Constitutional Adjudication in the Age of Climate Change: Navigating Complexity with Humility

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Abstract

This thesis explores the complex role of constitutional law and adjudication in addressing the multifaceted challenges posed by climate change. By examining the doctrinal debates and judicial reasoning in constitutional courts across various jurisdictions, it highlights how climate change—characterized by its polycentricity, temporality, spatiality, and multivalence—complicates traditional constitutional doctrines, including standing, justiciability, remedies, and rights adjudication.

Through a comparative analysis of over 30 constitutional judgments from around 20 jurisdictions, this thesis identifies judicial innovations and challenges in interpreting doctrines in constitutional climate disputes. The legal nature of climate change, it is argued, render climate disputes extraordinarily complex, disrupting familiar doctrines such as standing, causation, remedies, and the separation of powers, across jurisdictions. By confronting courts with long timelines, geographically diffuse harms, and multi-tiered governance structures, climate change compels them to reframe or evolve foundational constitutional principles.

Central to the thesis is the proposal of humility—epistemic, doctrinal, and institutional—as a guiding principle for courts, enabling them to adapt existing doctrines without overextending their institutional role. Epistemic humility encourages an acknowledgment of the limits of judicial knowledge, fostering openness to scientific uncertainty and evolving evidence. Doctrinal humility invites courts to adapt existing frameworks to the novel realities of climate change, while institutional humility underscores the need to balance judicial intervention with respect for the role of the political branches in constitutional governance.

The thesis critiques the narratives of courts as unequivocal champions of climate action, offering a more nuanced perspective on their contributions and constraints. It highlights judicial strategies, such as distinguishing between goals and means of climate action, and emphasizes the need for context-sensitive adjudication that respects constitutional diversity while addressing global challenges. By examining core doctrinal dilemmas—such as the extraterritorial effects of emissions, state duties to protect against future harms, and the allocation of authority in federal systems—this thesis reveals how climate change fosters a legal transition in which courts balance established values with evolving norms. Ultimately, the research advances constitutional scholarship by proposing a principled approach to adjudication, equipping courts to navigate the unprecedented complexities of climate change while upholding constitutional integrity and fostering long-lasting climate governance.

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Kyoto Protocol of 1997 UNTS 2303 p. 162	International
Paris Agreement of 2015 UNTS 3156 p. 79	International
Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and The Caribbean 3398 UNTS (2018)	International
United Nations Framework Convention on Climate Change (UNFCCC) of 1992 UNTS 1771 p. 107	International
Greenhouse Gas Pollution Pricing Act 2018	Canada
The Constitution Acts 1867 to 1982	Canada
Ley 16/2017, de 1 de agosto, del cambio climático	Catalonia (Spain)
Colombian Constitution of 1991	Colombia
Basic Law for the Federal Republic of Germany in the revised version published in the Federal Law Gazette Part III, as last amended by the Act of 19 December 2022 (Federal Law Gazette I p. 2478).	Germany
Bundes-Klimaschutzgesetz (Climate Protection Act) 2019	Germany
Mexican Constitution 1917	Mexico
Ley General del Equilibrio Ecológico y la Protección al Ambiente (General Law of Ecological Balance and Environmental Protection) 1988	Mexico
Ley General de Cambio Climático (Climate Change Act) 2012	Mexico
New Zealand Bill of Rights Act of 1990	New Zealand
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Scotland Act 1998	Scotland (United Kingdom)

Enforcement Decree of the Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis. Presidential Decree No. 32557, Mar. 25, 2022.	South Korea
Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis 2022	South Korea
Climate Change and Energy Transition Law 2021	Spain
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Introduction

At the time of writing this dissertation, climate change looms in the global imaginary as a powerful, petrifying, immeasurable reality. After decades of scientific indications of the physical mechanisms linking anthropogenic greenhouse gas (GHG) emissions to the warming of the climate system,[1] we have reached a point in which such phenomenon is not only scientifically unequivocal, but increasingly visible and palpable for the layperson in the form of natural disasters taking place all around the world.[2] Amidst record-breaking temperatures in North

[1] An historical overview of the scientific developments behind our understanding of climate change was provided by the IPCC in 2007. See: Hervé Le Treut and others, 'Historical Overview of Climate Change Science' in S Solomon and others (eds), *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2007). The latest evidence on the physical science of climate change can be found in Intergovernmental Panel On Climate Change, *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (1st edn, Cambridge University Press 2023).

[2] Examples of recent extreme weather events whose occurrence or intensity has been linked to climate change are captured in the following headlines: 'Devastating Rainfall Hits Spain in yet Another Flood-Related Disaster' (*World Meteorological Organization*, 31 October 2024) <https://wmo.int/media/news/devastating-rainfall-hits-spain-yet-another-flood-related-disaster> accessed 5 November 2024; Ruma Paul, 'Floods Destroy 1.1 Million Tons of Rice in Bangladesh' *Reuters* (20 October 2024) <https://www.reuters.com/world/asia-pacific/floods-destroy-11-mln-tons-rice-bangladesh-2024-10-20/> accessed 5 November 2024; 'Global Warming Worsening Deadly Flooding in Africa, Warn Scientists' (*Al Jazeera*, 23 October 2024) <https://www.aljazeera.com/news/2024/10/23/global-warming-worsened-floods-across-africa-scientists> accessed 5 November 2024; Sam Ezra Fraser-Baxter, 'Typhoon Gaemi's Deadly Winds 50% More Likely Due to Climate Change, Study Finds | Imperial News | Imperial College London' (*Imperial News*, 26 July 2024) <https://www.imperial.ac.uk/news/255133/typhoon-gaemis-deadly-winds-50-more/> accessed 5 November 2024; 'Climate Change, El Niño and Infrastructure Failures behind Massive Floods in Southern Brazil' (*World Weather Attribution*, 6 March 2024) <https://www.worldweatherattribution.org/climate-change-made-the-floods-in-southern-brazil-twice-as-likely/> accessed 5 November 2024; Lauren Rosenthal, Brian K Sullivan, and Christopher Cannon, 'Nowhere in America Is Safe From Climate-Fueled Storms and Fires' *Bloomberg.com* (3 October 2024) <https://www.bloomberg.com/news/features/2024-10-03/helene-reveals-how-us-is-not-prepared-for-billion-dollar-disasters> accessed 5 November 2024.

America, Southern Europe, China, and the globe,[3] the UN Secretary General has recently announced that 'The era of global warming has ended; the era of global boiling has arrived'.[4]

Scientifically, 'climate change' has been defined as 'long-term shifts in temperatures and weather patterns'.[5] Yet, this concise and seemingly cold definition conceals far-reaching implications for the economic, political, and social systems critical for modern human existence. In the last few decades, has facilitated an increasing realisation of such implications, giving rise to a body of literature in social sciences seeking to unpack the meaning of climate change beyond its environmental nature.[6] In the words of Hulme: 'climate change has moved from being predominantly a physical phenomenon to being simultaneously a social phenomenon'.[7]

This dissertation focuses on the implications of climate change for constitutional adjudication around the world. Through the analysis of judgments in constitutional law, it illuminates the novel and distinctive constitutional legal questions posed by climate change, as well as the complexities surrounding their adjudication by constitutional courts. It posits that the

[3] 'July 2023 Sees Multiple Global Temperature Records Broken' *Copernicus* (27 July 2023) <https://climate.copernicus.eu/july-2023-sees-multiple-global-temperature-records-broken> accessed 2 August 2023.

[4] Ajit Niranjan, '"Era of Global Boiling Has Arrived," Says UN Chief as July Set to Be Hottest Month on Record' *The Guardian* (27 July 2023) <https://www.theguardian.com/science/2023/jul/27/scientists-july-world-hottest-month-record-climate-temperatures> accessed 2 August 2023.

[5] United Nations, 'What Is Climate Change?' (*United Nations*) <https://www.un.org/en/climatechange/what-is-climate-change> accessed 2 August 2023.

[6] Among others: Sheila Jasanoff, 'A New Climate for Society' (2010) 27 Theory, Culture & Society 233; Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (University of Chicago Press 2021); Bruno Latour, *Down to Earth: Politics in the New Climatic Regime* (Polity Press 2018); David V Canter (ed), *Social Science Perspectives on Climate Change* (Routledge 2017); ECH Keskitalo, *The Social Aspects of Environmental and Climate Change: Institutional Dynamics Beyond a Linear Model* (Routledge 2022); John S Dryzek, Richard B Norgaard and David Schlosberg, *The Oxford Handbook of Climate Change and Society* (1st edn, Oxford: Oxford University Press 2011); Kari Marie Norgaard, *Living in Denial* (The MIT Press 2011) <http://www.jstor.org/stable/j.ctt5hhfvf> accessed 3 August 2023.

[7] Mike Hulme, *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press 2009) XXV.

legal nature of climate change adds layers of complexity to the adjudication of constitutional climate disputes, often requiring courts to reframe or evolve doctrines of adjudication to address climate-related disputes. In other words, climate change is driving a legal transition in constitutional adjudication.[8]

Furthermore, this thesis argues that the legal transition brought about by climate change calls for humility in the adjudication of constitutional climate disputes. Put briefly, humility instructs courts to engage with the novel realities and legal questions raised by climate change while recognising the limits of their institutional capacity. It encourages courts to reflect on their role in the constitutional governance of climate change and to provide principled yet practical legal frameworks that reconcile the complex legal nature of climate change with constitutional traditions in specific jurisdictions. Humility is thus best described as an attitude of conscientious engagement with the novel legal challenges of climate change, acknowledging the courts' powerful, yet limited, role in dispensing understandings of constitutional frameworks with respect to climate change. Humility does not offer courts a definitive solution for adjudicating specific cases; rather, it fosters accurate self-assessment of their institutional capacity and a deeper awareness of the complex legal nature of climate change.

1. Climate Change in Constitutional Adjudication

[8] L.E. Burgers, *Justitia, the People's Power and Mother Earth: Democratic Legitimacy of Judicial Law-Making in European Private Law Cases on Climate Change.* (Doctoral Thesis Universiteit van Amsterdam 2020) 67 <https://pure.uva.nl/ws/files/52346646/Thesis_complete_.pdf> accessed 15 December 2024; Agnes Hellner and Yaffa Epstein, 'Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases Arctic Oil, Neubauer, and l'Affaire Du Siècle' (2023) 35 Journal of Environmental Law 207, 209.

In recent years, climate change has emerged as a pressing issue in constitutional adjudication.[9] Climate-related disputes have given rise to multiple constitutional legal questions that touch upon foundational principles, frameworks, and institutions of constitutional law: What are states obliged to do to protect their citizens from the negative impacts of climate change?[10] Should responsibility for mitigation and adaptation lie primarily with national or subnational governments?[11] Can a state's lack of climate ambition constitute a violation of its duty to protect its citizens?[12] If so, what actions can courts take in response?[13] Further, who has standing to claim such violations[14]—can individuals, communities, or even foreigners assert their rights when affected by the emissions of a given country?[15] These questions underscore complex challenges

[9] Some climate litigation reports reveal that cases grounded in constitutional arguments are present in around 70% of so-called *government framework cases*, that is to say, cases against governments challenging their overall climate policies. See: Joana Setzer and Catherine Higham, 'Global Trends in Climate Change Litigation: 2023 Snapshot' (2023) 5, 13–16. Additionally, my own research across databases using the criteria described in this chapter reveals around 70 constitutional climate cases from over 30 jurisdictions, around half of which are pending final resolution. The majority of judgments analysed in this dissertation have been decided between 2016 and 2024.

[10] *Sentencia STC4360-2018* [2018] Luis Armando Tolosa Villabona (Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)); *Shrestha v The Office of the Prime Minister & Ors NKP, Part 61, Vol 3* (Supreme Court (Nepal)); *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-HRET* (Supreme Court of Norway).

[11] *STC 87/2019* (Tribunal Constitucional de España (Spanish Constitutional Court)); *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* [2021] CJ Wagner (Supreme Court of Canada); *BvR 1565/21/1, BvR 1566/21/1, BvR 1669/21/1, BvR 1936/21/1, BvR 2574/21/1, BvR 2575/21/1, BvR 2054/21/1, BvR 2055/21/1, BvR 2056/21/1, BvR 2057/21/1, BvR 2058/21/1* [2022] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]).

[12] *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Constitutional Court) 1C_37/2019; *Smith v Attorney General [2022] NZHC 1693* [2022] Grice J; *Misdzi Yikh v Canada, 2020 FC 1059* Madam Justice McVeigh.

[13] Interesting discussions concerning remedies and the role of courts in the face of climate change can be found in, among others: *Juliana v United States, 947 F3d 1159 (9th Cir 2020)*; *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 04/09/2015* (Lahore High Court).

[14] Issues of standing are common in constitutional climate cases. See, for example: *Environnement Jeunesse v Attorney General of Canada 2021 QCCA 1871*; *Recurso de Queja 11/2022* [2022] Segunda Sala (Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)); *G 144-145/2020-13, V 332/2020-13* (Verfassungsgerichtshof (Austrian Constitutional Court)).

[15] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* [2021] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]) [173–81].

that climate change poses for constitutional adjudication, requiring courts to navigate uncharted legal territory while respecting existing constitutional frameworks.

Despite an increasing number of constitutional courts judgments in which climate change lies at the heart of the legal dispute, a systematic account of climate change in constitutional adjudication is still absent in constitutional law scholarship. To date, constitutional law scholars have predominantly engaged with climate change from a theoretical perspective through frameworks such as *environmental constitutionalism*[16] or *global climate constitutionalism.*[17] Additionally, some rights-based climate cases have received abundant scholarly attention in public law scholarship.[18] Cases like *Neubauer,*[19] *Asghar Leghari,*[20] *Urgenda,*[21] *Julianna,*[22] or *Nature and Youth Norway,*[23] have been commented on extensively, both as part of the larger

[16] Ademola Oluborode Jegede, 'Climate Change and Environmental Constitutionalism: A Reflection on Domestic Challenges and Possibilities' in Erin Daly and James R May (eds), *Implementing Environmental Constitutionalism: Current Global Challenges* (Cambridge University Press 2018); Lael K Weis, 'Environmental Constitutionalism: Aspiration or Transformation?' (2018) 16 International Journal of Constitutional Law 836.

[17] Jordi Jaria-Manzano, 'Conclusion: Exploring a Constitution for the Climate' in Jordi Jaria-Manzano and Susana Borràs (eds), *Research Handbook on Global Climate Constitutionalism* (Edward Elgar Publishing Limited 2019).

[18] See, for example: Jocelyn Stacey, 'Climate Disruption in Canadian Constitutional Law: References Re Greenhouse Gas Pollution Pricing Act' (2021) 33 Journal of Environmental Law 711; Jason Maclean, 'Climate Change, Constitutions, and Courts: The Reference Re Greenhouse Gas Pollution Pricing Act and Beyond' (2021) 82 Saskatchewan Law Review 147; Gerhard Van der Schyff, 'The Urgenda Case in the Netherlands on Climate Change and the Problems of Multilevel Constitutionalism' (2020) 6 Constitutional Review 210; Christina Voigt, 'The First Climate Judgment before the Norwegian Supreme Court: Aligning Law with Politics' (2021) 33 Journal of Environmental Law 697; Petra Minnerop, 'The "Advance Interference-Like Effect" of Climate Targets: Fundamental Rights, Intergenerational Equity and the German Federal Constitutional Court' (2022) 34 Journal of Environmental Law 135; Gerd Winter, 'The Intergenerational Effect of Fundamental Rights: A Contribution of the German Federal Constitutional Court to Climate Protection' (2022) 34 Journal of Environmental Law 209; Mary Christina Wood, '"On the Eve of Destruction": Courts Confronting the Climate Emergency' (2022) 97 Indiana law journal 239.

[19] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 15).

[20] *Asghar Leghari v. Pakistan. Case W.P. No. 25501/2015. Order of 04/09/2015* (n 13).

[21] *Stichtig Urgenda v De Staat der Nederlanden* [2015] Rechtbank Den Haag (Hague District Court) ECLI:NL:RBDHA:2015:7196.

[22] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 13).

[23] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 10).

picture of *climate litigation,*[24] or for their implications for specific jurisdictions.[25] But beyond writings on specific cases, constitutional law scholars have not largely engaged with the doctrinal discussions sparked by climate change in constitutional adjudication.

This thesis fills this gap in constitutional scholarship by analysing constitutional climate cases and their implications for constitutional adjudication around the world. By looking at courts' legal reasoning in these cases, I argue that the legal nature of climate change renders the interpretation of constitutional doctrines significantly more challenging. In particular, climate change's temporality,[26] spatiality,[27] multivalence,[28] and polycentricity,[29] introduce layers of complexity to the adjudication of these disputes. For example, its temporality demands judicial consideration of future harms over long timeframes that exceed the traditional temporal setting of constitutional adjudication,[30] while its spatiality confronts courts with multiples scales of

[24] Among others, see: Jacqueline Peel and Hari M Osofsky, 'A Rights Turn in Climate Change Litigation?' (2018) 7 Transnational Environmental Law 37; Jacqueline Peel and Hari M Osofsky, 'Climate Change Litigation' (2020) 16 Annual Review of Law and Social Science 21; Joana Setzer and Lisa C Vanhala, 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance' (2019) 10 WIREs Climate Change e580. More recently César Rodríguez-Garavito (Ed.), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022); Setzer and Higham (n 9); United Nations Environment Programme, 'Global Climate Litigation Report: 2023 Status Review' (2023).

[25] See n 17 above.

[26] Chakrabarty (n 6) 7; Jasanoff (n 6) 242.

[27] Jasanoff (n 6) 237–8.

[28] Joanna Bell and Elizabeth Fisher, 'The Heathrow Case in the Supreme Court: Climate Change Legislation and Administrative Adjudication' (2023) 86 The Modern Law Review 226, 230.

[29] Elizabeth Fisher, Eloise Scotford and Emily Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 The Modern Law Review 173, 175.

[30] Examples of this can be found in cases like *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 10); *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 12); *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 15).

action - global, national, subnational - that challenge the traditionally localised focus of constitutional adjudication.[31]

In this sense, structural features of climate change give rise to doctrinal debates that challenge the suitability of existing doctrines to provide a satisfactory response to the legal questions present in climate cases. This is evidenced by the increasing number of scholarly writings calling for refinements of existing approaches to, among others, justiciability,[32] remedies,[33] standing,[34] in constitutional climate cases across jurisdictions. Climate change thus exerts pressure on the conceptual repertoire of constitutional law,[35] pushing the limits of legal imagination in this space.[36] As stated above, I argue that humility can help constitutional courts navigate the challenges posed by the legal transition driven by climate change while fostering a robust and context-sensitive evolution of doctrines in constitutional adjudication. Humility

[31] Jasanoff (n 6) 238.

[32] Hugh S Wilkins, 'The Justiciability of Climate Change: A Comparison of Us and Canadian Approaches' (2011) 34 Dalhousie law journal 529; Larissa Parker, 'Let Our Living Tree Grow: Beyond Non-Justiciability for the Adjudication of Wicked Problems' (2023) 81 University of Toronto Faculty of Law Review 54; Inura Fernando, 'Litigating Climate Change - of Politics and Political Questions: A Comparative Analysis of Justiciability of Climate Change in the United States and Canada' (2018) 49 VUWLR 315; Camille Cameron and Riley Weyman, 'Recent Youth-Led and Rights-Based Climate Change Litigation in Canada: Reconciling Justiciability, Charter Claims and Procedural Choices' (2022) 34 Journal of Environmental Law 195; Nathalie J Chalifour, Jessica Earle and Laura Macintyre, 'Coming of Age in a Warming World: The Charter's Section 15(1) Equality Guarantee and Youth-Led Climate Litigation' (2021) 17 Journal of Law & Equality 1.

[33] Kent Roach, 'Judicial Remedies for Climate Change' (2021) 17 Journal of Law & Equality 105; Milka Sormunen, 'Rethinking Effective Remedies to the Climate Crisis: A Vulnerability Theory Approach' (2023) 24 Human Rights Review 171.

[34] César Rodríguez-Garavito, 'Litigating the Climate Emergency: The Global Rise of Human Rights–Based Litigation for Climate Action' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 37; Ian R Curry, 'Establishing Climate Change Standing: A New Approach' (2019) 36 Pace Environmental Law Review 297.

[35] The idea of the law's 'conceptual repertoire' is borrowed from J Benjamin Hurlbut, Sheila Jasanoff and Krishanu Saha, 'Constitutionalism at the Nexus of Life and Law' (2020) 45 Science, Technology, & Human Values 979, 985.

[36] An illuminating account of the value of legal imagination in adjudication can be found in Maksymilian Del Mar, *Artefacts of Legal Inquiry: The Value of Imagination in Adjudication* (First edition, Hart Publishing 2020).

ensures that courts engage with the constitutional demands of climate governance while respecting their role within the broader constitutional order.

