questions may include whether federalism works better in PR systems than majoritarian systems, or whether non-majoritarian institutions are better suited for policy success in presidential systems/parliamentary systems.<sup>139</sup>

After reviewing all these institutions individually, it also seems reasonable to ask whether there is one area that is more promising than the others. As of right now it seems only more research can say for sure. The most cross-national research has been done in relation to electoral institutions and federalism. However, even these areas are not fully settled and could use more global theorizing, and large-n research. As the effects of climate change become more prominent, it will be easier to not only study policy implementation, but also policy outcomes from around the world in terms of all three institutions. Speaking to the potential for institutional design in these areas, it should be noted that there is initial evidence that certain types of institutions (namely PR systems, left-wing parties, presidential systems, and the presence of federalism) may affect the presence of climate change policies. It is also evident that we do not know exactly which features impact the causal mechanisms behind these outcomes and the ways that slight, careful adjustments in existing institutions can impact outcomes. It is likely not feasible for countries to make broad sweeping changes like completely transforming the structure of their Parliament, nor is it probably advisable for such changes to be made without better understanding the exact consequences.

It is also worth noting that while institutions clearly matter for policy, their impacts can vary according to political, social, and cultural contexts in different places.<sup>140</sup> There is a continually growing body of research that suggests that institutions can be designed and can at least help to produce certain outcomes.<sup>141, 142, 143</sup> However, institutions may have different consequences or impacts in different places, especially the types of large-scale

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<sup>139</sup> Rietig et al. *ibid*

<sup>140</sup> Ryan *ibid*.

<sup>141</sup> North *ibid*.

<sup>142</sup> Norris *ibid*.

<sup>143</sup> Ostrom *ibid*.

formal institutional changes discussed in this analysis.<sup>144, 145</sup> As such, it is important to not only study the formal institutions which are easier to quantify and trace, but to also look to informal institutions which complement, coexist with, and counter formal institutions. Future research on institutional design and climate change must find ways to control for and reconcile the additional features of institutions which shape the behaviors of governments.

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<sup>144</sup> Ryan *ibid*.

<sup>145</sup> Bruce Talbot Coram "Second Best Theories and the Implications for Institutional Design" in Robert Goodin (ed.), 1996. *The Theory of Institutional Design* (Cambridge University Press).

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