2. Aim and Method

The aim of this research is threefold. First, it seeks to illuminate the difficulties posed by the legal nature of climate change for constitutional adjudication, exploring how courts incorporate such pressing reality into the established 'law-ways' of constitutional law.[37] This is achieved through a mapping exercise of constitutional climate disputes across jurisdictions. Second, it aims to foster scholarly discussion about the legal implications of climate change for the theory and practice of constitutional adjudication. Hence, this thesis invites constitutional law scholars and practitioners to engage with the multi-faceted problem of climate change and the tensions it creates for foundational constitutional institutions. Third, this research aspires to assist constitutional courts in adjudicating climate-related cases, advocating for judicial humility as a guiding principle in navigating these challenges. By adopting humility, courts can engage thoughtfully with the complexities of climate governance, dispensing constitutional understandings that address the novel realities of climate change while respecting the responsibilities of other branches to implement specific policies. With this approach, the research aims to help courts strike a balance between principled engagement and institutional restraint in tune with the reality of climate change.

[37] What Llewelyn calls 'Law-ways' is 'any behavior or practices distinctively legal in character, flavor, connotation, or effect'. In this case, I use this term to refer broadly to practices surrounding constitutional law scholarship and adjudication. See: KN Llewellyn, 'The Normative, the Legal, and the Law-Jobs: The Problem of Juristic Method' (1940) 49 The Yale Law Journal 1355, 1357.

The methodology of the present research is both doctrinal and comparative, using cases as examples of the constitutional legal questions raised by climate change and of the different legal responses in terms of legal reasoning offered by the judges. The study of the selected cases will illuminate the trends and differences in the way courts adjudicate on climate change across jurisdictions, given their respective legal systems and constitutional frameworks. Thus, the method aspires to produce structured analyses of constitutional climate cases that illuminate the larger picture of the presence of climate change in comparative constitutional adjudication and the need for humility.

In its doctrinal dimension, the research will provide an internal account[38] of the reasoning of constitutional courts in relation to climate change. It seeks to understand constitutional law by looking at 'the way the law understands itself'.[39] In other words, this dissertation sees judgments as sites of engagement of constitutional law with climate change that help illustrate the legal implications of the latter on the former. It focuses on the conceptual structures and doctrines found in the legal reasoning of constitutional courts around climate change, underscoring the legal ideas employed to address the legal questions posed by it. Overall, this research aims to remain faithful to the materials and in particular the reasoning of constitutional courts in the selected judgments.

Nevertheless, this thesis does not aspire to zoom in too deeply on the legal implications of climate change for the interpretation of constitutional frameworks within any specific

[38] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 Deakin Law Review 83, 114; Christopher McCrudden, 'Legal Research and the Social Sciences' (2006) 122 Law Quarterly Review 632, 633.
[39] Joseph Raz, 'Why Interpret?' (1996) 9 Ratio juris 349, 358.

jurisdiction or legal culture. The analysis of each case will only provide as many contextual elements as necessary for understanding the interpretation of constitutional structures in light of climate change. In other words, the analyses of cases here presented will be as detailed as necessary to illuminate the challenges posed by the legal nature of climate change for traditional understandings in constitutional adjudication, but without being excessively meticulous to the point of preventing comparison between judgments from different jurisdictions.

In its comparative dimension, the present research follows an approach of 'concept formation through multiple description', as identified by Hirschl.[40] It aims to sharpen the understanding of the concepts and analytical frameworks necessary to address the legal questions posed by climate change in constitutional adjudication through a study of the various manifestations of such disputes across jurisdictions.[41] This approach is deemed appropriate considering the nature of climate change as a global problem. Both its causes and its impacts are universal. Arguably, the normative and practical challenges it poses across jurisdictions bear a sufficient degree of similarity to allow for comparison. As indicated above, constitutional climate cases revolve around a common set of legal questions concerning state competences and responsibilities, and constitutional rights, in the face of climate change. Therefore, a comparative

[40] Ran Hirschl, *Comparative Matters: The Renaissance of Comparative Constitutional Law* (Oxford University Press 2014) 238.

[41] ibid. Recent examples in comparative constitutional law scholarship following similar methodological approaches can be found in: Yaniv Roznai, *Unconstitutional Constitutional Amendments : The Limits of Amendment Powers* (Oxford University Press 2017); Rosalind Dixon, *Responsive Judicial Review: Democracy and Dysfunction in the Modern Age* (Oxford University Press 2023); Silvia Suteu, *Eternity Clauses in Democratic Constitutionalism* (Oxford University Press 2021).

endeavour is suitable to understand how constitutional courts embedded in different legal cultures deal with constitutional dilemmas that are common to most modern political systems.

Yet, the comparisons conducted in this research do not aim to identify 'successful' cases or doctrinal developments worth exporting across jurisdictions. Instead, it seeks to foster a deeper understanding of the constitutional legal questions surrounding climate change through an approach characterised by humility, emphasizing active engagement with the legal nature of climate change. By adopting humility as a guiding principle, this research emphasizes the importance of context-sensitive approaches that respect the diversity of constitutional traditions while illuminating shared challenges. This perspective not only enriches the understanding of climate-related constitutional disputes but also offers insights that can inform robust and adaptable judicial reasoning across legal systems.

This research, as climate change itself, is not geographically bounded to any specific region or set of countries. This determination arises from a strong commitment to highlight the legal implications of climate change for constitutional adjudication beyond the 'usual suspects' (*Urgenda,*[42] *Asghar Leghari,*[43] and more recently *Neubauer)*[44] that have captured the lion's share of scholarly discussion on climate change in constitutional courts. By encompassing a wide geographical distribution of cases, this research aims to underscore the far-reaching implications of climate change across jurisdictions and constitutional frameworks. Nevertheless, by focusing

[42] *Stichtig Urgenda v De Staat der Nederlanden* (n 21).
[43] *Asghar Leghari v. Pakistan. Case W.P. No. 25501/2015. Order of 04/09/2015* (n 13).
[44] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 15).

on judgments from constitutional courts, it is clear that this research will only encompass cases from constitutional regimes or so-called 'rule-of-law polities'.[45]

The comparative methodology of this research works under the assumption that constitutional structures - e.g., constitutional rights, vertical allocation of power, justiciability, standing, remedies - perform similar roles across jurisdictions. For example, constitutional rights can be used by individuals to challenge state (in)action that interferes with their enjoyment of those rights - at least in the jurisdictions where climate constitutional disputes are brought. This is not to say that every right has the same scope in every jurisdiction (see Chapter 5), but simply that as *rights*, they operate in a similar manner in the constitutional cases under analysis. The reasoning of courts in each case is used to illuminate the legal questions and challenges posed by climate change for the adjudication of climate disputes, in a way that can be useful for courts in other jurisdictions to adjudicate similar disputes. In that sense, this thesis presents an analysis of constitutional climate disputes that sits 'between the universal and the contextual'.[46]

The precise application of constitutional structures in climate disputes will depend on many contextual elements - e.g., constitutional text, precedent, institutional context, or even the arguments of parties. In that sense, the extent to which the analysis presented here will be useful for the exercise of constitutional adjudication in a specific jurisdiction depends heavily on the legal culture of that place. For example, the analysis presented in Chapter 2 will be more relevant for countries with strong federalism than for unitary states. Something similar applies to the

[45] Hirschl (n 40) 235.
[46] A similar approach can be found in Emma Lees and Emilie Gjaldbæk-Sverdrup, 'Fuzzy Universality in Climate Change Litigation' (2024) 13 Transnational Environmental Law 502.

discussion about remedies presented in Chapter 6, as the powers of constitutional courts vary significantly across jurisdictions. As indicated above, this research does not aim to find one-size-fits-all solutions for the adjudication of climate disputes in constitutional adjudication. Instead, it aims to illustrate the challenges posed by the legal nature of climate change for the adjudication of constitutional climate cases in its various manifestations and propose an approach to humility that might help courts navigate these challenges.

The comparative method employed here also assumes that constitutional courts perform certain tasks that are common to the jurisdictions under consideration.[47] They adjudicate cases concerning jurisdictional disputes between national and subnational governments, exert judicial review of legislation, and enforce constitutional rights in disputes between citizens and governments.[48] Naturally, not in every jurisdiction do constitutional courts perform these three roles, but in all the jurisdictions under analysis they perform a combination of those at the very least. Thus, drawing lessons for specific jurisdictions from the analysis here presented requires a deeper understanding of each country's legal system. Unlike climate change, legal solutions for the challenges it poses cannot travel so easily in space. Nevertheless, illuminating the similarities and differences in the treatment of climate change in constitutional adjudication across jurisdictions is in itself a contribution this research aims to make.

The cases analysed in this dissertation are selected using a number of criteria aimed at facilitating the comparison between cases from different jurisdictions and legal systems. Firstly, I

[47] Mark Tushnet, 'The Possibilities of Comparative Constitutional Law' (1999) 108 The Yale law journal 1225, 1238.
[48] Dieter Grimm, *Constitutionalism: Past, Present, and Future* (First edition, Oxford University Press 2016) 201–2.

only consider judgments from constitutional courts. Borrowing Dixon's definition, for the purpose of this research, 'constitutional court' refers to 'a court charged with interpreting and enforcing constitutional norms, whether as a specialized court or general court of appeal'.[49] In other words, I will study judgments that make use of constitutional law to adjudicate a dispute concerning climate change. In this respect, constitutional law is understood as the body of rules and principles constituting the state and its institutions,[50] structuring the powers and limitations of governments at the national and subnational levels - what they can and cannot do -[51] and regulating the relationship between governments and individuals through fundamental rights.[52]

Secondly, judgments must be originally written in, or have an available translation into, Spanish, English, French, or German. The need for this linguistic requirement stems from the nature of my methodology, focused on an internal account of judicial reasoning in climate disputes. Such an internal account is only possible by engaging with the text of the judgments directly and carefully, rather than through secondary sources. Thirdly, the judicial reasoning in the cases selected must discuss climate change directly and expressly. Drawing on Peel & Osofsky,[53] this entails cases where climate change lies at the core of the dispute. In other words, this

[49] Dixon (n 41) 18.
[50] David Feldman, 'The Nature and Significance of "Constitutional" Legislation' (2013) 129 Law Quarterly Review 343, 350; David Feldman, 'Statutory Interpretation and Constitutional Legislation' (2014) 130 Law Quarterly Review 473, 473.
[51] Farrah Ahmed and Adam Perry, 'Constitutional Statutes' (2017) 37 Oxford Journal of Legal Studies 461, 471.
[52] This definition is consistent with contemporary and historical accounts of the meaning and role of constitutional law. See, e.g., Dieter Grimm, *Constitutionalism : Past, Present, and Future* (First edition, Oxford University Press 2016) ch 1; Stephen Gardbaum, 'The Place Of Constitutional Law in the Legal System' in Michel Rosenfeld and András Sajó (eds), *The Oxford Handbook of Comparative Constitutional Law* (Oxford University Press 2012).
[53] Peel and Osofsky, 'Climate Change Litigation' (n 24) 22–3.

research will only study cases in which the reasoning of the court refers explicitly to climate change and revolves around some of the legal questions identified above.

It is worth nothing that the above criteria are naturally open to interpretation and may lead to the inclusion of cases that some might not deem 'constitutional' in a narrow sense. Just to mention one example, I will analyse the judgment of New Zealand's High Court in *Smith v. Attorney General.*[54] In a nutshell, this case concerns a claim brought by a Māori landowner against the Crown, for failing to sufficiently address the impacts of climate change in New Zealand. Among other causes of action, it argues that the State has breached its violations under the New Zealand Bill of Rights Act of 1990. In this respect, it will be analysed as another instance of rights enforcement in relation to climate change. This is notwithstanding the fact that New Zealand lacks a codified written constitution. The selection criteria elaborated above are thus interpreted broadly to include cases from jurisdictions with diverse constitutional frameworks, as long as they shed light on the presence of climate change in constitutional adjudication and are compatible with the definition of constitutional law provided above.

Ultimately, the criteria elaborated above are meant to ensure that the cases studied in this thesis are comparable. This does not mean that the causes of action or legal frameworks are identical, but simply that every case is useful to illuminate the implications of climate change for the way constitutional courts decide around common subjects of adjudication - i.e. vertical allocation of power, justiciability, standing, rights, and remedies. Therefore, the legal doctrines or remedies adopted in a given climate-related constitutional case might not be easily extrapolated

[54] *Smith v Attorney General [2022] NZHC 1693* (n 12).

or borrowed from one jurisdiction to another. But without a doubt, important lessons can be drawn from looking at how courts around the world are imagining climate change in constitutional adjudication.

3. Contribution and Clarifications

In line with the objectives and methodology outlined above, the contribution to be made by this research is threefold. First, it will present a structured analysis of over 30 constitutional judgments on climate change from around 20 jurisdictions -see Table of cases. This means discussing the constitutional decisions found using the criteria described above, offering a body of jurisprudence that may serve as a starting point for future research around climate change in constitutional law scholarship.

Second, by using existing cases to link climate change to a set of themes of constitutional adjudication, this research offers a reflection about the legal implications of climate change for the future evolution of the theory and practice of constitutional adjudication. The insights offered by the study of existing judgments will show that existing standards of adjudication are oftentimes inadequate to respond to the novel legal questions posed by climate change, thus underscoring the need to adjust or upgrade constitutional understandings in line with the challenges posed by a changing environment. This underscores the potential of climate change to not only challenge but also reshape constitutional adjudication, prompting courts to develop more dynamic and context-sensitive approaches that align with the needs of the legal transition identified above.

Third, as stated above, the present research concerns the judicial function and aims to make a contribution that facilitates the task of constitutional courts in adjudicating climate-related disputes. Therefore, the study of constitutional climate disputes is further complemented by a proposal of humility, providing courts with the necessary guidance to engage with the multifaceted challenges of climate change, ensuring that their decisions are principled, context-sensitive, and aligned with their constitutional role.

Before considering the structure of this dissertation, three remarks should be made to further facilitate the reader's understanding of the scope and motivation of this project. First, addressing the challenges posed by climate change for the interpretation of constitutional doctrines does not imply that climate change is an exceptional legal issue. Indeed, while climate change is often referred to as a 'wicked' problem,[55] issues like air pollution[56] and terrorism[57] have also been described in this way. Furthermore, other environmental problems are polycentric, have long temporalities with irreversible impacts, and occur beyond the borders of modern nation-states.[58] Yet, perhaps climate change is unique in its extreme combination of negative characteristics that conspire against its solution, rendering it a 'super wicked' problem.[59] Climate

[55] Jonathan M Gilligan and Michael P Vandenbergh, 'Beyond Wickedness: Managing Complex Systems and Climate Change' (2020) 73 Vanderbilt Law Review 1777; Richard J Lazarus, 'Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future' (2009) 94 Cornell Law Review 1153.
[56] Stephen Holgate and Helen Stokes-Lampard, 'Air Pollution—a Wicked Problem' (2017) 357 BMJ j2814.
[57] Lazarus (n 55) 1160.
[58] Weis (n 16) 852–6; P Cane, 'Are Environmental Harms Special?' (2001) 13 Journal of environmental law 3, 7–9; Chris Hilson, 'It's All about Climate Change, Stupid! Exploring the Relationship between Environmental Law and Climate Law' (2013) 25 Journal of Environmental Law 359.
[59] Lazarus (n 55) 1159–60; Hilson (n 58) 363–4; Kelly Levin and others, 'Overcoming the Tragedy of Super Wicked Problems: Constraining Our Future Selves to Ameliorate Global Climate Change' (2012) 45 Policy Sciences 123, 126–30.

change is also unique in its intensity and ubiquity - both in its impacts and its causes - which explains the number of climate-related constitutional cases taking place around the world.

All of this means that climate change raises a new set of legal questions that demand legal response by courts. As indicated above, this research contends that climate change raises authentic constitutional legal questions that merit a systematic study in comparative constitutional law scholarship. Yet, the challenging novelty of climate change should not lead to the conclusion that climate change requires unprecedented concepts detached from legal traditions and cultures. On the contrary, the legal nature of climate change demands active scholarly engagement to accommodate the legal challenges it poses into the conceptual repertoire of constitutional law and the substructure of law more generally.

This research intends to engage with climate change by unpacking its legal nature and addressing its legal implications for existing understandings in constitutional law. This is a consequence of conceiving climate change beyond the language of 'emergency' or 'crisis'.[60] In my view, climate change is a reality that despite its novelty is here to stay - even beyond the point of climate neutrality or the attainment of the long-term temperature goal of the Paris Agreement. Therefore, this new endurable reality of ecological balance needs to be incorporated into the conceptual structure and practice of constitutional law. Paraphrasing Sales LJ, I am interested in the way constitutional courts, when adjudicating climate change, 'seek to knit it into the fabric of the law'.[61] Such long-lasting incorporation and its implications, in what relates to constitutional

[60] For example: Rodríguez-Garavito (Ed.) (n 24); Jocelyn Stacey, 'The Public Law Paradoxes of Climate Emergency Declarations' (2022) 11 TEL 291.
[61] Rt Hon Lord Justice Sales, 'Modern Statutory Interpretation' (2017) 38 Statute law review 125, 128.

adjudication, is the focus of this thesis. In sum, this thesis contends that climate change requires not unprecedented legal concepts but active engagement to adapt and integrate its challenges into the existing conceptual frameworks of constitutional law.

Second, concentrating my research on adjudication does not imply that (constitutional) courts hold the 'magic wand' capable of casting the spell that will bring about a sustainable future. Far from that, this research simply posits that courts play a vital but humble role in the governance of climate change because of both their institutional position vis-à-vis the executive and the legislature, as well as the role of constitutional law as 'the highest expression of legal ideas in any legal order, providing the clearest manifestation and evidence of a social order's values and guiding principles'.[62]

This humble role is not about dictating specific policy solutions but about ensuring that constitutional principles provide a stable foundation for addressing the complex legal questions posed by climate change. By interpreting and applying constitutional frameworks, courts can clarify the scope of state obligations, protect fundamental rights, and foster accountability in climate governance.[63] Their judgments serve not only to resolve disputes but also to articulate societal values and guide the evolution of legal norms in the face of unprecedented environmental challenges. In this way, constitutional courts contribute to a broader governance effort, reinforcing the rule of law while respecting the democratic processes that drive substantive climate action.

[62] Louis J Kotzé, *Global Environmental Constitutionalism in the Anthropocene* (Hart Publishing 2016) 9.
[63] Elizabeth Fisher, 'Telling Meaningful Stories About Climate Change and Public Law. Journal of Environmental Law (Forthcoming).' 4–6.

Therefore, this research will not only discuss the role of courts in terms of the outcomes of specific cases or the remedies they can order to redress climate change under a model of corrective justice.[64] It will also reflect on the importance of expository justice in the adjudication of climate change, a model through which 'the judiciary advises us of the meaning of our fundamental values at particular points in our social evolution'.[65] That is to say, this thesis contends that constitutional courts can facilitate a stable legal transition[66] towards low carbon futures by dispensing understandings of constitutional frameworks with respect to the complex reality of climate change.

Third, this research takes distance from existing accounts of the role of courts in climate change under the idea of 'strategic climate litigation'. This branch of scholarship typically focuses on 'the use of litigation as a strategy by activists seeking to raise ambition on climate issues'.[67] Instead of 'litigation' I use 'adjudication', underscoring that I study constitutional judgments from the perspective of legal reasoning and the role of constitutional law in governing climate change. This research does not follow an external instrumental understanding of courts to pursue climate action. There is an important role for scholarly endeavours exploring the potential of courts to tackle climate change in its different manifestations but that is not the starting point of the present thesis. For that reason, the study of the cases focuses exclusively on the courts' written judgments, leaving aside the arguments or broader strategy of the parties in the case.

[64] Ernest J Weinrib, *Corrective Justice* (Oxford University Press 2012) 87.
[65] Girardeau A Spann, 'Expository Justice' (1983) 131 University of Pennsylvania Law Review 585, 586.
[66] Laura Burgers, 'Should Judges Make Climate Change Law?' (2020) 9 Transnational Environmental Law 55, 71.
[67] Joana Setzer and Catherine Higham, 'Global Trends in Climate Change Litigation: 2021 Snapshot' (2021) 8.

4. Structure

This dissertation is structured as follows. Chapter 1 ('The Legal Nature of Climate Change and the Need for Humility in Constitutional Climate Adjudication') addresses the features of the legal nature of climate change and illuminates the need for humility in the adjudication of such disputes. It explores dimensions of temporality, spatiality, multivalence and polycentricity, that are relevant to understand climate change from a constitutional perspective. Furthermore, it considers the way in which the physical reality and social significance of climate change gives rise to legal disputes that fit awkwardly[68] within existing legal frameworks, as well as its significance for constitutional adjudication. Finally, this chapter will reflect on the importance of three dimensions of humility - epistemic, doctrinal, institutional - for courts to navigate the challenges posed by climate change.

Chapter 2-6 provide a comparative overview of constitutional judgments. They encompass the analysis of the materials of this research, that is so say, the selection of judgments from constitutional courts around climate change. To better illustrate the constitutional legal disputes climate change gives rise to, this thesis aggregates the analysis of the judgments into five chapters corresponding to different themes of constitutional law that are prevalent in those cases. The five chapters share a common methodology, consisting of exploring the legal questions present in the judgments and grouping up the different methodologies employed, and responses provided by, the courts in the selected cases.

[68] Fisher, Scotford and Barritt (n 29) 174.

Chapter 2 ('Vertical Allocation of Power around Climate Governance') focuses on the constitutional articulation of national and subnational governments to address climate change. It discusses legal questions concerning the scope of authority of subnational governments to pursue climate action vis-à-vis the role of national governments to tackle climate change both domestically and internationally. In doing so, it highlights competing interests between the need to address climate impacts taking place locally and the unbounded nature of climate change that requires national and global governance for its effectiveness. Chapter 3 ('Justiciability and the Boundaries of Constitutional Adjudication in Climate Disputes') addresses legal questions related to understandings of the justiciability of climate change in constitutional adjudication. This chapter underscores tensions between notions of justiciability and the politically laden nature of climate change. Furthermore, the chapter suggests that concerns about the justiciability of climate cases relate to the appropriateness of climate-related claims for constitutional adjudication, as well as the availability of remedies to redress climate-relate harms.

Chapter 4 ('Standing in Constitutional Climate Cases') concerns the question of who is entitled to bring a climate-related case before constitutional courts. It suggests that the legal nature of climate change complicates the determination of who has standing in constitutional adjudication and presents a dilemma for courts: liberalising standing requirements can open the floodgates for anyone to start climate-related constitutional proceedings, while restricting their scope might entail that there are no appropriate claimants to initiate such proceedings. Chapter 5 ('Rights-based Adjudication around Climate Change') is dedicated to the merits of rights-based adjudication, the subject that has received most scholarly attention in climate litigation literature

by far.[69] This chapter will explore the difficulties surrounding the enforcement of constitutional rights in relation to climate change. It will argue that rights-based adjudication takes multiple forms in climate cases. Indeed, cases may revolve around negative rights, positive rights, or rights as ancillary tools informing the scope of other constitutional norms. The analysis of existing judgments reveals that the legal nature of climate change raises different challenges that are specific to the multiple uses of rights to anchor climate disputes.

Chapter 6 ('Constitutional Remedies in Climate Cases') reflects on remedies in constitutional adjudication. It unearths a long-standing debate in constitutional scholarship around remedial strategies in adjudication and explores the use of different strategies to address climate change in existing cases. In light of the legal nature of climate change, this chapter argued for a balanced approach to remedies, emphasizing remedial humility and limiting the use of prescriptive remedies to avoid compromising other legitimate constitutional goals. The dissertation concludes with Chapter 7 ('Conclusion').

5. Conclusion

Climate change is an increasingly common subject in constitutional adjudication around the world. Yet, scholarly accounts of climate-related constitutional disputes are usually confined to specific cases and jurisdictions. This research provides a thorough examination of constitutional decisions about climate change across jurisdictions. The analysis of cases seeks to illuminate the

[69] Examples include: Rodríguez-Garavito (Ed.) (n 24); Peel and Osofsky, 'A Rights Turn in Climate Change Litigation?' (n 24); Bridget Lewis, 'Children's Human Rights-Based Climate Litigation at the Frontiers of Environmental and Children's Rights' (2021) 39 Nordic journal of human rights 180.

kind of disputes present in constitutional climate cases, as well as the normative challenges climate change poses for the exercise of constitutional adjudication across jurisdictions.

Existing judgments suggest that climate change gives rise to legal disputes concerning traditional concepts and institutions of constitutional law - e.g., federalism, justiciability, rights violations, remedies. Furthermore, a closer study of the cases reveals that the nature of climate change encumbers the role of constitutional courts in deciding these disputes. Climate change's polycentricity, temporality, and spatiality, render traditional constitutional understandings unsatisfactory to address the legal questions present in constitutional climate cases. In response to these challenges, this thesis provides courts with a conceptual toolkit—rooted in humility—that fosters robust, context-sensitive responses to the constitutional legal questions present in climate cases. In doing so, this research aspires to advance scholarly discussions on constitutional law's role in climate governance while supporting courts in their efforts to interpret and adapt constitutional frameworks to the novel realities of climate change and the legal transition it is driving around the world.

Chapter 1. The Legal Nature of Climate Change and the Need for Humility in Constitutional Climate Adjudication

1. Introduction

This chapter aims to provide the conceptual and analytical framework for the study of constitutional judgments on climate change presented in Chapters 2-6. Central to this framework are two interconnected elements: the legal nature of climate change, and humility as a guiding principle for constitutional courts in climate cases. The legal nature of climate change refers to the characteristics of its physical reality and social consequences that are relevant to ascertain its implications in constitutional adjudication. For the purposes of this thesis, this legal nature is defined by four main attributes: multivalence, polycentricity, spatiality, temporality. These attributes complicate the adjudication of constitutional climate cases by adding layers of complexity to the interpretation of existing doctrines, often requiring novel interpretations to address the legal questions present in such cases.

In exploring these attributes, this chapter sets the stage for the broader argument of this thesis: that through an approach characterised by humility as a guiding principle, constitutional courts can navigate the unprecedented legal challenges posed by the legal nature of climate change by adapting existing doctrines when necessary, balancing institutional limitations, and providing principled yet flexible interpretations that uphold constitutional frameworks and facilitate long-lasting climate governance. This chapter thus provides the conceptual foundation for understanding how humility can guide constitutional adjudication in the face of climate change's legal nature.

Humility is introduced as a guiding principle for constitutional courts to navigate the complexities posed by the legal nature of climate change in adjudicating constitutional climate disputes. Humility, in this context, encompasses three dimensions: *epistemic humility*, which acknowledges the limits of judicial knowledge in addressing systemic and scientific complexities; *doctrinal humility*, recognising that existing interpretations of constitutional concepts may be inadequate to fully capture the complex constitutional issues raised by climate change; and *institutional humility*, requiring courts to recognise their institutional limitations while harnessing their relative strengths in the broader constitutional governance of climate change. Together, these dimensions provide a cohesive framework for constitutional courts to engage with the complexities of climate change adjudication.

The chapter proceeds by exploring the meaning and multiple dimensions of humility, before delving into the attributes of climate change and their implications for constitutional adjudication. Each attribute—multivalence, polycentricity, spatiality, and temporality—is examined in detail, with specific attention to how humility can guide courts in addressing the legal questions they raise.

2. Humility as a Guiding Principle in Constitutional Climate Disputes

The legal nature of climate change, as described in this chapter, calls for a role of constitutional courts characterised by humility.[1] According to the Cambridge English Dictionary, humility

[1] I take the idea of *humility* applied to institutional decision making from both Sheila Jasanoff and Cass Sunstein. See Sheila Jasanoff, 'Technologies of Humility' (2007) 450 Nature (London) 33; Cass R Sunstein, 'From Theory to Practice Order of the Coif Lecture: Response' (1997) 29 Arizona State Law Journal 389, 400–4.

denotes 'the quality of not being proud because you are aware of your bad qualities'.[2] Recent scholarly accounts provide a tripartite definition of humility encompassing: i) seeing oneself as a limited agent, ii) modest self-presentation to others, and iii) other-oriented focus, being attentive to the needs of others.[3] Humility thus entails 'seeing oneself accurately - not too high and not too low'.[4] In other words, it promotes 'accurate self-assessment',[5] materialised in 'openness to the ideas of others and acknowledgement of one's fallibility'.[6]

As a virtue predicated from the judiciary – as 'judicial humility' - humility has traditionally been understood as favouring judicial restraint and comity, particularly in the exercise of judicial review of legislation.[7] In this view, humility fosters a self-abasing view stressing deference to the decisions of the political branches.[8] Yet, my proposal of humility as a virtue of constitutional courts in climate cases follows a different approach, stressing accurate self-assessment and openness to ideas in the face of complexity. It supports an active and conscientious engagement with the legal questions raised by climate change, paired with a self-learning attitude to accommodate its legal nature into the interpretation of constitutional doctrines of adjudication.

[2] 'Humility (Cambridge English Dictionary)' <https://dictionary.cambridge.org/dictionary/english/humility> accessed 11 November 2024.
[3] Everett L Worthington and others, 'Humility: A Qualitative Review' in CR Snyder and others (eds), *The Oxford Handbook of Positive Psychology* (Oxford University Press 2021) 644, 653.
[4] ibid 644.
[5] Nicolas Bommarito, 'Modesty and Humility' <https://plato.stanford.edu/archives/win2018/entries/modesty-humility/> accessed 5 November 2024.
[6] Amalia Amaya, 'The Virtue of Judicial Humility' (2018) 9 Jurisprudence 97, 99. On the distinction between humility and modesty, see also He Peng, 'Similar or Different Effects? Quantifying the Effects of Humility and Modesty on Job Performance' (2022) 13 Frontiers in Psychology 809841, 4.
[7] For example, Michael W McConnell, 'The Importance of Humility in Judicial Review: A Comment on Ronald Dworkin's Moral Reading of the Constitution Symposium: Fidelity in Constitutional Theory' (1996) 65 Fordham Law Review 1269, 1292–3; Sunstein, 'From Theory to Practice Order of the Coif Lecture: Response' (n 1) 402; Cass R Sunstein, 'Arbitrariness Review and Climate Change' (2022) 170 University of Pennsylvania law review 991, 1045.
[8] Amaya (n 6) 100.

My approach to humility in constitutional climate cases comprises three dimensions: *Epistemic*, *Doctrinal*, and *Institutional* humility.

a) Epistemic humility

Epistemic humility concerns the ways of understanding climate change and its legal implications in constitutional adjudication. It instructs courts to acknowledge that climate change presents novel and uncertain legal questions beyond the scope of established jurisprudence, underscoring the need to develop tailored framings of its constitutional implications that capture such novel realities. By encouraging courts to consider multiple perspectives and framings of climate change, epistemic humility ensures that their decisions remain balanced, context-sensitive, and responsive to the multifaceted and evolving nature of the issue.

Furthermore, epistemic humility relates to the use of scientific information in adjudication, requiring courts to engage meaningfully with interdisciplinary expertise, including climate science, economics, and social policy, acknowledging that their understanding of these complex domains is often incomplete. Engaging with the complex reality of climate change often requires constitutional courts to make judgments using scientific inputs[9] in order to determine what amounts to scientific *consensus*[10] or the *best available science*.[11] For instance, scientific

[9] As noted by Jasanoff, courts analyse and categorise scientific inputs 'as a prelude to applying legal rules'. See Sheila Jasanoff, 'Science, Common Sense & Judicial Power in U.S. Courts' (2018) 147 Daedalus 15, 15.
[10] Mike Hulme, *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press 2009) 91, 96–7.
[11] Lucy Maxwell, Sarah Mead and Dennis van Berkel, 'Standards for Adjudicating the next Generation of Urgenda-Style Climate Cases' (2022) 13 Journal of Human Rights and the Environment 35, 48–9.

sources may be crucial to assess the adequacy or reasonableness of countries' legislation to protect citizens from the negative consequences of climate change.[12]

In this context, epistemic humility requires courts to distinguish between what science can and cannot tell them, identifying the limitations of scientific information. As argued by Jasanoff:

> In the case of climate change, for example, science cannot tell us where and when disaster will strike, how to allocate resources between prevention and mitigation, which activities to target first in reducing greenhouse gases, or whom to hold responsible for protecting the poor.[13]

Jasanoff goes on to assert that, in the face of complex problems like climate change, 'the pursuit of perfect knowledge is asymptotic'.[14] Constitutional courts need to be aware of the limits of scientific knowledge and decide 'when to stop turning to science to solve problems'.[15] In other words, epistemic humility requires courts to understand science as one of many inputs in the adjudication of climate disputes, avoiding over-reliance on science as the key for resolving legal disputes of constitutional nature. Epistemic humility encourages courts to approach scientific findings with caution, understanding that they often offer probabilities rather than absolute truths, and to contextualize these findings within broader constitutional principles. Humility thus requires affording scientific evidence an *informative* rather than *determinative* status.

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[12] Examples include *2020 Heonma 389, etc 29/08/2024 Public Notice 335, 1409* (Constitutional Court of Korea); *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* [2021] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]); *Mathur v Ontario, 2023 ONSC 2316*; *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-HRET* (Supreme Court of Norway); *Juliana v United States, 947 F3d 1159 (9th Cir 2020)*.

[13] Jasanoff, 'Technologies of Humility' (n 1).

[14] ibid.

[15] ibid 33.

We can illustrate this point by comparing the judgments in *Mathur*[16] and *Neubauer*[17] around the use of scientific consensus to assess the adequacy of legislative emissions reduction targets. On the one hand, the Ontario Court of Appeal stated that the scientific consensus concerning the necessary level of GHG emissions reduction required by states by 2030 'is not imprecise'.[18] Thus, it suggested that Ontario's existing target of 30% reduction below 2005 levels by 2030 could be assessed against 'clear' standards for 1.5ºC of global warming from IPCC reports demanding a 45% reduction of *global anthropogenic emissions* below 2010 levels by the same year.[19] Overall, the court seemed to imply that a target below international standards would not be *Charter* compliant, equating scientific advise with constitutional requirements.[20]

On the other hand, the German Constitutional Court considered the same IPCC reports and asserted, against the arguments of the plaintiffs, that the decision to limit global warming to 1.5ºC was not scientific but 'essentially a normative matter involving an evaluation' over which the legislator enjoyed significant leeway.[21] Furthermore, it stated that 'the violation of (…) fundamental rights cannot be derived directly from normative assumptions and conclusions relating to climate action',[22] particularly because the protection of rights from climate change needs to be reconciled with conflicting interests.[23] Unlike the court in *Mathur*, the German court

[16] *Mathur v Ontario, 2024 ONCA 762*.
[17] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12).
[18] *Mathur v. Ontario, 2024 ONCA 762* (n 16) para 70.
[19] ibid 71–2.
[20] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) paras 70–4.
[21] ibid 160.
[22] ibid 163.
[23] ibid 162.

distinguished between the 'scientific requirements' of climate action and the 'constitutional requirements' of rights protection.

The reasoning of the court in *Neubauer* is an example of humility in the use of scientific evidence. Humility requires courts to perform an act of translation[24] and construction[25] when resorting to scientific evidence in adjudication. Such translation was absent in *Mathur*, were the court applied the advice of the IPCC mechanically, devoid of context, and without appreciation of additional factors requiring consideration. For example, the court ignored that, while Canada as a whole is committed to a 40-45% emissions reduction below 2005 by 2030,[26] existing policy frameworks indicate that the 'level of climate ambition varies between provinces'.[27] This might suggest that not *every* Canadian province is bound, as a matter of *Charter* compliance, by the IPPC's figure for the average level of *global* reductions necessary by 2030 - at least without further legislative or policy developments to that end.

The above examples also suggest that setting the boundaries of science in adjudication is also necessary to bring the legal questions posed by climate change to light. While the court in *Mathur* overlooked various relevant elements by over-relying on the IPCC figure - e.g. the different obligations of national and subnational governments, the binding force of the 1.5ºC target under which such figure was elaborated - the limited role of the same piece of information

[24] Jasanoff, 'Science, Common Sense & Judicial Power in U.S. Courts' (n 9) 16.
[25] Cass R Sunstein, 'On Legal Theory and Legal Practice' (1995) 37 NOMOS: American Society for Political and Legal Philosophy 267, 271.
[26] Government of Canada, 'Canada's 2030 Emissions Reduction Plan - Chapter 1' (22 June 2022) <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/emissions-reduction-2030/plan/chapter-1.html> accessed 8 November 2024.
[27] Government of Canada, 'Canada's 2030 Emissions Reduction Plan - Chapter 3' (22 June 2022) <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/emissions-reduction-2030/plan/chapter-3.html> accessed 8 November 2024.

in *Neubauer* allowed the court to focus its reasoning on the legal problems before it, such as the limits of legislative discretion to set different temperature goals and to balance climate action with other legitimate constitutional goals - energy security, economic growth. Consequently, courts may adopt *technologies of humility* that accommodate the limitations of scientific knowledge - as in *Neubauer* - and allow courts to focus on the legal problems before them.[28]

In sum, epistemic humility instructs courts to treat scientific findings as a critical but non-determinative tool, recognizing their inherent uncertainties and limits while balancing them with constitutional principles, ethical considerations, and the broader societal context.

b) Doctrinal humility

Doctrinal humility entails being open to the limitations of existing ideas, owning such limitations in the face of novel realities.[29] As stated in the introduction and demonstrated in this chapter, the legal nature of climate change confronts courts with new realities that often challenge traditional understandings in constitutional adjudication, questioning their adequacy to effectively address the legal questions at hand. Humility requires courts to recognise that existing concepts may be inadequate to fully capture the complex constitutional issues raised by climate change.[30] Furthermore, it invites courts to *own* those limitations,[31] being explicit about them and engaging with them to adjust doctrines of adjudication in ways that better capture the complex legal questions raised by new realities. Instead of operating in a factual vacuum[32] by ignoring or

[28] Jasanoff, 'Technologies of Humility' (n 1).
[29] Dennis Whitcomb and others, 'Intellectual Humility: Owning Our Limitations' 516–26.
[30] ibid 516.
[31] ibid 516–7.
[32] Sunstein, 'From Theory to Practice Order of the Coif Lecture: Response' (n 1) 395.

denying the tensions brought about by climate change, a humble court engages with them through active legal reasoning.

An example of this kind of humility can be illustrated by contrasting the judgments of the Norwegian Supreme Court in *Nature and Youth Norway*[33] and the German Constitutional Court in *Neubauer*[34] concerning whether climate change engages the rights to life and physical integrity of individuals. When considering the legality of oil licenses granted by the government, the Norwegian court concluded that the effects of such licenses would only be 'discernible in the future',[35] meaning that it did not entail a 'real and immediate' risk of losses of life in Norway, thus not engaging the rights of the claimants at the present time.[36] In this case, the court did not consider the *irreversible* impacts of GHG emissions and the potential need to anticipate such impacts in a forward-looking manner to protect constitutional rights. In other words, the court ignored that although such emissions would only materialise in the future, their impacts could not be redressed once they were produced.

By contrast, the German court incorporated the irreversible character of emissions into its assessment of the legality of the German Climate Protection Act. It argued that the protection of rights 'does not take effect only after violations have already occurred', particularly when 'irreversible processes are at stake'.[37] The realisation that GHG emissions do not just have *future*, but also *irreversible*, impacts was crucial for the German court's framing of the duties of

[33] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) paras 167–71.
[34] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) paras 143–70.
[35] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 168.
[36] ibid 171.
[37] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 146.

protection of the state stemming from constitutional rights. *Neubauer* is thus an example of a humble engagement with the reality of climate change to understand the limitations of existing doctrines and the adjustments necessary to capture the significance of future and irreversible impacts of GHG emissions on constitutional rights.

Doctrinal humility requires courts to be attentive and receptive to the shortcomings of existing doctrines, those aspects of the legal consequences of climate change that traditional formulations often fail to capture due to their novelty. This dimension of humility is essential for engaging with the legal transition brought about by climate change, enabling courts to adapt constitutional doctrines incrementally to address the additional layers of complexity it presents. By fostering flexibility and openness to doctrinal evolution, doctrinal humility ensures that constitutional law remains responsive and effective in navigating the challenges posed by a changing climate.

c) Institutional humility

Institutional humility requires courts to recognise their institutional limitations while harnessing their relative strengths in climate cases.[38] In other words, constitutional humility invites courts to reflect on their role in the constitutional governance of climate change. This has two main ramifications. First, given the scale and complexity of climate change, humility instructs courts to reflect on their restricted ability to contribute to its solution. Courts cannot solve climate change.[39] Even their capacity to effectively redress climate-related harms to constitutional rights

[38] Amaya (n 6) 99.
[39] Elizabeth Fisher and Eloise Scotford, 'Climate Change Adjudication: The Need to Foster Legal Capacity: An Editorial Comment' (2016) 28 Journal of Environmental Law 1, 3.

is constrained by the legal nature of climate change (see Chapter 6). This means that, in climate cases, courts' institutional advantage does not lie in pursuing climate action through aggressive remedies. Instead, courts should embrace remedial humility, focused on setting long-term guidelines of action rather than short-term and piecemeal prescriptive remedies.[40]

Second, humble constitutional courts may harness their relative strengths by dispensing understandings of constitutional values vis-à-vis the new complex reality of climate change. Constitutional courts are uniquely placed to do so.[41] They are authoritative interpreters of constitutions with the ability to provide comprehensive frameworks of action for the governance of climate change[42] - domestically[43] and internationally,[44] through mitigation[45] and adaptation,[46] and with respect for fundamental rights[47] and the constitutional allocation of competences.[48] In addition to solving individual disputes - over affectations they can often not redress effectively - humility calls courts to incorporate the complex, 'wicked',[49] reality of climate change into the substructure[50] of constitutional adjudication.

[40] Kent Roach, 'Judicial Remedies for Climate Change' (2021) 17 Journal of Law & Equality 105, 108–9.
[41] Dieter Grimm, *Constitutionalism: Past, Present, and Future* (First edition, Oxford University Press 2016) 201.
[42] Elizabeth Fisher, 'Telling Meaningful Stories About Climate Change and Public Law' [2024] Journal of Environmental Law eqae028, 11.
[43] *ADPF-708 04-07-2022* Roberto Barroso (Supremo Tribunal Federal (Brazilian Supreme Court)); SCC, 'Reference Re Greenhouse Gas Pollution Pricing Act'.
[44] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) paras 199–200.
[45] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12) 55.
[46] *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 25/01/2018* (Lahore High Court); *Shrestha v The Office of the Prime Minister & Ors NKP, Part 61, Vol 3* (Supreme Court (Nepal)).
[47] *Sentencia Rol No 25530-2021* (Corte Suprema de Chile (Chilean Supreme Court)).
[48] *Vanderstock v Victoria [2023] HCA 30* (High Court of Australia); *STC 87/2019* (Tribunal Constitucional de España (Spanish Constitutional Court)); *United States of America v State of California et al* [2020] United States District Court of the Eastern District of California No. 2:19-cv-02142 WBS EFB.
[49] Jonathan M Gilligan and Michael P Vandenbergh, 'Beyond Wickedness: Managing Complex Systems and Climate Change' (2020) 73 Vanderbilt Law Review 1777.
[50] Elizabeth Fisher, Eloise Scotford and Emily Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 The Modern Law Review 173, 199.

Humility compels courts to double down on their relative advantage, establishing the roadmap for lawful climate action in the future.[51] Yet, they should remain cautious in such undertaking, avoiding theoretically feasible, albeit practically unattainable narratives of the constitutional demands of climate action. An example of the latter can be found in the recent decision of the Indian Supreme Court recognising a 'right to be free from the adverse effects of climate change'.[52] While this decision has been praised by some as a 'big victory' for climate litigation,[53] I believe constructing a right detached from reality - because being free from climate change is simply impossible - constitutes a step in the wrong direction, away from humility and closer to heroic wishful thinking.[54]

Overall, humility instructs constitutional courts to acknowledge their powerful, yet limited, role in the constitutional governance of climate change.[55] It does not call for restraint, passivity, or even deference to the political branches in questions of climate policy.[56] Indeed, a humble decision does not equate to a 'conservative' one. For instance, *Neubauer* is perhaps one of the most impactful constitutional decisions on climate change,[57] what commentators in climate

[51] Sam Bookman, 'Uncertainty and Tension in Constitutional Climate Adjudication (May 21, 2024). German Law Journal (Forthcoming).' 18–20 <https://ssrn.com/abstract=4836405> accessed 11 November 2024.
[52] *MK Ranjitsinh & Ors v Union of India & Ors 2024 INSC 280* (Supreme Court of India) [27].
[53] Parul Kumar and Abhayraj Naik, 'India's New Constitutional Climate Right' (*Verfassungsblog*, 25 April 2024) <https://verfassungsblog.de/indias-new-constitutional-climate-right/> accessed 11 November 2024.
[54] Fisher (n 42) 19–21.
[55] Thomas Groß, 'Why Courts Will Not Stop Global Warming, but Climate Litigation Is Still Useful' [2024] Verfassungsblog <https://verfassungsblog.de/why-courts-will-not-stop-global-warming-but-climate-litigation-is-still-useful/> accessed 7 November 2024.
[56] Amaya (n 6) 99.
[57] Agnes Hellner and Yaffa Epstein, 'Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases Arctic Oil, Neubauer, and l'Affaire Du Siècle' (2023) 35 Journal of Environmental Law 207, 220.

litigation call a 'successful case'.[58] Yet, I have provided two specific examples of humility in the reasoning of the German Constitutional Court in that case.

Humility - or lack of it - can be found in both deferent or more interventionist decisions, as shown by the examples of *Nature and Youth Norway* - where the court ruled against the claimants - and *Mathur* - considered a recent 'success' for strategic climate litigation - respectively. Humility empowers courts to pursue an active - although not activist -[59] role in climate cases. A humble approach to constitutional adjudication recognises both the pressing need for judicial engagement in climate governance as well as the inherent limitations of judicial power in addressing the full scope of climate change. By balancing assertiveness with caution, courts can provide principled yet practical legal frameworks for addressing the profound constitutional challenges posed by climate change.

3. The Legal Nature of Climate Change and the Role of Humility

Climate change has been characterised in multiple ways in legal scholarship. Its exceedingly complex nature has led some to describe it as a 'super-wicked'[60] or 'hot' problem.[61] Such connotations often highlight that climate change does not only have some characteristics that make it a very complex social issue, but also that it entails an extreme version of complexity, 'wickedness', 'hotness'. Other environmental problems share some of the features that make

[58] César Rodríguez-Garavito, 'Litigating the Climate Emergency: The Global Rise of Human Rights–Based Litigation for Climate Action' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 22.
[59] Stefanie A Lindquist and Frank B Cross, *Measuring Judicial Activism* (Oxford University Press 2009) ch 2.
[60] Gilligan and Vandenbergh (n 49); Richard J Lazarus, 'Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future' (2009) 94 Cornell Law Review 1153.
[61] Fisher, Scotford and Barritt (n 50) 177.

climate change legally complex. They are often polycentric, have irreversible impacts, long temporalities, and are sometimes spatially unbounded.[62] And yet, climate change is an extreme version of all of the above. Its complexity does not only respond to the physical processes underpinning it, but also to the very own heuristics available to imagine its full extent. As suggested by Lazarus, the consequences of climate change are hard to imagine, as they lack immediacy in time and space.[63] All of this explains why, as pointed out by Hilson, only climate change has been classified as 'super-wicked', to differentiate it from simply 'wicked' problems.[64]

The unique combination of these characteristics creates legal challenges that test the limits of existing constitutional frameworks. Traditional doctrines, principles, and interpretive methods often struggle to accommodate the unprecedented and multi-dimensional nature of climate change.[65] Courts are faced with questions that transcend established legal categories, requiring them to reconcile constitutional principles with the realities of a global phenomenon that defies geographic, temporal, and institutional boundaries.[66]

In light of this, humility becomes a critical guiding principle for constitutional courts navigating the legal nature of climate change. Humility requires courts to approach these challenges with a recognition of the limitations of existing doctrines and their own institutional

[62] These characteristics have been previously studied by other legal scholars in relation to environmental problems more generally. See, for example: Lael K Weis, 'Environmental Constitutionalism: Aspiration or Transformation?' (2018) 16 International Journal of Constitutional Law 836, 852–6; P Cane, 'Are Environmental Harms Special?' (2001) 13 Journal of environmental law 3, 7–9. A short but insightful reflection on the similarities and differences between climate change and other environmental problems in relation to the law can be found in Chris Hilson, 'It's All about Climate Change, Stupid! Exploring the Relationship between Environmental Law and Climate Law' (2013) 25 Journal of Environmental Law 359.
[63] Lazarus (n 60) 1176.
[64] Hilson (n 62) 363.
[65] Fisher, Scotford and Barritt (n 50) 173–4.
[66] Sheila Jasanoff, 'A New Climate for Society' (2010) 27 Theory, Culture & Society 233, 233–4.

capacities. It enables courts to engage thoughtfully with the complexities of climate change without overstepping their role or oversimplifying the problem. By adopting humility, courts can better address the additional layers of complexity inherent in climate cases, crafting interpretations and remedies that are both principled and context-sensitive.

Drawing on existing scholarly accounts and the selection of constitutional judgments studied in this dissertation, I will discuss four attributes of the legal nature of climate change that add layers of complexity to the interpretation of traditional understandings in constitutional adjudication. These attributes not only illustrate the legal challenges posed by climate change but also underscore the necessity of humility in addressing them. They are:

i) **Multivalence**, meaning that climate change is open to multiple meanings and has no clear identity or delimitation.[67] Humility helps courts approach multivalence with openness and caution. It encourages them to recognize the importance of approaching climate change from diverse perspectives and resist the urge to prematurely prioritize one framing over others. By doing so, courts can engage more thoughtfully with the multiple facets of climate change, ensuring that their decisions reflect a balanced and context-sensitive understanding of its legal nature.

ii) **Polycentricity**, in the sense that the causes and impacts of climate change involve multiplicity of actors and interlocking relationships.[68] Humility enables courts to navigate polycentricity by fostering awareness of the trade-offs inherent in climate policy and the potential

[67] George Marshall, *Don't Even Think about It: Why Our Brains Are Wired to Ignore Climate Change* (Bloomsbury Publishing 2014) 94.
[68] Jeff King, *Judging Social Rights* (Cambridge University Press 2012) 190; Fisher, Scotford and Barritt (n 50) 178.

negative consequences of overly prescriptive judicial decisions. In other words, humility reminds courts of the broader governance landscape within which they operate and the need to consider the systemic implications of their rulings. Courts that act with humility are more likely to issue decisions that complement, rather than disrupt, coordinated efforts to address climate change.

iii) **Ambivalent spatiality**, related to the fact that the causes of climate change are global,[69] while its impacts are global but *locally differentiated*.[70] Humility helps courts reconcile the global and local dimensions of climate change by encouraging them to approach transboundary and collective claims with sensitivity to context. It ensures that courts remain grounded in constitutional principles while adapting their interpretations to address the spatial complexities of climate change. This approach allows courts to craft decisions that respect both local realities and the broader, interconnected nature of the problem.

iv) **Uncanny temporality,** meaning that climate change requires consideration of a large temporal field alien to legal thinking, involving past, present, and future GHG emissions with irreversible impacts over centuries and millennia.[71] Humility encourages courts to acknowledge the uncertainty of long-term impacts and approach such cases with caution and flexibility. It helps courts balance urgent action with long-term planning and flexibility, ensuring that their decisions contribute to sustainable governance without overstepping their constitutional role and imposing short-term burdens that might be counterproductive in the long run.

[69] Jasanoff, 'A New Climate for Society' (n 66) 237.
[70] Elinor Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change' (2010) 20 20th Anniversary Special Issue 550, 550.
[71] Lazarus (n 60) 1174; Benjamin J Richardson, *Time and Environmental Law: Telling Nature's Time* (Cambridge University Press 2017) 6.

In the sections that follow, I will analyse these attributes in detail, exploring their implications for constitutional adjudication and demonstrating how humility can provide a framework for navigating the specific legal challenges they create.

4. Multivalence

First and foremost, climate change is multivalent. In Marshall's words, this means that climate change 'is so open to multiple meanings and interpretations. It provides us with none of the defining qualities that would give it a clear identity—no deadlines, no geographic location, no single cause, solution, or enemy'.[72] This mainly stems from the fact that 'climate change' is a multifaceted phenomenon. These two words usually trigger considerations of causes, consequences, and solutions. Combined with the fact that climate change is a result of historical global anthropogenic GHG emissions, it seems only logical that it is susceptible of taking on a wide array of connotations. To quote Marshall once again:

> We can define climate change as an economic problem, a technological problem, a moral problem, a human rights problem, an energy problem, a social justice problem, a land use problem, a governance problem, an ideological battle between left and right worldviews, or a lack of respect for God's creation.[73]

Indeed, climate change is each of these things and all of them at the same time. It is riddled with overlapping and competing elements without clear boundaries that demand constant balancing and prioritisation in adjudication - economy, environment, loss of lives, energy security, international cooperation, intergenerational equity. In that sense, multivalence complicates the adjudication of constitutional climate disputes because it obscures the delimitation of its relevant

[72] Marshall (n 67) 94.
[73] ibid 95–6.

contours in specific cases. In other words, the multifaceted nature of climate change forces courts to make multiple choices of framing and narrative before they can determine what legal questions they will consider and what constitutional standards they will apply. As suggested by Fisher, multivalence is challenging for decision-makers because it complicates the determination of what should be considered or excluded when deciding about climate change.[74] This has been further exemplified by Sunstein when he asks 'Do foreign lives matter? When? How much? If one nation damages another, what are its obligations, as a matter of law and policy?'.[75] As will be explored in chapter 2-6, many of these questions have been discussed by constitutional courts around the world.

The following example helps illustrate the type of choices that constitutional courts are bound to make before they reach a decision about a specific aspect of climate change. In *Nature and Youth Norway*[76], the Supreme Court of Norway was called upon to decide whether the concession of new oil licenses in the Barents Sea constituted a violation of the constitutional rights to life (art. 93), to private and family life (art. 102), and to a healthy environment (art. 112).[77] A relevant consideration in the assessment of the court concerned the amount of GHG emissions that would be generated as a result of the new oil licenses. To reach such estimate, the court considered scope 1 and 2 emissions (those directly and indirectly produced by the operation

[74] Elizabeth Fisher, 'Climate Change and Statutory Construction: Administrative Law Expertise and "New" Emergencies' (2023) 27 The Edinburgh Law Review 322, 327–8.
[75] Cass R Sunstein, 'Climate Change Cosmopolitanism' (2022) 39 Yale Journal on Regulation 1012, 1012.
[76] *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-HRET* (Supreme Court of Norway). More information on the case can be found in: 'Greenpeace Nordic Ass'n v. Ministry of Petroleum and Energy (People v Arctic Oil)' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/greenpeace-nordic-assn-and-nature-youth-v-norway-ministry-of-petroleum-and-energy/> accessed 14 November 2024.
[77] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 3.

of the wells).[78] However, it was reluctant to take into account scope 3 emissions (those taking place beyond the control of the wells' owner, such as those derived from transportation and posterior combustion), responsible for around 95% of the total GHG emissions from oil production.[79]

Admittedly, the discussion about scope 3 emissions in this case was overshadowed by a debate regarding the *territoriality* of emissions (an aspect explored later in this chapter), as the lion's share of the oil extracted in Norway is exported and subsequently combusted abroad. The court thus concluded that it was reasonable to expect that the country's climate policy - and its judicial review of legislation - relied 'on the division of responsibilities between states in accordance with international agreements. (…) the clear principle is that each state is responsible for combustion on its own territory'.[80] In any case, the court's decision to consider only those emissions that would take place within Norway was decisive for its assessment of the compatibility of the oil licenses with the duties of the state under Article 112 of the Constitution.

The decision to exclude scope 3 emissions is exemplary of the kind of choices courts are confronted with in climate cases.[81] In this case, one could think of good legal reasons for and against the consideration of such emissions in the court's evaluation. On the one hand, these emissions are not qualitatively different from scope 1 and 2 emissions in their contribution to

[78] A scientific definition of Scope 1, Scope 2, and Scope 3 emissions can be found in Intergovernmental Panel on Climate Change, *Climate Change 2014: Mitigation of Climate Change: Working Group III Contribution to the IPCC Fifth Assessment Report* (Cambridge University Press 2015) 1260.
[79] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 155.
[80] ibid 159.
[81] The discussion about scope 3 emissions is a recurring debate in climate-related cases outside constitutional adjudication as well. In particular, this debate is present in administrative law cases concerning environmental impact assessments of proposed extractive projects. See, for example, *Waratah Coal Pty Ltd v Youth Verdict Ltd & Ors [2022] QLC 21* [717, 1808].

climate change and the future climate impacts taking place in Norway. In this sense, it would make sense for the court to incorporate them into the assessment of the potential harms stemming from the new oil licenses. On the other hand, scope 3 emissions are different in the sense that they would take place at a later stage and beyond the control and the territory of the state. There were thus two competing views regarding their inclusion or exclusion and no clear precedent in this respect. This is what multivalence is about.

The above example underscores the difficulties of addressing climate-related legal questions in constitutional adjudication. The overall physical processes causing climate change are arguably clear: it is primarily caused by anthropogenic GHG emissions flowing into the atmosphere. Nevertheless, that does not provide courts with clear indications to determine whether, as in our example, consumption-based emissions generated abroad are relevant to assess the constitutional law consequences of domestic state-run oil production. The latter is not a question of facts, but one of legal interpretation concerning the factual basis against which to apply the law in that case. Constitutional courts are confronted with many choices of this sort in the process of delimiting the aspects of climate change to adjudicate upon in specific cases.

Humility can serve as a compass in the face of multivalence, guiding courts through the competing narratives and diverse framings of climate change to identify its constitutional significance without imposing narrow or overly rigid interpretations. By embracing humility, courts can approach the multivalence of climate change with openness, acknowledging that different narratives are useful to capture its constitutional implications in different contexts. For example, while framing climate change as a problem of rights protection may allow courts to

capture its consequences for specific claimants - e.g. youth,[82] elderly,[83] indigenous communities -,[84] very often climate change needs to be framed differently in order to reflect its implications for the relationship between national and subnational governments around climate policy. In cases concerning the latter, climate change might be framed as a problem of multilevel governance requiring differing but complementary roles of multiple levels of government in accordance with their constitutional authority (see Chapter 2).

a) Justiciable and non-justiciable understandings of climate change

So far, I have mentioned two ways in which climate change has been framed to raise constitutional law questions suitable for adjudication, reflecting its multivalence: as a problem of rights protection, and as a problem of multilevel governance with implications for the allocation of responsibilities between national and subnational governments. And yet, in many other cases, multivalence has also led courts to frame climate change primarily as a political problem to be solved by the executive and legislator, grounded in separation of powers concerns.[85] Multivalence thus raises challenges for considerations of *justiciability* in constitutional climate cases, as courts

[82] *Sentencia STC4360-2018* [2018] Luis Armando Tolosa Villabona (Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)); *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12); *Environnement Jeunesse v Attorney General of Canada 2021 QCCA 1871*; *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12).

[83] *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Constitutional Court) 1C_37/2019.

[84] *Misdzi Yikh v Canada, 2020 FC 1059* Madam Justice McVeigh; *Smith v Attorney General [2022] NZHC 1693* [2022] Grice J.

[85] *La Rose et al v Her Majesty the Queen 2020 FC 1008* [29]; *Clean Air Council v United States, 362 F Supp 3d 237 (ED Pa 2019)* 1; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 84) para 40; *Animal Legal Defense Fund v United States, 404 F Supp 3d 1294 (D Or 2019)* 1301.

are bound to determine what aspects of the multifaceted reality of climate change are susceptible to adjudication, leaving aside those questions that lie beyond their purview (see Chapter 3).

Multivalence poses questions of justiciability because climate change can trigger a wide array of political considerations.[86] Given that climate change is the result of a range of activities embedded in humanity's current means of economic production and cultural practices, discussions about its solution 'inherently involve conflicts about how communities wish to live and how losses and benefits are distributed in a society'.[87] This means that climate change gives rise to disagreements about the values individuals and societies ascribe to the activities at the source of the problem - e.g. agriculture, aviation, industry - the risks of climate impacts, or the urgency with which action is needed, among other considerations.[88] Sometimes, constitutional courts frame climate change predominantly in terms of these political debates and trade-offs, finding that such issues are not *justiciable.*[89]

The political considerations that make courts sceptic about certain aspects of climate change being amenable to adjudication are twofold, as will be suggested in Chapter 3. A first source of 'political sensitivity' relates to the nature of judicial review in climate disputes. In these cases, courts are often asked by the plaintiffs to scrutinise existing climate legislation to determine whether it is within the government's constitutional leeway, or whether it is inadequate to protect

[86] This is related to what Fisher et al. call the 'socio-politically charged nature' of climate change. See Fisher, Scotford and Barritt (n 50) 180. See also Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (University of Chicago Press 2021) 13.
[87] Fisher, Scotford and Barritt (n 50) 180.
[88] Hulme (n 10) 112, 116, 139.
[89] A discussion of arguments for and against the intervention of courts in climate cases can be found in Laura Burgers, 'Should Judges Make Climate Change Law?' (2020) 9 Transnational Environmental Law 55.

the rights of citizens from the negative consequences of climate change.[90] Yet, multivalence entails that a wide array of legislation can be linked to climate change. Since addressing climate change requires a vast range of legislative choices within a country (concerning waste management, energy generation, agriculture, transportation, industry, etc), courts are asked to scrutinise legislation concerning all of these issues. Thus, courts might feel the need to adopt a cautious approach to avoid 'issues which are more properly political and policy matters (for the legislature and the executive) to impermissibly drift into the judicial sphere'.[91] In other words, courts often perceive that assessing government climate action risks second-guessing eminently political decisions, leading them to dismiss the justiciability of the issues before them. An excerpt from a judgment of the Canadian Federal Court illustrates this point:

> Complexity itself does not mean that the Court cannot adjudicate an issue; but when the issue spans across various governments, involves issues of economics and foreign policy, trade, and a host of other issues, the courts must leave these decisions in the hands of others.[92]

As this example indicates, courts may conclude that reviewing climate legislation implies delving into political considerations beyond their institutional role, hampering their legitimacy vis-à-vis the political branches. Put differently, courts are often reluctant to adjudicate a climate-related dispute because they believe they lack judicially identifiable standards for reviewing climate legislation, given the array of political choices and trade-offs embedded therein.[93] The first source

[90] Examples include *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12); *Mathur v. Ontario, 2023 ONSC 2316* (n 12); *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12); *Smith v Attorney General [2022] NZHC 1693* (n 84).
[91] *Friends of the Irish Environment v Ireland [2020] IESC 49* [2020] CJ Clarke (Supreme Court of Ireland) 8.9.
[92] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 84) para 56.
[93] This argument was adduced by the Court in *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 1171–3. A similar line of reasoning can be found in *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 82) paras 25–6.

of scepticism about aspects of climate change being too 'political' therefore relates to the substance of the legal issues courts are called to adjudicate upon in constitutional climate cases.

A second source of political sensitivity concerns the remedies requested by claimants in climate cases. The multiple sources of GHG emissions causing climate change entails that judicial intervention can be demanded over a wide range of issues. Multivalence opens up a broad range of remedial possibilities, reflecting the multi-faceted reality of climate change. Accordingly, plaintiffs often request a mixture of declaratory, mandatory, and supervisory orders from courts (see Chapter 6). For example, they might ask courts to order the legislature to adopt framework legislation on climate change,[94] more ambitious emission reduction targets,[95] or the phase-out of fossil fuels in a country.[96] Given the wide-ranging implications of such proposed remedies, courts have sometimes concluded that these are beyond the scope of their authority. In other words, courts often understand that they lack the institutional capacity and legitimacy to address climate change in light of its complexity.[97]

For example, in *Juliana v. United States,* the claimants sought a declaration that the US Federal Government violated the Constitution for failing to protect the rights of its citizens from climate change. Additionally, plaintiffs requested injunctive relief ordering the government to establish a plan to 'phase out fossil fuel emissions and draw down excess atmospheric [carbon

[94] *Shrestha v. The Office of the Prime Minister & Ors NKP, Part 61, Vol. 3* (n 46).
[95] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12); *Mathur v. Ontario, 2023 ONSC 2316* (n 12); *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12).
[96] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 1172; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 82); *Misdzi Yikh v. Canada, 2020 FC 1059* (n 84).
[97] Considerations of institutional capacity of constitutional courts vary significantly across jurisdictions. This issue will be studied in depth in Chapter 6. A framework for thinking about institutional capacity of constitutional courts and institutional contexts of political institutions in comparative constitutional law can be found in David Landau, 'Political Institutions and Judicial Role in Comparative Constitutional Law' (2010) 51 Harvard international law journal 319.

dioxide]'.[98] The proposed remedy raised separation of powers concerns from the Court of Appeals. In the words of the court:

> it is beyond the power of an Article III court to order, design, supervise, or implement the plaintiffs' requested remedial plan. (…) any effective plan would necessarily require a host of complex policy decisions entrusted, for better or worse, to the wisdom and discretion of the executive and legislative branches.[99]

In the above example, the reluctance of the court to adjudicate on the matter at hand stemmed from the nature of the remedies requested, rather than from concerns about the substance of the dispute. Indeed, the court had found that the claim met admissibility requirements concerning the substantiation of concrete and particularised injuries,[100] as well as causation linking such injuries to federal action.[101] Nevertheless, the court concluded that it lacked the power to intervene by adopting, or supervising the adoption of, climate legislation, given the political nature of decisions involved therein. Similar conclusions have been reached by courts in other cases.[102]

In the last few paragraphs, I have discussed the challenges posed by the multivalence of climate change for considerations of justiciability in constitutional cases. In a nutshell, multivalence implies that climate change is susceptible of being framed in multiple ways, some of which have been found to be constitutionally justiciable and some which have not. In this context, humility, and in particular *epistemic humility*, encourages courts to acknowledge the

[98] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 1164–5, 1172.
[99] ibid 1171–2.
[100] ibid 1168–9.
[101] ibid 1169.
[102] See, among others: *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 82) para 32; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 83) para 5.5.

diverse and often conflicting ways climate change can be framed - as a rights issue, a multilevel governance problem, a non-justiciable problem - and to remain open to evolving interpretations. Instead of promptly sticking to a single framing of 'climate change' as a whole, humility allows courts to engage thoughtfully with the specific legal questions of each case, remaining receptive to the possibility that some aspects of climate change might give rise to genuine constitutional disputes, while others might not.

An example of this humble attitude to justiciability can be found in the decision of the Ontario Superior Court of Justice in *Mathur.*[103] In this case, the court had to consider whether an application against Ontario's climate legislation and emission reduction target was justiciable on the grounds that they violated the rights of the claimants under sections 7 and 15 of the Canadian Charter of Rights and Freedom. The court concluded that the dispute was justiciable, as the rights of the claimants had 'a sufficient legal component' that allowed the court to review the challenged legislation.[104]

Nevertheless, the court also decided that one aspect of the case was not justiciable.[105] This concerned the determination of Ontario's fair shares of the remaining global carbon budget - the amount of GHG that it would be entitled to in order to abide by the temperature goals of the Paris Agreement.[106] The court argued that such a determination, upon which the applicants

[103] *Mathur v. Ontario, 2023 ONSC 2316* (n 12).
[104] ibid 107.
[105] ibid 112.
[106] ibid 109.

relied to assess the legality of Ontario's targets, was not a 'science question', but rather an issue to be determined politically, thus outside of the court's institutional capacity and legitimacy.[107]

I believe this decision to be an example of epistemic humility with regards to the justiciability of constitutional climate disputes, as the court engaged with the multiple legal elements of the dispute, rather than framing climate change as a whole in one way or another. This allowed the court to unpack the case into elements that had a sufficient legal component - such as the review of existing legislation against the Charter - and those who did not - determining Ontario's fair share. The court relied on both scientific information - experts' submissions - and the available legal sources - the Charter and its jurisprudence - in order to reach its conclusion, also reflecting an awareness of its judicial role vis-à-vis the capacity and legitimacy of the political branches.

b) The multivalence of constitutional law

In the specific context of constitutional adjudication, the challenges posed by multivalence of climate change are compounded by the inherent vagueness, indeterminacy, or *multivalence* that characterises constitutional law itself.[108] Similar to climate change, constitutional norms are also susceptible of multiple interpretations, mainly due to their comprehensiveness[109] and open-textured nature.[110] When this inherent multivalence intersects with the multifaceted nature of

[107] ibid.
[108] The study of the indeterminacy or ambiguity of constitutional law has followed many variants whose discussion exceeds the scope of this section. A recent account of this debate in constitutional law scholarship, particularly in what concerns to the distinction between rules and principles can be found in András Jakab, *European Constitutional Language* (Cambridge University Press 2016) ch 13. See also, Timothy AO Endicott, *Vagueness in Law* (Oxford University Press 2000) chs 2 and 3; Owen Fiss, *The Law as It Could Be* (New York University Press 2003) 152–60.
[109] Fiss (n 108) 152–3.
[110] David Lyons, 'Constitutional Interpretation and Original Meaning' (1986) 4 Social Philosophy and Policy 75, 83–4.

climate change - e.g. environmental, economic, rights dimensions - courts face significant challenges in framing and adjudicating its constitutional implications.

Furthermore, most constitutions do not contain any mention to climate change (with a few recent exceptions).[111] The majority of climate-related disputes are therefore grounded in constitutional norms concerning the protection of the environment - taking very different forms -[112] or more general constitutional rights provisions.[113] This means that courts often lack clear pre-existing standards that reflect the challenging legal nature of climate change.

Nevertheless, this does not mean that constitutional courts are left to their own devices in adjudicating climate cases. After all, as argued by Owen Fiss, 'generality and comprehensiveness do not discourage interpretation but are the very qualities that usually provoke it'.[114] Multivalence of both climate change as well as constitutional norms requires courts to think harder and to make deliberate interpretative choices, drawing on their constitutional frameworks and jurisprudence to adapt existing doctrines in ways that capture the constitutional

[111] Ghaleigh et al. have recently identified 11 jurisdictions with constitutional provisions dedicated to climate change. All of the constitutions containing such 'climate clauses' are located in Latin America and Africa, and most of them have been approved in the last 15 years. See: Navraj Singh Ghaleigh, Joana Setzer and Asanga Welikala, 'The Complexities of Comparative Climate Constitutionalism' (2022) 34 Journal of Environmental Law 517, 523–5. An older but still insightful classification of different types of constitutional environmental provisions can be found in James R May and Erin Daly, *Global Environmental Constitutionalism* (Cambridge University Press 2014) ch 2.

[112] The most common norms used in constitutional climate cases are provisions recognising the right to a healthy environment. According to the latest report of the United Nations Environment Programme (UNEP), over 100 countries contain provisions of this sort in their national constitutions. See: United Nations Environment Programme, 'Environmental Rule of Law: Tracking Progress and Charting Future Directions' (2023) 92–3 <https://doi.org/10.59117/20.500.11822/43943.> accessed 29 February 2024.

[113] As will be discussed in Chapter 5, constitutional rights provisions are the most common ground of climate disputes. Examples include, among many others, *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 83); *Misdzi Yikh v. Canada, 2020 FC 1059* (n 84); *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12); *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12).

[114] Fiss (n 108) 153.

significance of climate change. Multivalence thus presents an opportunity for courts to interpret constitutional frameworks in a way that reflects the legal nature of climate change and its implications for constitutional disputes. By resorting to *doctrinal humility*, courts may shape constitutional doctrines to account for climate change's multifaceted nature, as well as its polycentricity, temporality, and spatiality.

Understanding the multivalence of climate change in the terms explained above is the starting point to engage with the legal nature of climate change and its consequences for constitutional adjudication. In a nutshell, multivalence demands active judicial work, as courts are confronted with many choices to frame climate change in adjudication. In that sense, multivalence is a structural feature that complicates any attempt to assess the legal implications of action related to climate change in constitutional adjudication. Humility plays a crucial role in helping courts navigate these complexities by encouraging transparency about the interpretive choices being made, acknowledging the limitations of judicial capacity, and leaving space for political branches to address aspects of climate change beyond the judiciary's scope.

5. Polycentricity

Polycentricity refers to the multiplicity of intertwined actors and dynamics that contribute to, and are affected by, climate change. In the words of King, paraphrasing Fuller: 'a polycentric problem is one that comprises a large network or web of interlocking relationships, such that a change to any one relationship causes a series of complex changes to other factors'.[115] As indicated above,

[115] King (n 68) 190.

this characteristic is by no means exclusive of climate change. Environmental issues are 'inescapably and paradigmatically' polycentric, as suggested by Weis.[116] However, climate change suffers from a particularly extreme form of polycentricity.[117] In the words of Fisher et al. 'This is because anthropogenic climate change is caused by the cumulative and indirect impacts of human activities across a range of sectors, at various scales, across different countries. Its impacts are similarly indirect, multi-scalar and differentiated'.[118] In other words, polycentricity reflects the interconnectedness of the earth's climate system, which bears significance for the causes, consequences, and solutions to climate change.

One source of polycentricity relates to the physical reality of climate change. The earth's atmosphere intermixes GHG emissions irrespective of their source or origin, while the effects of climate change are distributed across the world according to the climate vulnerability of each region.[119] Polycentricity thus encompasses an international dimension, reflecting a mismatch in which 'countries export much of the harm created by their greenhouse gas (GHG) emissions'.[120] In fact, recent studies suggest that countries with the smallest historical emissions tend to be more vulnerable on average than the highest historical emitters, meaning that countries facing more severe climate impacts are also the ones with less historical responsibility and less economic capabilities to cope with its consequences.[121] This negative relationship between historical

[116] Weis (n 62) 853.
[117] Fisher, Scotford and Barritt (n 50) 178.
[118] ibid.
[119] Elinor Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change' (2010) 20 Global Environmental Change 550.
[120] Glenn Althor, James EM Watson and Richard A Fuller, 'Global Mismatch between Greenhouse Gas Emissions and the Burden of Climate Change' (2016) 6 Scientific Reports 20281, 1.
[121] Sebastian Bathiany and others, 'Climate Models Predict Increasing Temperature Variability in Poor Countries' 4 Science Advances eaar5809, 5–7; Althor, Watson and Fuller (n 120) 3.

emissions and climate vulnerability inevitably raises questions of climate justice in light of existing inequalities in the distribution of climate impacts.[122]

The polycentricity of climate change *across* countries also takes place *within* them, adding a domestic dimension to this feature. Indeed, cities and regions, contribute cumulatively to climate change and are therefore partially to blame for its negative impacts in a particular territory. This complicates the assessment of courts when determining who is responsible for addressing climate change inside a given country. As will be explored further in this chapter and especially in Chapter 2, climate change raises questions about the vertical allocation of authority within countries, as subnational and national governments engage in turf wars over their competences to adopt climate policy.

a) Polycentricity and the allocation of responsibility in constitutional adjudication

Polycentricity has several implications for constitutional adjudication. One such implication relates to the attribution of responsibility for the negative impacts of climate change. Given that climate impacts are a result of cumulative GHG emissions from the activities of individuals, private companies, and governments at different levels, the determination of who can be held accountable for those impacts is not straightforward. This problem is further exacerbated by the fact that GHG emissions, once intermixed in the atmosphere, cannot be distinguished in their

[122] Questions of climate justice at the international level are only marginally discussed in this research, given its focus on domestic judgments from constitutional courts. Nevertheless, insightful accounts on its implications for international and public law are increasingly common in scholarship. See: Farhana Sultana, 'Critical Climate Justice' (2022) 188 The Geographical Journal 118, 118.

singular contribution to specific impacts.[123] Therefore, it could be said that polycentricity gives rise to legal indeterminacy in relation to the attribution of responsibility for the negative consequences of climate change.

In the absence of legal frameworks addressing this issue, a series of judicial cases have sought to hold states,[124] corporations,[125] and individuals[126] accountable for their contribution to anthropogenic climate change, in an effort to establish clear legal standards of responsibility.

[123] Thanks to impressive progress achieved in the last decade, attribution studies are able to assess the contribution of anthropogenic climate change on the worsening of specific weather events or climate conditions. These models usually take into account worldwide historical GHG emissions since the wake of the industrial revolution. However, even state-of-the-art studies do not distinguish the geographical source of any fraction of such emissions. Latest examples of attribution studies of this sort include: RF Stuart-Smith and others, 'Increased Outburst Flood Hazard from Lake Palcacocha Due to Human-Induced Glacier Retreat' (2021) 14 Nature Geoscience 85; JA Rivera and others, '2022 Early-Summer Heatwave in Southern South America: 60 Times More Likely Due to Climate Change' (2023) 176 CLIMATIC CHANGE. More about the latest developments in attribution studies can be found in: FEL Otto, 'Attribution of Extreme Events to Climate Change' (2023) 48 Annual Review of Environment and Resources 813.

[124] Of particular significance have been the cases brought before regional and international tribunals against States. As of September of 2023, there are three climate cases before the Grand Chamber of the European Court of Human Rights. See: European Court of Human Rights, 'Factsheet - Climate Change' <https://www.echr.coe.int/documents/d/echr/fs_climate_change_eng> accessed 14 September 2023. Furthermore, the International Court of Justice, the International Tribunal for the Law of the Sea, and the Interamerican Court of Human Rights are working on advisory opinions regarding the obligations of States in relation to climate change under different instruments and regimes of international law. Finally, the UN Human Rights Committee recently declared that Australia's failure to protect indigenous Torres Strait Islanders from climate change violated their rights to enjoy their culture and be free from arbitrary interferences with their private life, family, and home. See: *Daniel Billy et al v Australia* [2022] UN Human Rights Committee CCPR/C/135/D/3624/2019. Some of the challenges surrounding human rights adjudication in relation to climate change are discussed in Stefan Theil, *Towards the Environmental Minimum: Environmental Protection through Human Rights* (Cambridge University Press 2021) ch 11.

[125] A couple of examples include the decision of the Hague District Court that ordered Shell to reduce its GHG emissions by 45% by 2030 relative to 2019 levels citing the unwritten standard of care laid down in Book 6 Section 162 Dutch Civil Code, see: *Friends of the Earth Netherlands (Milieudefensie) v Royal Dutch Shell* (The Hague District Court); and the pending case brought by the Peruvian citizen Saúl Lliuya against Germany's largest electricity producer RWE for its historical GHG emissions that have allegedly accelerated the melting of a glacier and consequent volumetric increase of a lake that risks flooding Mr. Lliuya's town. See: *Saúl Luciano Lliuya v RWE AG* (Higher Regional Court Hamm).

[126] An interesting case in relation to the responsibilities of individuals was initiated when the NGO All Rise requested the Office of the Prosecutor of the International Criminal Court for an investigation into the responsibility of former Brazilian President Jair Bolsonaro for his role in the staggering deforestation of the Amazon rainforest. According to the NGO, Bolsonaro's actions constitute 'a clear and extant threat to humanity itself', amounting to crimes against humanity. See: 'The Planet v. Bolsonaro' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/the-planet-v-bolsonaro/> accessed 14 September 2023.

Although the responsibility of corporations and individuals is not at stake in the constitutional climate cases discussed in this thesis, the responsibility of states and different levels of government (i.e. national and subnational) is often a key element of the legal dispute in those cases. Constitutional courts are thus tasked with determining the accountability of governments for climate-related harms resulting from the combined actions of multiple actors across different levels.

In this context, humility urges courts to recognise the intricate web of relationships and actors underlying climate change when shaping the responsibility of states and governments at multiple levels. This implies, among others, acknowledging that individual countries are only responsible for a fraction of annual global GHG emissions, and that emissions are generally not gratuitous but result from activities essential for human welfare - agriculture, heating, infrastructure.[127]

An example of the latter framing of the state responsibility with respect to climate change can be found in *Neubauer,* where the German Constitutional Court argued:

> respecting future freedom requires that the transition to climate neutrality be initiated in good time. In all areas of life – production, services, infrastructure, administration, culture, consumption, (…) developments need to be set in motion to ensure that in the future, meaningful use can still be made of freedom protected by fundamental rights, but then based on CO2-free alternatives. However, the state itself has neither the capacity nor the sole responsibility for providing all the technological and social developments to replace and avoid greenhouse gas-intensive processes and products, and for setting up the necessary infrastructure. (…) Constitutional law nevertheless obliges the legislator to create the underlying conditions and incentives that would allow these developments to occur[128]

[127] Mengpin Ge, Johannes Friedrich and Leandro Vigna, 'Where Do Emissions Come From? 4 Charts Explain Greenhouse Gas Emissions by Sector' (*World Resources Institute*, 5 December 2024) <https://www.wri.org/insights/4-charts-explain-greenhouse-gas-emissions-countries-and-sectors> accessed 6 January 2025.
[128] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 248.

In this case, the court framed the responsibility of the state in a nuanced way, acknowledging the constitutional requirements to ensure the protection of rights from climate change while understanding that such enterprise requires a long-term transformation of several areas of social life. This allowed the court to strike a balance between holding the state accountable for its constitutional obligations and recognizing the shared and systemic nature of climate responsibility.

b) Trade-offs and judicial remedies in the face of polycentricity

Polycentricity is also relevant for the way climate change is framed in adjudication and the determination of remedies to address it. Lon Fuller elaborated on the issue of polycentricity in his famous essay 'The Forms and Limits of Adjudication'.[129] He posited that adjudication could not 'encompass and take into account the complex repercussions'[130] ensuing from a decision that altered one of the multiple dynamics and relationships governing a polycentric problem. In many cases, this could lead to adjudicative solutions failing to address the issue due to unexpected repercussions; courts ignoring 'judicial proprieties', for example by guessing unproven facts; or judges reformulating the issues to make them amenable to adjudicative solutions, distorting the nature of the problem.[131] All in all, Fuller warned that polycentric problems risked pushing courts 'beyond the proper limits of adjudication'.[132] Fuller's ideas have been heavily discussed in public law scholarship, with several critiques and refinements made to address its shortcomings.[133] Yet,

[129] Lon L Fuller, 'The Forms and Limits of Adjudication' (1978) 92 Harvard law review 353.
[130] ibid 394.
[131] ibid 401.
[132] ibid 395.
[133] Clear examples of this sort are JWF Allison, 'Fuller's Analysis of Polycentric Disputes and the Limits of Adjudication' (1994) 53 Cambridge law journal 367; and more recently King (n 68) ch 7.

Fuller's warning about polycentricity in adjudication is useful to illuminate the challenges posed by the polycentricity of climate change in constitutional adjudication, particularly regarding the determination of remedies in constitutional adjudication (see Chapter 6).

Given that climate change suffers from an extreme form of polycentricity, it would seem obvious that Fuller's concerns about polycentric problems in adjudication are particularly relevant in this space. An example can help illustrate this point. In *Urgenda*, the Dutch Supreme Court ordered the state to pursue a minimum target of 25% reduction of GHG emissions by 2020 relative to 1990 levels (up from the existing 20% target set out by the government). This decision naturally led to a series of policy measures to abide by the judicial order, with the latest data suggesting that the state managed to achieve the court-mandated target.[134] In particular, three measures were set out by the government in its compliance strategy: i) the accelerated closure of the Hemweg coal plant, ii) higher expenditure on its feed-in tariff programme to promote renewable energy projects, and ii) a tax on waste disposal that was extended to waste imported from neighbouring countries (mainly the UK, Belgium, and Germany).[135]

At face value, this outcome speaks to the immense potential of adjudication to pursue climate action. Yet, a closer examination of the measures implemented by the Dutch government tells a somewhat different story. In a recent analysis of the implementation of *Urgenda*, Mayer suggests that the emission reductions achieved in the Netherlands were 'simply displaced to the

[134] Benoit Mayer, 'The Contribution of Urgenda to the Mitigation of Climate Change' (2023) 35 Journal of Environmental Law 167, 171.
[135] ibid 172–5.

territory of other states'.[136] According to Mayer, the implementation measures would actually lead to a slight net increase in cumulative global emissions in the long-term, when considered altogether.[137]

This example illustrates the challenges posed by polycentricity for considerations of remedial strategies in constitutional climate cases. Given that GHG emissions originate from a wide range of sources globally, the measures adopted by a given country are susceptible of being offset by emissions elsewhere. This is particularly true in cases of rapid emission reduction measures (such as the closing of the Hemweg coal plant in the Netherlands) if they are not accompanied by corresponding reductions in the demand for those emissions or carbon free alternatives replacing them.[138]

The discussion of this example is by no means intended to suggest that courts should refrain from adopting remedies in response to climate change. Yet, it does highlight that thinking about remedies in constitutional climate cases is particularly challenging, due to its polycentricity. Remedies can have unexpected repercussions on the multiple relationships underpinning climate

[136] To reach this conclusion, Mayer mainly focuses on the effect of three measures adopted by the Dutch government to abide by the judgment. ibid 179.
[137] ibid 172–9.
[138] Emissions reduced in a country's territory can be replaced by emissions in other countries, mainly by way of imports of goods previously produced domestically. This is known as 'carbon leakage'. An overview of the main sources of carbon leakage between countries can be found in NK Dubash and others, 'National and Sub-National Policies and Institutions.' in PR Shukla and others (eds), *IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2022) 1393–4. The impact of this kind of 'carbon leakage' is exacerbated by the fact that current domestic GHG emission inventories are reported on the basis of territorial or production-based emissions only. To this day, there are no internationally agreed methodologies for calculating and reporting consumption-based emissions adjusted for trade. An overview of the complexities involved in calculating consumption-based emissions, as well as existing approaches to such calculations, can be found in the IPCC Sixth Assessment Report. See Intergovernmental Panel on Climate Change (IPCC) (ed), *Climate Change 2022 - Mitigation of Climate Change: Working Group III Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 239–40.

change. As shown by the example above, emission reductions measures in one country might have short-term and long-term consequences that are impossible to anticipate in adjudication. Climate change thus defies clear solutions,[139] inviting courts to engage in *remedial humility* (see Chapter 6).

By fostering an awareness of the systemic repercussions of judicial orders, humility enables courts to adopt remedies that are flexible and responsive, minimizing the risk of unintended consequences such as increasing long-term emissions. Humility compels courts to confront and openly navigate the trade-offs inherent in climate governance,[140] fostering transparency in balancing constitutional goals such as rights protection and energy security or economic growth. Furthermore, *institutional humility* may instruct courts to acknowledge the limitations and potential risks of prescriptive judicial interventions, demonstrating awareness of their role in the broader governance context and respecting the role of the political branches.

In sum, polycentricity has two main implications for the adjudication of constitutional climate disputes. On the one hand, the multiplicity of sources of GHG emissions contributing to climate change complicates the attribution of responsibility of governments for climate-related harms. On the other hand, polycentricity hampers the assessment of remedies in constitutional

[139] Steve Rayner, 'Foreword' in Mike Hulme (ed), *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press 2009) xxii, xxi.

[140] By this I do not mean that addressing climate change is mutually exclusive with other legitimate social concerns, but rather that the wide-ranging societal transformations required to achieve climate goals can give rise to unexpected trade-offs that undermine other social goals -especially in the short-term. Yet, this interrelationship can also lead to unexpected synergies or co-benefits of climate policies for the achievement of other goals. See, for example, Philip Barrett and others, 'Modeling the U.S. Climate Agenda: Macro-Climate Trade-Offs and Considerations' (2021) 2021 IMF Working Papers 1; Cristina Peñasco, Laura Díaz Anadón and Elena Verdolini, 'Systematic Review of the Outcomes and Trade-Offs of Ten Types of Decarbonization Policy Instruments' (2021) 11 Nature Climate Change 257; Jing-Yu Liu and others, 'Identifying Trade-Offs and Co-Benefits of Climate Policies in China to Align Policies with SDGs and Achieve the 2 °C Goal' (2019) 14 Environmental Research Letters 1.

adjudication. Judicial remedies can have unexpected repercussions that jeopardise their intended effect and may compromise the attainment of other legitimate constitutional goals. Humility enables courts to navigate these challenges by instructing a cautious and reflective approach, inviting them to craft remedies and assign responsibility in a way that acknowledges the interconnected dynamics of climate governance and respects the limitations of judicial intervention.

6. Ambivalent Spatiality

A third attribute of the legal nature of climate change of relevance for constitutional adjudication concerns the way it operates in space. In the words of Jasanoff, climate change is 'spatially unbounded. It is everywhere and nowhere, hence not easily accessible to imaginations rooted in specific places'.[141] Yet, constitutional adjudication requires a territory in which to assess the operation of constitutional law, i.e., a country or a fraction of it. This is the traditional territorial jurisdiction of constitutional adjudication, 'the rigidly mapped territories within which formally defined legal powers are exercised'.[142] This entails that constitutional courts can only apply the law with respect to events taking place inside their *rigidly mapped territories*.[143]

[141] Jasanoff, 'A New Climate for Society' (n 66) 237.

[142] Richard T Ford, 'Law's Territory (A History of Jurisdiction)' (1999) 97 Michigan law review 843, 843.

[143] The deepening of globalisation has sparked an increasing number of constitutional cases concerning transboundary issues, particularly related to cross-border violations of constitutional rights. Yet, the scope of such cases is limited and subject of ongoing debate. An overview of cross-border rights violations in comparative law can be found in Dalia Palombo, 'Extraterritorial, Universal, or Transnational Human Rights Law?' (2022) 56 Israel Law Review 92. Ongoing debates concerning extraterritoriality in constitutional cases in the United States can be found in Ganesh Sitaraman, 'Constitutional Remedies - "Bivens" Actions - Search and Seizure - "Hernandez v. Mesa"' (2020) 134 Harvard Law Review 550.

As discussed above with the Norwegian case, the Supreme Court decided to exclude scope 3 emissions from its assessment because they would take place outside Norway's territory. In other words, considering scope 3 emissions exceeded the territorial jurisdiction of the court.[144] The reality of climate change calls into question the territorial jurisdiction of constitutional adjudication because it confronts courts with considerations of various scales of action: the global, the national, the subnational.[145] Put differently, the spatial dimension of climate change challenges the spatial boundaries of constitutional adjudication, as the appraisal of its legal implications requires linking multiple scales of representation *beyond* and *within* the nation-state.[146] Climate change requires courts to think globally in order to act locally.

Climate change has an ambivalent spatiality characterised by global causes and global but *locally differentiated* consequences. On the one hand, it is a consequence of global GHG emissions that are intermixed once they reach the atmosphere. While the emissions generated by different countries vary significantly in their quantity, the contribution of any unit of emissions is qualitative identical, independently from its geographical origin. Climate change is thus a *global* problem, in the sense that GHG emissions originate everywhere on earth.

On the other hand, while the impacts of climate change are felt worldwide, they manifest differently across world regions. As noted by Ostrom, 'the impacts of climate change differentially affect localities and regions by their geographic location, ecological and economic conditions,

[144] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 159.
[145] Joana Setzer and Lisa C Vanhala, 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance' (2019) 10 WIREs Climate Change e580, 10.
[146] Jasanoff, 'A New Climate for Society' (n 66) 238.

prior preparation for extreme events, and past investments'.[147] The combination of these two elements denotes a certain *duality* of climate change's spatiality: its causes are *global,* while its consequences are global but *locally differentiated.*[148] The geographical scope of climate change thus denotes an ambivalence reflecting the duality of its causes and consequences.

The spatiality of climate change is also linked to its polycentricity. As indicated above, GHG emissions originate from a wide range of activities and across the globe. In that sense, polycentricity refers to the multiple sources of emissions and the relationships between them. Spatiality adds a layer of complexity mainly related to the geographical distribution of the causes and consequences of climate change around the world. The implications of the spatiality of climate change for the adjudication of constitutional climate disputes are exacerbated by polycentricity, and vice versa. Nevertheless, while polycentricity stresses the interconnectedness and multiplicity of actors and systems involved in climate governance, spatiality focuses on the geographic dimensions of climate change, emphasizing the global origins of emissions and their locally differentiated impacts, which challenge the territorial boundaries of constitutional adjudication.

[147] Ostrom (n 70) 550.

[148] This does not imply that the historic contributions to climate change are evenly distributed across countries, but simply that there are not qualitative differences in the contribution of a given amount of GHG emissions to global warming depending on the place of origin. Conversely, the impacts of that same amount of GHG will vary significantly across the world. On the implications of this duality for considerations of climate justice, see, among others: Althor, Watson and Fuller (n 120); Bathiany and others (n 121); Sultana (n 122).

a) Thinking globally

The dual spatiality of climate change has multiple consequences for its treatment in constitutional adjudication. One clear implication of the *global* character of climate change is that individual states are incapable of fully redressing or preventing its impacts. Despite significant concentration of GHG emissions across countries - the top 10 emitters account for over two-thirds of global emissions -[149] no single country can halt climate change on its own. States have used this reality as an argument against the justiciability of climate change, underscoring their limited ability to address the problem.[150] In the majority of the cases discussed in this research, courts have dismissed such line of argumentation and have instead established a responsibility framework against which to assess governments' domestic climate action, often relying on countries' commitment under the Paris Agreement in conjunction with other constitutional obligations.[151] Nevertheless, the exact content of states' obligations to act in relation to climate change is a major point of contention in constitutional climate cases, as discussed above.

The dual spatial nature of climate change has also been translated into constitutional obligations to act internationally. For example, in *Neubauer*, the court took into consideration the global character of climate change to determine the content of state obligations to protect its citizens against climate impacts. It concluded that the duty of protection stemming from the right

[149] Johannes Friedrich and others, 'This Interactive Chart Shows Changes in the World's Top 10 Emitters' (2 March 2023) <https://www.wri.org/insights/interactive-chart-shows-changes-worlds-top-10-emitters> accessed 26 September 2023.
[150] Rodríguez-Garavito (n 58) 30.
[151] See, for example: *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 149; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 58; *G 144-145/2020-13, V 332/2020-13* (Verfassungsgerichtshof (Austrian Constitutional Court)) [35]. On a similar note, see Rodríguez-Garavito (n 58) 30.

to life and physical integrity 'compels the state to engage in internationally oriented activities to tackle climate change at the global level and requires it to promote climate action within the international framework'.[152]

Furthermore, as the emissions of any country have repercussions beyond its territorial boundaries, they raise the issue of responsibility for the consequences of domestic GHG emissions abroad. This question was also briefly discussed by the court in *Neubauer*. In this case, two of the applicants were nationals from Nepal and Bangladesh who asked the court to declare a violation of their rights due to the climate impacts they were suffering in their countries of origin, since they were partially attributable to Germany - responsible for around 2% of annual global emissions.[153] The court declared their complaints admissible, arguing it could not rule out that the fundamental rights of the German Basic Law 'also oblige the German State to protect them against the impacts of global climate change'.[154] Nevertheless, the court concluded that a violation of a duty of protection towards the foreign nationals was not ascertainable, because the German government could not implement adaptation measures in addition to mitigation policies to protect them from the negative consequences of climate change. Germany's duty towards these claimants would therefore be fulfilled through its 'international commitment to preventing climate change and through specific measures aimed at implementing the internationally agreed climate action'.[155] Once again, the spatiality of climate change invites courts to expand traditional understandings of territoriality by considering the effects of domestic action abroad.

[152] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 149.
[153] *ibid 78, 174.*
[154] ibid 90.
[155] ibid 181.

In sum, the global and transboundary nature of climate change and GHG emissions raise a number of unprecedented sticking points that courts are prompted to adjudicate upon. Courts may approach the spatial challenges of climate change by engaging in humility, cautiously expanding their interpretive scope to consider the transboundary implications of domestic actions, while respecting the limits of their jurisdictional mandate.

b) Acting locally

As discussed above, climate change has negative consequences that are *locally differentiated*. In particular, it has negative consequences for local environments, over which subnational authorities typically enjoy constitutional entitlements within their jurisdictions (see Chapter 2).[156] Addressing the local impacts of climate change demands legislative action at multiple levels within the state.

The ambivalent spatiality of climate change entails constant interaction and thus potential conflicts between levels of governments. Legislative action at the national level has implications for the exercise of subnational competences, and vice versa. As will be discussed in Chapter 2, this situation raises disputes about the legal boundaries of different levels of government to adopt climate measures. For example, constitutional courts have been asked to adjudicate on the validity of subnational legislation aimed at tackling climate change, as national governments claim

[156] Examples in comparative constitutional law can be found in May and Daly (n 111) ch 7.

that such legislation interferes with the autonomy necessary for planning climate action at the national and international levels.[157]

Cases have also been filled by regional governments against national legislation. For example, a group of provinces in Canada challenged the validity of the Greenhouse Gas Pollution Pricing Act (GGPPA) that implemented a nation-wide carbon tax, arguing that such scheme constituted an unconstitutional encroachment of their authority.[158] In this case, the provinces sought to defend their authority to address climate change through regional legislation reflecting local conditions and striking their own balance between climate action and other legitimate goals. The Supreme Court was thus called upon to delimit the constitutional entitlements of both national and subnational governments, in light of competing claims resulting from the ambivalent spatiality of climate change.

Other cases have sought to hold regional governments accountable for their inaction in relation to climate change. In Germany, the Constitutional Court decided a case against several *Länder* - regional governments - for failing to adopt sufficient climate plans to reach net-zero emissions in line with national legislation.[159] In its judgment, the court concluded that subnational governments have different obligations compared to the national government, given their limited

[157] Examples include *Amparo en Revisión 888/2018* [2020] Alberto Pérez Dayán (Suprema Corte de Justicia de la Nación (Segunda Sala) (Mexican Supreme Court)); *STC 87/2019* (n 48).
[158] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* [2021] CJ Wagner (Supreme Court of Canada).
[159] *BvR 1565/21/1, BvR 1566/21/1, BvR 1669/21/1, BvR 1936/21/1, BvR 2574/21/1, BvR 2575/21/1, BvR 2054/21/1, BvR 2055/21/1, BvR 2056/21/1, BvR 2057/21/1, BvR 2058/21/1* [2022] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]).

influence over climate policy and no verifiable emission reduction targets against which to assess the adequacy or sufficiency of their policies.[160]

The above cases suggest that the spatiality of climate change complicates the assessment of courts in constitutional climate cases concerning the degrees of autonomy of national and subnational governments. It confronts courts with multiple levels of action that are interconnected due to the very nature of climate change - i.e. the global, the national, the subnational - while requiring them to determine the exact, and often exclusive, boundaries of constitutional authority at each of these levels (see Chapter 2). In this context, humility provides a framework for courts to navigate the complex allocation of responsibilities across government levels. By adopting humility, courts can frame their decisions in a way that balances local and national authority, while acknowledging the broader international commitments of the state. This approach allows courts to clarify the constitutional obligations of different levels of government without imposing overly rigid frameworks that may hinder cooperative climate governance.

c) Individualising the collective impacts of climate change

Finally, the spatial dimension of climate change is also challenging because it entails a sense of *remoteness*[161] that challenges the spatial delimitation traditional in constitutional adjudication. The fact that climate change is a collective problem entails that its impacts resist individualisation for the purposes of adjudication. Given that climate change may potentially affect everyone everywhere, it might give the impression that any particular individual is only tenuously affected

[160] ibid 13–4.
[161] This idea of remoteness in space and time has been used by Jamieson to think about climate change. See Dale Jamieson, 'Ethics, Public Policy, and Global Warming' (1992) 17 Science, Technology, & Human Values 139, 149.

by it, lacking the sufficient intensity of harm to lodge a constitutional complaint (see Chapter 4). In other words, climate change is everywhere and nowhere, complicating the identification of victims or legitimate interests traditionally required in constitutional adjudication.[162]

Notwithstanding significant progress in the quality of scientific projections about climate impacts across regions, those impacts cannot be individualised for specific claimants with the level of granularity traditionally required in cases concerning rights violations. Science cannot predict, for example, that a specific individual or group will develop a particular illness or die as a consequence of more regular and severe heatwaves, or that their residences will be impacted by extreme weather events like cyclones or floods.[163] In that sense, the spatial reality of climate change raises issues of standing of individuals plaintiffs to bring constitutional claims before courts. Since climate change affects and/or has the potential to affect everyone, does that mean that anyone can bring a constitutional claim for the protection of her rights by the state? This question will be explored in detail in Chapter 4. It will discuss the way climate change conflicts with standing requirements demanding plaintiffs to prove that they are *individually* affected in a way that distinguishes them from the rest of society, as is the case in some jurisdictions.

A few examples help illustrate this tension. In Mexico, the Supreme Court considered a constitutional action filed by a group of young plaintiffs against a reform to the Electricity Industry Law, alleging that it would increase GHG emissions and thus violated their rights. In its reasoning,

[162] Ian R Curry, 'Establishing Climate Change Standing: A New Approach' (2019) 36 Pace Environmental Law Review 297, 303–4.
[163] Dmitrii Kochkov and others, 'Neural General Circulation Models for Weather and Climate' (2024) 632 Nature 1060; Massimo Bonavita, 'On Some Limitations of Current Machine Learning Weather Prediction Models' (2024) 51 Geophysical Research Letters e2023GL107377.

the court noted that the claimants did not have standing, as they were not in a position that differentiated them from the rest of society in relation to the foreseeable impacts of climate change. The court concluded that the plaintiff's young age was not a legally relevant criteria, but rather a simple fact, thus dismissing the lawsuit.[164] Similarly, the court in *Environnement Jeunesse* rejected a claim of potential discrimination against the youth, concluding that climate change affects the entire Canadian population and that even though 'young people will undoubtedly feel the impact more, it is only because they will be affected for a longer period of time'.[165] The Austrian Constitutional Court also rejected a claim brought by a group of over 8,000 people against legislation granting tax exemptions to air travel on similar grounds.[166] In New Zealand, the High Court considered a potential duty of the crown to protect the Māori against the consequences of climate change and concluded that:

> In this case, as I have indicated, there is no "real and identifiable" risk to the life of a specified individual or even a class of individuals. It is a general threat that may eventuate as a result of the effects of climate change to all New Zealanders.[167]

This quote and the above examples suggest that the collective impacts of climate change often conflict with the individualisation of injuries traditionally required in cases concerning rights enforcement in constitutional adjudication. Courts often posit that the wide-ranging consequences of climate change are not susceptible of consideration in relation to specific individuals in adjudication. This means that the reality of climate change does not fit easily into existing requirements of admissibility. This is another instance of the multiple ways in which the

[164] *Recurso de Queja 11/2022* [2022] Segunda Sala (Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)) [28–59].
[165] *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 82) para 43.
[166] *G 144-145/2020-13, V 332/2020-13* (n 151) paras 67–9.
[167] *Smith v Attorney General [2022] NZHC 1693* (n 84) para 193.

dual spatial nature of climate change challenges the traditional setting of constitutional adjudication. Humility helps courts navigate the tension between the collective nature of climate impacts and their potential consequences for specific individuals by encouraging them to acknowledge the inherent limitations of constitutional adjudication in fully addressing widespread harms. Courts can use humility to link individual rights to collective harms, ensuring that constitutional principles are upheld while respecting the broader systemic nature of climate impacts. This approach allows courts to balance the protection of individual rights with the recognition of the collective responsibility required to address climate change effectively.

7. The uncanny temporality of climate change

The temporality of climate change presents profound challenges for constitutional adjudication by stretching far beyond its traditional temporal scope. The operation of the law embodies a temporality,[168] usually confined to the past, the present, and the near-term future.[169] This determines the temporal *setting* of adjudication.[170] Constitutional courts only adjudicate disputes concerning events that have already occurred,[171] are presently occurring, or will imminently

[168] Richardson (n 71) 7.
[169] Jasanoff, 'A New Climate for Society' (n 66) 240.
[170] Here I borrow the idea of *setting* and *discontinuity* from Ghosh, which he employs to discuss the complexities climate change poses for literary thinking, in particular for its representation in novels. I believe that these concepts are also helpful to think about climate change in constitutional adjudication. See Amitav Ghosh, *The Great Derangement: Climate Change and the Unthinkable* (The University of Chicago Press 2017) pts 1, Ch 12-13.
[171] A caveat to the adjudication of constitutional disputes about past events relates to the idea of mootness. This idea, particularly prevalent in the US, generally entails that courts will not adjudicate a dispute when the issues presented have ceased to exist, meaning that the controversy is no longer alive. A recent discussion of the applications of mootness and its exceptions in the US can be found in Tyler B Lindley, 'The Constitutional Model of Mootness' (2023) 48 Brigham Young University Law Review 2151.

occur.[172] This short-term focus ensures *ripeness* and avoid premature adjudication,[173] as reflected in admissibility requirements of constitutional actions in many jurisdictions requiring plaintiffs to substantiate that their rights are 'presently' affected[174] or in 'real and immediate risk' of affectation.[175]

Climate change adds layers of complexity to the traditional temporal scope of constitutional adjudication by intertwining past, present, and future, in unprecedented ways. Current atmospheric concentrations of GHG are the result of cumulative historical emissions - particularly since the wake of the industrial revolution.[176] Additionally, given the average lifetime of different GHG in the atmosphere - spanning from a few weeks to thousands of years -[177] assessing the consequences of past, current, and future emissions demands consideration of a significantly large temporal field alien to the physiological times of humans,[178] and thus to legal thinking.[179]

Consequently, climate change forces courts to think about the *future* as an open-ended concept, stretching beyond the 'usual measures of time that inform human affairs'.[180] These large

[172] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 168.
[173] In the US context see: Gene Nichol, 'Ripeness and the Constitution' (1987) 54 University of Chicago Law Review 155, 161. More recently Michael Aaron DelGaudio, 'From Ripe to Rotten: An Examination of the Continued Utility of the Ripeness Doctrine in Light of the Modern Standing Doctrine' (2017) 50 Georgia Law Review 627.
[174] For example: *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 108.
[175] Among others, see: *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) paras 167–8.
[176] Intergovernmental Panel On Climate Change, *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (1st edn, Cambridge University Press 2023) 6.
[177] United States Environmental Protection Agency, 'Climate Change Indicators: Greenhouse Gases' (16 December 2015) <https://www.epa.gov/climate-indicators/greenhouse-gases> accessed 21 September 2023.
[178] Lazarus (n 60) 1174.
[179] Richardson (n 71) 6.
[180] Chakrabarty (n 86) 50. On this point, see also Charles Taylor, *Modern Social Imaginaries* (Duke University Press 2004) 187.

temporal fields are unprecedented in constitutional adjudication. Paraphrasing Ghosh, it is possible to affirm that *the longue durée* is not the territory of constitutional adjudication.[181] The temporality of climate change challenges the traditional *short-sightedness* - the prioritisation of the past and present and discounting of the future -[182] embedded in the operation of constitutional law by compelling courts to grapple with far-reaching temporal horizons, underscoring the need for a broader judicial perspective that accommodates the full arc of climate impacts over time.

The slow onset and far-reaching impacts of climate change which materialise over decades create a sense of temporal remoteness that complicates the application of traditional standards of adjudication. For example, in *Nature and Youth Norway*, when considering the potential impact of GHG emissions from new oil production licenses granted by the government on the rights of the claimants the Supreme Court concluded that 'the possible impact on the climate will be discernible in the more distant future. Although the climate threat is real, the decision does not involve, within the meaning of the ECHR, a "real and immediate" risk of loss of life for citizens in Norway'.[183] Similarly, in *KlimaSeniorinnen*, the Swiss Supreme Court concluded that the right to life of the applicants was not threatened 'to such an extent *at the present time* that one could speak of their own rights being affected' (emphasis added).[184]

[181] Ghosh (n 170) 59.
[182] Lazarus (n 60) 1174–6.
[183] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 168.
[184] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 83) s 5.4.

The 'present' determines the temporal scope of judicial thinking. That explains why, as in the examples above, courts often conclude that the impacts of climate change on the enjoyment of rights are not 'presently ascertainable',[185] even though the impacts of climate change are only visible over a timespan that exceeds the temporal scope of adjudication. This dissonance between the temporality of climate change and the traditional temporality of constitutional adjudication complicates the task of courts, particularly in rights-enforcement cases. Climate-related claims often require courts to assess the implications of present state actions on future rights enjoyment over multiple decades. This long-term focus is alien to most constitutional adjudication, where cause and effect typically occur within a more immediate and predictable timeline. As a result, courts are tasked with navigating a temporal horizon that challenges conventional legal doctrines and standards.[186]

Climate change therefore has an *uncanny*[187] temporality in which *past*, *present*, and *future*, converge inextricably. In other words, the intricate relationship between past, present, and future renders the temporality of climate change unsettling and disorienting, challenging conventional notions of time in adjudication. Understanding the full constitutional implications of climate change requires courts to engage with multiple temporal dimensions in a way that exceeds the temporality of constitutional adjudication.

[185] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 172; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) para 168; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 83) s 5.4.
[186] Rodríguez-Garavito (n 58) 37–8.
[187] I draw on the idea of the *uncanniness* of climate change as employed by Ghosh (n 170) 30.; see also Marshall (n 67) ch 18.

a) Irreversibility in the face of the short-sighted constitutional adjudication

One of the most striking features of climate change's temporality is its irreversibility. Once greenhouse gases are emitted, they persist in the atmosphere for decades to millennia,[188] triggering impacts that cannot be undone. As things stand, neither mitigation nor available means of capturing, removing, and storing GHG are capable of this. Nor are they able to prevent the future impacts of historical emissions - up to the present time - from materialising. Mitigation is only capable of preventing the further worsening of future climate conditions. As stated in the latest IPCC reports, it is nevertheless essential to *stabilise* atmospheric concentrations of GHG - at a much higher point compared to current levels - through the achievement of net zero global emissions in the second half of this century.[189] At the same time, adaptation measures can only partially alleviate climate impacts. According to the latest IPCC reports, there are *soft* and *hard*[190] limits to adaptation,[191] beyond which the negative consequences of climate change are simply *irreversible*.

[188] United States Environmental Protection Agency (n 177).

[189] IPCC (ed), 'Summary for Policymakers', *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) s C.11.

[190] According to the IPCC, 'Soft limits may change over time as additional adaptation options that are practicable or affordable become available. Hard limits will not change over time as no additional adaptive actions are possible.' Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 2444.

[191] Intergovernmental Panel on Climate Change (IPCC) (ed), 'Summary for Policymakers', *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 26 <https://www.cambridge.org/core/product/47A01B0C79829C95E896E3C0ACDE25BC>; Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (n 190) 1224.

This irreversible nature of climate impacts fundamentally challenges the traditional temporal framework of constitutional adjudication. Constitutional doctrines often demand that courts assess disputes based on immediate or imminent harm, which inadequately addresses the long-term risks posed by climate change. Courts are thus faced with a dilemma: how to reconcile the requirement for present harm with the reality that future climate impacts are already set into motion and, once materialized, cannot be undone. In this context, the irreversible nature of GHG emissions compels a forward-looking judicial perspective that incorporates the future consequences of present actions into adjudication.

The necessity of such a perspective becomes particularly evident in cases concerning rights enforcement. Relying on the standard approach of granting protection only after climate impacts have materialised would undermine the judiciary's role in safeguarding fundamental rights, rendering judicial intervention futile at a later stage. The irreversible nature of climate impacts thus requires courts to anticipate the future consequences of climate change into their assessment of present state action in constitutional adjudication. This line of reasoning has been followed by some courts.[192] For example, in *Neubauer*, the irreversible impacts of GHG emissions led the German Constitutional Court to interpret the admissibility requirement of 'present affectation' to allow plaintiffs to seek preventive judicial intervention with respect to future climate impacts. In the words of the court:

> Since future impairments of fundamental rights could potentially be set into irreversible motion today, and given that lodging a constitutional complaint to address the ensuing restrictions on freedom might be futile by the time the impairments have arisen, the

[192] See, among others: *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) paras 130, 185–7; *Friends of the Irish Environment v. Ireland [2020] IESC 49* (n 91) para 3.7. Similar arguments were expressed by Judge Station in her dissent to the decision in *Juliana.* See *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 45.

> complainants already have standing to lodge a constitutional complaint at the present time.[193]

This approach exemplifies how courts can adapt traditional doctrines to account for the intertemporal dimensions of climate change. By acknowledging the irreversible consequences of present emissions, courts can ensure that constitutional principles are not rendered ineffective by the temporal gaps between cause and effect. This can therefore be seen as an example in *doctrinal humility*.

Incorporating the irreversibility of climate change into constitutional adjudication requires both epistemic and doctrinal humility. Epistemic humility urges courts to recognize the inherent uncertainty and complexity of projecting future climate impacts while using the best available scientific evidence to inform their decisions. For example, epistemic humility can instruct courts to acknowledge that although climate impacts materialise in the future, they result from present GHG emissions whose impacts are irreversible once released into the atmosphere. Doctrinal humility, on the other hand, requires courts to adapt existing doctrines, such as standing requirements, in order to reflect the temporality of climate change. By doing so, courts can be receptive to future climate harms while upholding the purpose of constitutional norms of rights protection.

In sum, the irreversible nature of climate impacts demands courts to bridge the gap between present state action and future impacts. Humility serves as a critical tool in this

[193] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 130. The quote is taken from the English translation of the judgment on the court's website, available at: https://www.bundesverfassungsgericht.de/SharedDocs/Entscheidungen/EN/2021/03/rs20210324_1bvr265618en.html [accessed 29-05-2024].

endeavor, enabling courts to engage actively with the intertemporal challenges of climate change while maintaining constitutional coherence and legitimacy.

b) Redressing irreversible climate impacts

The *uncanny temporality* of climate change also bears significance for the way we think about remedies and redressability in constitutional adjudication. Since the full impacts of any amount of GHG emissions are only discernible in the future, the traditional constitutional mindset deems it necessary for its consequences to fully materialise before potential victims can seek redressal in adjudication - as shown by the examples discussed above. Unfortunately, climate change is not *redressable* in a traditional sense, as it is impossible to bring climate patterns back to any previous state, not even by an exiguous amount. As explained above, there are significant limitations to the ability of mitigation and adaptation measures to redress or even alleviate the impacts of climate change.

The irreversible character of climate impacts can also be interpreted as a deterrent of judicial intervention in relation to climate change, as it challenges change the notion that courts can provide meaningful remedies for impacts that have already materialised or set into irreversible motion. Most constitutional climate disputes revolve around *mitigation*, thus aimed at reducing future GHG emissions[194] rather than reversing existing harms. Yet, thinking about remedies in relation to mitigation is far from straightforward. Whatever measures are implemented now to alleviate the consequences of climate change by reducing GHG emissions

[194] UN United Nations Environment Programme, 'Mitigation' (*UNEP - UN Environment Programme*, 14 September 2017) <http://www.unep.org/explore-topics/climate-action/what-we-do/mitigation> accessed 21 September 2023.

will not have immediate effects but will only be yield benefits after decades at best. Redressability is thus puzzling in climate cases, as remedies would be aimed at reducing the risk, and preventing the worsening of, climate impacts, rather than at alleviating the current disruption of climate patterns or the situation of specific claimants - which are, once again, irreversible. This creates a fundamental tension between the expectations of claimants and the traditional judicial framework for assessing redressability.

The reasoning of the Court of Appeals in *Juliana* highlights this tension. In this case, the plaintiffs sought remedies compelling the government to phase out fossil fuels and 'draw down harmful emissions'.[195] However, the court noted that even the complete elimination of the challenged government programs would not suffice to halt 'catastrophic' climate change or significantly ameliorate the plaintiffs' injuries. As the court observed:

> As an initial matter, we note that although the plaintiffs (…) challenge only affirmative activities by the government, an order simply enjoining those activities will not, according to their own experts' opinions, suffice to stop catastrophic climate change or even ameliorate their injuries. (…) they do not show that even the total elimination of the challenged programs would halt the growth of carbon dioxide levels in the atmosphere, let alone decrease that growth. Nor does any expert contend that elimination of the challenged pro-carbon fuels programs would by itself prevent further injury to the plaintiffs. Rather, the record shows that many of the emissions causing climate change happened decades ago or come from foreign and non-governmental sources.[196]

The above quote reveals a mismatch between the expectations of claimants and the traditional mindset of constitutional courts in relation to remedies. On the one hand, claimants seek to prevent the risk of future climate impacts through ambitious court-mandated mitigation measures. On the other hand, in rights-enforcement cases, constitutional courts generally assess

[195] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 1170.
[196] *ibid 1170.*

redressability by considering the plaintiff's alleged injuries to then determine the potential effectiveness of court action to directly remediate such affectations.[197]

The reasoning of the Court in *Juliana* suggests that the assessment of redressability is not easy in relation to climate change. The current disruption of climate patterns is a result of historical emissions, and in that sense is not susceptible of redressal. Thus, courts might be wary about ordering remedies that cannot help the situation of the claimants in the foreseeable future but only reduce the risk of further injuries in the long term by a small margin (see Chapter 6). The irreversible impacts of emissions may be seen as a double-edged sword. If courts are seeking to *prevent* the further worsening of climate impacts, such irreversibility may be a reason to anticipate the future impacts of current emissions into their assessment of state climate action at present. Conversely, if courts aim to *redress* existing climate-related harms - as often required by standing requirements - irreversibility might raise doubts concerning the effectiveness and necessity of judicial interventions.

The challenges of redressing irreversible climate impacts highlight the necessity of humility, which enables courts to acknowledge the limitations of their remedial capacity while still engaging meaningfully with the constitutional implications of state (in)action. First, epistemic humility reminds courts of the inherent uncertainty in projecting the long-term effectiveness of mitigation measures. It urges them to rely on the best available evidence while remaining cautious about contemplating outcomes that lie decades into the future.

[197] Kent Roach, *Remedies for Human Rights Violations: A Two-Track Approach to Supra-National and National Law* (Cambridge University Press 2021) 74.

Second, doctrinal humility allows courts to adapt traditional notions of redressability to align with the unique temporal challenges of climate change. Rather than relying exclusively on the absence of immediate, tangible remedies, courts can reinterpret redressability to include measures aimed at reducing future risks and preventing the worsening of harms (see Chapter 5). This approach broadens the scope of judicial intervention while respecting the boundaries of constitutional adjudication.

Lastly, institutional humility guides courts in crafting remedies that complement broader governance efforts and reduce the risks of counterproductive judicial interventions. By recognising that judicial action alone cannot reverse climate harms, humility encourages courts to design remedies that grant sufficient leeway to the political branches branches (see Chapter 6). By embracing humility, courts can navigate the complex landscape of climate redressability, ensuring their interventions are principled, forward-looking, and aligned with constitutional values.

c) Urgency v dynamism

The uncanny temporality of climate change presents unique challenges even when courts incorporate future climate impacts into their assessment of present disputes. Given that the consequences of present emissions on future climate conditions are *irreversible*, the timing of climate action is of the essence.[198] Addressing climate change is therefore *urgent*. But how urgent? Courts have grappled with this question in many cases. For instance, in Colombia, the

[198] *Friends of the Irish Environment v. Ireland [2020] IESC 49* (n 91) para 3.7.

Supreme Court took urgency into consideration to determine the strict deadlines given to the government to implement measures aimed at reducing deforestation of the Amazon rainforest, the main source of Colombia's GHG emissions.[199] Similar considerations of urgency have been discussed by the Austrian Constitutional Court.[200] Broadly speaking, urgency entails a demand for swift state action to prevent the irreversible consequences of climate change.

Nevertheless, climate change is also inherently dynamic. After all, it is about the *change* in the physical patterns of the earth's climate in the *future*. Such dynamism entails that our appraisal of the full extent of its implications is a never-ending task. For example, the current scientific consensus at the level of the IPCC suggests that in addition to the warming trend dominated by anthropogenic GHG emissions into the atmosphere, there are significant feedback loops associated with physical, biogeophysical and biogeochemical processes that can slow down or accelerate the resulting temperature rise.[201] In other words, climate change is not just a result of how much GHG emissions we put into the atmosphere but also of how the earth's processes react to such atmospheric concentrations, worsening or alleviating its consequences. This situation adds a layer of non-linear complexity to the relationship between emissions and future changes in climate patterns.[202] Dynamism challenges the ability of courts to set definitive

[199] *Sentencia STC4360-2018* (n 82) 48–50.
[200] *G 144-145/2020-13, V 332/2020-13* (n 151) para 35.
[201] The latest scientific consensus around climate feedbacks can be found in Intergovernmental Panel on Climate Change (IPCC) (ed), 'The Earth's Energy Budget, Climate Feedbacks and Climate Sensitivity', *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) s 7.4.
[202] The implications of this non-linearity for the way we frame human rights violations stemming from climate change have been recently discussed in Rodríguez-Garavito (n 58) 38.

timelines for climate action, as the full extent of climate change's implications remains an evolving and uncertain reality.

The dynamism of climate change often undermines the urgency and strictness of climate measures in the assessment of courts. Courts often evaluate the adequacy of existing climate legislation in order to determine whether the state is fulfilling its obligations to protect the rights of its citizens. However, climate goals are often set around multidecadal plans that are susceptible of constant subsequent adjustments depending on new scientific, political, and economic realities[203]. For instance, technological advancements, such as carbon capture and storage, might accelerate emissions reductions in the future, influencing the feasibility and trajectory of achieving net-zero targets.[204] Another example can be found in the war in Ukraine, which has disrupted energy transition plans and climate policy writ large for many countries.[205] This evolving context creates tension for courts, as assessing present actions in light of future targets becomes a complex and speculative exercise.

This situation has led courts to employ more flexible standards of review of climate legislation, understanding that it can be adjusted or implemented in the future to comply with,

[203] The latest summary and evaluation of existing climate goals and plans can be found in United Nations Environment Programme, 'Emissions Gap Report 2023: Broken Record – Temperatures Hit New Highs, yet World Fails to Cut Emissions (Again).' (2023) ch 3 <https://doi.org/10.59117/20.500.11822/43922.> accessed 3 May 2024.
[204] The IPCC has stated in a recent report that 'The deployment of carbon dioxide removal (CDR) to counterbalance hard-to-abate residual emissions is unavoidable if net zero CO2 or GHG emissions are to be achieved'. See IPCC (n 189) 36.
[205] See, for example, Hugo Rojas-Romagosa, 'Medium-Term Macroeconomic Effects of Russia's War in Ukraine and How It Affects Energy Security and Global Emission Targets' WP/24/39 <https://www.imf.org/en/Publications/WP/Issues/2024/03/01/Medium-term-Macroeconomic-Effects-of-Russias-War-in-Ukraine-and-How-it-Affects-Energy-544043> accessed 7 January 2025; Miguel Á Martínez-García, Carmen Ramos-Carvajal and Ángeles Cámara, 'Consequences of the Energy Measures Derived from the War in Ukraine on the Level of Prices of EU Countries' (2023) 86 Resources Policy 104114.

for example, the long-term temperature goal (LTTG) of the Paris Agreement. This flexibility acknowledges the dynamism of climate change and allows political branches to revise policies as new information emerges. In *Neubauer,* when assessing a potential violation of the state's duties of protection arising from the right to life and physical integrity, the court concluded that:

> any violation of the duty of protection arising from Art. 2(2) first sentence GG is already ruled out by the fact that the national climate action instruments can still be adjusted in ways that would enable the reduction target specified for 2030 to be achieved.[206]

The time horizon necessary to achieve the societal transformations envisaged by government plans calls into question the rigidity of judicial decisions in relation to climate change, underscoring the need for humility. In particular, institutional humility urges courts to grant flexibility for the branches to determine the *speed* and *intensity* climate action over time. By granting flexibility to political powers, courts can facilitate collaboration and iterative policy development, ensuring that climate governance remains adaptable to evolving conditions. This approach not only respects the separation of powers but also reduces the risks of judicial overreach in the face of highly polycentric and uncertain issues.[207] By embracing humility, courts can navigate the intricate interplay of urgency and dynamism, ensuring that their interventions are both timely and adaptable. This perspective reinforces the judiciary's role as a constructive participant in climate governance, fostering decisions that align with the evolving nature of climate action and its constitutional implications.

d) Scientific representations of future climate change

[206] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 170.
[207] King (n 68) 209.

Constitutional climate cases can be understood as *sites of translation*[208], in the sense that courts translate scientific inputs concerning the reality of climate change into relevant evidence for the application of constitutional frameworks. For instance, they use scientific reports to frame climate change as a problem of multilevel governance,[209] to establish causal chains linking state actions to climate impacts for specific individuals,[210] or to determine what aspects of climate legislation are to be left to the political branches.[211] In all of these example, courts are required to ascribe value and authority to multiple - and often competing - sources of evidence.[212] Yet, the temporality of climate change complicates this task by casting doubt on the reliability of science in the adjudication of climate disputes.

The *uncanny temporality* of climate change imposes structural limitations for our scientific understanding of its implications. Climate models address such limitations to provide rigorous representations of the earth's climate. However, the quality and accuracy of projections made by models is highly dependent on the quality of the underpinning data, as well as the assumptions and values of the model creators.[213] Hence, they are not to be treated as 'truth' or 'answer

[208] I borrow the idea of sites of translation in adjudication from Jasanoff. See Jasanoff, 'Science, Common Sense & Judicial Power in U.S. Courts' (n 9) 15.
[209] SCC (n 43) para 12.
[210] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 12) 1169.
[211] *Mathur v. Ontario, 2023 ONSC 2316* (n 12) paras 107–12.
[212] Silvio O Funtowicz and Jerome R Ravetz, 'Science for the Post-Normal Age' (1993) 25 Futures: the journal of policy, planning and futures studies 739, 743.
[213] Hulme (n 10) 77.

machines' in constitutional adjudication.[214] Understanding the limitations of the evidence presented before courts is essential to determine the legal consequences of climate change.[215]

The limited scientific understanding of climate change poses challenges for its treatment in constitutional adjudication, given the high value ascribed to stability and certainty of the evidentiary basis indispensable for the application of the law.[216] In the words of Latour: 'Science can tolerate gaps, but the law has to be seamless. Science can draw on lively controversy, but the law has to restore an equilibrium'.[217] Addressing this conundrum is often an important part of the courts' task in constitutional climate cases. Courts routinely engage in factual disputes that involve scientific evidence. Yet, the exercise of this traditional 'ontological power'[218] of courts is significantly more complex in cases about climate change.

Scientific evidence is particularly relevant and often contested in cases concerning the enforcement of constitutional rights, specifically when plaintiffs claim that the (in)action of the state constitutes a violation of their rights in light of climate impacts they currently suffer or will suffer in the future. In such cases - explored in Chapter 5 - courts often encounter gaps between the scientific evidence presented before them and the evidentiary needs of traditional standards of adjudication to declare such violations. For example, when determining whether grating oil

[214] An in-depth discussion of the value of computational models and the problems associated with its interpretation in law and policy can be found in Wendy Wagner, Elizabeth Fisher and Pasky Pascual, 'Misunderstanding Models in Environmental and Public Health Regulation' (2010) 18 New York University environmental law journal 293. cited in Fisher, Scotford and Barritt (n 50) 179. See also: Elizabeth Fisher, Pasky Pascual and Wendy Wagner, 'Understanding Environmental Models in Their Legal and Regulatory Context' (2010) 22 Journal of environmental law 251, 266.
[215] Jasanoff, 'Technologies of Humility' (n 1).
[216] Fisher, Scotford and Barritt (n 50) 179.
[217] Bruno Latour, *The Making of Law : An Ethnography of the Conseil d'Etat* (Polity 2010) 243, cited in Fisher, Scotford and Barritt (n 50) 176.
[218] Jasanoff, 'Science, Common Sense & Judicial Power in U.S. Courts' (n 9) 16–7.

licenses would pose a 'real and immediate' risk to the right to life of the plaintiffs under article 2 of the ECHR, the Norwegian Supreme Court stated:

> There is no doubt that the consequences of climate change in Norway may lead to loss of human lives, for instance through floods or landslides. The question is yet whether there is an adequate link between production licenses (…) and possible loss of human lives, which would meet the requirement of "real and immediate" risk.
>
> In my view, the answer is no. First, it is uncertain whether (…) the decision will actually lead to greenhouse gas emissions. Second, the possible impact on the climate will be discernible in the more distant future. Although the climate threat is real, the decision does not involve, within the meaning of the ECHR, a "real and immediate" risk of loss of life for citizens in Norway.[219]

This example underscores the role of uncertainty in the assessment of potential violations of rights stemming from activities generating GHG emissions. To declare a 'real and immediate' risk on rights in this case, the court required to establish a double causal link: i) between the granting of oil licenses and the emission of GHG into the atmosphere; and ii) between the emissions potentially generate as a result of the oil licenses and imminent losses of human lives in Norway. The court found that neither i) or ii) could be established. In other words, the Norwegian Court was reluctant to identify a 'real and immediate' risk on rights because the causation links were tenuous and the risks were, in its opinion, too uncertain to be real. Similar conclusions have been reached by the German Constitutional Court in relation to potential violations of the rights to health[220] and to property;[221] and by the Federal Supreme Court of Switzerland regarding the rights of the applicants in *KlimaSeniorinnen.*[222]

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[219] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 12) paras 167–8.
[220] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 166.
[221] ibid 172.
[222] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 83) s 5.4.

In cases concerning rights enforcement, courts often hesitate to declare violations of rights in relation to the *present* or *immediate* consequences of climate change. This is further aggravated by the fact that scientific evidence linking anthropogenic climate change to climate impacts - the causal link ii) in our example above - varies significantly. Ironically, the evidence of human interference is limited for weather events with the most salient and visible consequences for fundamental rights (e.g. tropical cyclones, floods, hurricanes, etc),[223] while scientific evidence is significantly clearer and more abundant to establish causation of events with considerable but perhaps less visible or individualisable consequences for fundamental rights (heatwaves, droughts, sea-level rise etc).[224] This situation adds to the existing challenges facing courts in cases concerning rights enforcement in relation to climate impacts.

Notwithstanding the difficulties surrounding the link between climate impacts and current rights violations in constitutional adjudication, factual disputes are not pervasive in constitutional climate cases. As explored in Chapter 5, many constitutional climate cases revolve around future climate impacts, seeking to uphold the responsibility of the state in the mitigation of, and adaptation to, climate change. The legal dispute in those cases revolves around the prevention of *future irreversible* impacts, rather than on the attribution of responsibility for *current* violation of rights. This means that parties in such cases do not disagree so much about the general reality of climate change but rather about its implications for the fulfilment of states' duties of protection

[223] See, for example: Jeane Camelo, Talea L Mayo and Ethan D Gutmann, 'Projected Climate Change Impacts on Hurricane Storm Surge Inundation in the Coastal United States' (2020) 6 Frontiers in Built Environment; Thomas Knutson and others, 'Tropical Cyclones and Climate Change Assessment: Part II: Projected Response to Anthropogenic Warming' (2020) 101 Bulletin of the American Meteorological Society E303.
[224] Rupert F Stuart-Smith and others, 'Filling the Evidentiary Gap in Climate Litigation' (2021) 11 Nature climate change 651, 652.

stemming from positive rights.[225] Cases like *Do-Hyun Kim*[226] and *Neubauer*[227] are framed in this way.

Overall, it seems clear that the 'irredeemable uncertainty'[228] that pervades our scientific knowledge around climate change poses significant challenges for the appraisal of its legal consequences in constitutional adjudication. Some of these challenges stem from gaps between what science can offer and what the law requires, particularly in cases concerning rights enforcement. Yet sometimes this apparent mismatch is caused by a misunderstanding of the role of science in adjudication, conflating what science says is *possible* with what is *legally* or *constitutionally required*. In this context, epistemic humility urges courts to make active use of scientific information while recognising its limitations. Humility instructs courts to approach scientific evidence not as a definitive answer but as a tool to inform their constitutional reasoning. Through a humble approach, courts can use scientific insights to guide principled decisions that address the constitutional implications of climate change while remaining sensitive to the complexities and uncertainties inherent in climate governance.

8. Conclusion

This chapter has made the case that specific attributes of the legal nature of climate change—its multivalence, polycentricity, spatiality, and temporality— fundamentally challenge the way

[225] Stephen Gardbaum, 'Chapter 21: The Structure and Scope of Constitutional Rights' in Tom Ginsburg and Rosalind Dixon (eds), *Comparative Constitutional Law* (Edward Elgar Publishing 2011); Robert Alexy, 'On Constitutional Rights to Protection' (2009) 3 Legisprudence 1.
[226] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 12).
[227] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12).
[228] Jasanoff, 'Technologies of Humility' (n 1) 33.

constitutional norms are interpreted and applied in climate cases. These attributes introduce layers of complexity that expose the limitations of existing doctrines and judicial capacities to capture the constitutional implications of climate change.

In this context, humility emerges as an indispensable guiding principle for constitutional courts. Humility enables courts to acknowledge the intricate legal nature of climate change and provides them with a robust path to adapt their conceptual repertoire in response to the challenges described in this chapter. By recognizing the limits of their institutional, doctrinal, and epistemic capacities, courts can craft legal interpretations and remedies that are both principled and pragmatic. As indicated above, humility is not a call for judicial passivity or deference; rather, it is a framework for active and conscientious engagement with the novel realities posed by climate change, while leaving space for the political branches to address aspects of climate governance that lie beyond the judiciary's scope.

Each attribute of climate change underscores the necessity of humility in different ways. The multivalence of climate change calls on courts to embrace the multiplicity of narratives and perspectives, ensuring that their decisions reflect the full scope of its constitutional significance. Polycentricity highlights the need for courts to consider the intricate web of relationships and trade-offs inherent in climate governance. Spatiality demands a cautious expansion of interpretive boundaries to reconcile global causes and local impacts, while temporality pushes courts to engage with far-reaching horizons that stretch beyond conventional legal thinking.

By adopting humility, courts can navigate these complexities with care and precision. They can balance the need for immediate judicial intervention with the recognition of their

institutional limits, allowing political branches to play their complementary roles in addressing the systemic challenges of climate change. At the same time, humility empowers courts to articulate constitutional values that provide a stable foundation for long-term climate governance, ensuring that their decisions remain relevant and impactful in the face of an evolving crisis.

It is worth noting that in this chapter I studied the attributes of the legal nature of climate change separately, aiming to provide the reader with a detailed understanding of its multi-faceted legal nature. Nevertheless, the features of climate change discussed above often overlap and synergize with each other, exacerbating the resistances they oppose to the role of courts in adjudication. For example, the uncertainty regarding individual impacts of climate change is made even more taxing for courts when those impacts are only likely to take place in the distant future and in no clearly delimited place - e.g. heatwaves taking place in multiple regions within a country.

At the same time, it is possible to identify certain features of climate change that are more challenging for some areas of constitutional adjudication than others. The degree to which they conflict with traditional understandings varies across institutions and concepts of constitutional law. For example, the temporal dimension of climate change is particularly relevant for cases of rights enforcement, but not for cases concerning jurisdictional disputes between national and subnational governments, as constitutional competences are typically *atemporal*, except during times of emergency.[229] In jurisdictional disputes, the spatial dimension of climate change is more impactful, as anticipated above. This is why chapters 2-6 present an in-depth analysis of the

[229] Jocelyn Stacey, 'The Public Law Paradoxes of Climate Emergency Declarations' (2022) 11 TEL 291.

extent to which the legal nature of climate change is disruptive for specific institutions of constitutional law. Each chapter aims to determine the legal contours of climate change in relation to a subset of cases, facilitating the identification of specific tensions that arise as a result of the legal nature of climate change, as well as the role of humility in helping courts navigate such tensions.

Furthermore, the disruption caused by climate change in constitutional adjudication is often contingent on existing legal frameworks, doctrines, and practices in each jurisdiction. For example, the admissibility requirement demanding claimants to substantiate that they are affected in a way that differentiates them from the rest of society is usually employed in Mexico,[230] while it was explicitly disregarded by the German Constitutional Court in *Neubauer.*[231] Thus, the extent to which the legal nature of climate change hampers the task of courts will naturally vary across jurisdictions. Nevertheless, the use of cases from a wide range of jurisdictions in this chapter attest to the global significance of the legal nature of climate change in constitutional adjudication. Given the relative novelty of climate change in constitutional adjudication - all cases have taken place in the last decade - and the increasing worsening of climate conditions, it seems reasonable to expect that the number of cases raising similar legal debates will only rise in the future.

This chapter has laid the conceptual groundwork for understanding how constitutional courts can navigate the legal implications of climate change through humility. . Additionally, it

[230] *Recurso de Queja 11/2022* (n 164).
[231] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 12) para 110.

provides the reader with a vocabulary to think about the presence of climate change in constitutional adjudication. The subsequent chapters will build on this foundation, examining how humility informs the adjudication of specific legal questions across jurisdictions. Together, they aim to illustrate how constitutional courts, through a humble and principled approach, can play a significant role in the legal transition triggered by climate change.

Chapter 2. Vertical Allocation of Power around Climate Governance

1. Introduction

Having laid out the analytical framework of this thesis, this chapter is the first to elaborate on the use of humility to navigate the challenges of the legal nature of climate change for specific areas of constitutional adjudication. It focuses on constitutional questions concerning the vertical allocation of public power in relation to climate change. That is to say, it will discuss the constitutional roles of national and subnational governments in climate governance.

Given the scale of climate change, defining the scope of government action at every level is crucial to facilitate effective climate action domestically and internationally. Yet, climate change poses unique challenges for the vertical allocation of power between national and subnational governments. Its polycentric and spatial dimensions often blur the boundaries of constitutional authority, complicating the interpretation and application of constitutional rules of allocation. The intertwined nature of climate governance requires coordination across levels of government, yet also demands flexibility to accommodate the specific needs and capacities of subnational actors, particularly in light of the locally differentiated of climate change as explored in Chapter 1. In this context, as courts are called upon to resolve jurisrdictional disputes reflecting tensions between central authority and decentralized action.

The lack of clarity over the competences of national and subnational governments to address climate change gives rise to constitutional disputes in which each level asserts its constitutional authority. On the one hand, national governments affirm their exclusive role in the

planning of climate action domestically[1] and internationally,[2] often restricting the scope of action of subnational governments. On the other hand, subnational authorities feel entitled to address the local causes and impacts of climate change.[3] They assert their constitutional authority to be part of the governance of climate change in use of their constitutional competences to regulate certain matters - e.g., land-use, environmental protection, public health. However, subnational climate regulations are often challenged for overstepping their constitutional role, allegedly undermining the coordination and uniformity required for the effectiveness of national climate action.[4] Constitutional courts are thus called upon to adjudicate on the differing degrees of autonomy enjoyed by national and subnational governments in a context where the boundaries of their authority are obscured by the legal nature of climate change.

This chapter further explores the role of humility as a guiding principle for constitutional courts in navigating these jurisdictional disputes. Humility encourages courts to acknowledge the interconnected nature of governance responsibilities and the limitations of existing constitutional doctrines to reflect the systemic and multiscalar nature of climate governance when allocating authority to national and subnational governments. It instructs courts to establish frameworks for climate governance that respect the constitutional roles of both national and subnational

[1] *Vanderstock v Victoria [2023] HCA 30* (High Court of Australia); SCC, 'Reference Re Greenhouse Gas Pollution Pricing Act'.
[2] *STC 87/2019* (Tribunal Constitucional de España (Spanish Constitutional Court)); *United States of America v State of California et al* [2020] United States District Court of the Eastern District of California No. 2:19-cv-02142 WBS EFB.
[3] SCC (n 1); *STC 87/2019* (n 2); *Vanderstock v Victoria [2023] HCA 30* (n 1).
[4] *Amparo en Revisión 888/2018* [2020] Alberto Pérez Dayán (Suprema Corte de Justicia de la Nación (Segunda Sala) (Mexican Supreme Court)); *STC 87/2019* (n 2); *Vanderstock v Victoria [2023] HCA 30* (n 1).

governments in light of the ambivalent spatiality of climate change, promoting collaboration to achieve shared climate goals.

This chapter will start by discussing the role of the state in the governance of climate change, given its characterisation as a collective action problem and its legal nature in the terms explored in Chapter 1. Then, I will analyse six judgments concerning the constitutional authority of national and subnational governments to address climate change. Firstly, I will discuss an example of judicial review of national legislation as a result of a challenge filed by subnational governments in Canada.[5] This case will illuminate the legal debates posed by climate change for the way constitutional courts rule on the boundaries of subnational and national governments in relation to climate legislation. In particular, this case will reveal that the polycentricity of climate change complicates the role of courts when identifying the main thrust of climate measures in order to determine whether national or subnational authorities are constitutionally competent to adopt them.

Secondly, I will explore four cases of judicial review of subnational climate legislation. These cases concern subnational taxes in Mexico[6] and Australia,[7] subnational climate goals in Spain,[8] and climate initiatives in partnership with foreign subnational governments in the United States.[9] These legislative measures are challenged by national governments and other actors for interfering with areas traditionally reserved to national governments in comparative

[5] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* [2021] CJ Wagner (Supreme Court of Canada).
[6] *Amparo en Revisión 888/2018.* (n 4).
[7] *Vanderstock v Victoria [2023] HCA 30* (n 1).
[8] *STC 87/2019* (n 2).
[9] *United States of America v. State of California et al.* (n 2).

constitutional law - e.g., economic planning, foreign affairs, energy policy. Constitutional courts are required to determine whether specific measures can be considered strictly *environmental* – thus within the remit of subnational governments - or whether they substantially touch upon policy areas reserved to the national government. Yet, such determination is significantly complicated by the legal nature of climate change, as its polycentricity creates inevitable overlap between policy areas.

Finally, I will analyse a case from Germany concerning the differing constitutional obligations of national and subnational governments to protect constitutional rights from the negative consequences of climate change.[10] It will illustrate the flip side of the limited autonomy of subnational governments to enact climate legislation: their concomitant limited responsibility to protect citizens from climate change. This case reflects existing difficulties to identify standards of accountability suitable for subnational governments, given their restricted competences in climate policy compared to their national counterparts.

2. The Role of the State in the Multilevel Governance of Climate Change

a) Climate as a collective action problem

Climate change has been repeatedly characterised as a 'collective action problem',[11] which refers to 'settings where decisions about costly actions are made independently but outcomes jointly

[10] *BvR 1565/21/1, BvR 1566/21/1, BvR 1669/21/1, BvR 1936/21/1, BvR 2574/21/1, BvR 2575/21/1, BvR 2054/21/1, BvR 2055/21/1, BvR 2056/21/1, BvR 2057/21/1, BvR 2058/21/1 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* [2022] First Senate.

[11] Elinor Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change' (2010) 20 Global Environmental Change 550; Steven R Brechin, 'Climate Change Mitigation and the Collective Action Problem: Exploring Country Differences in Greenhouse Gas Contributions' (2016) 31 Sociological Forum.

affect everyone involved'.[12] In other words, climate change affects everyone everywhere, but participants - states, companies, individuals - contribute to it independently. This framing underscores a dilemma: participants choose between pursuing benefits for themselves while aggravating the collective outcome, or giving up some of their benefits in order to improve the collective situation, often without any assurance that other participants will reciprocate. Traditional theory of collective action predicts without external binding regulations, participants are unlikely to cooperate effectively, resulting in suboptimal outcomes.[13]

This dilemma is particularly acute in the context of climate change due to its polycentricity and spatiality. GHG emissions stem from a wide variety of sources, and their impacts are dispersed globally while varying significantly at the local level.[14] This disconnect between localized actions and global consequences complicates efforts to align individual and collective interests. Historically, approaches to climate governance have tended to focus on top-down solutions that underscore the importance of international multilateralism as the most appropriate device to face climate change, emphasising its global character.[15] This approach has resulted in the adoption of foundational agreements like the United Nations Framework Convention on Climate Change (UNFCCC) of 1992, the Kyoto Protocol of 1997, and the Paris

[12] Ostrom (n 11) 551.
[13] ibid.
[14] ibid 550.
[15] Marcel J Dorsch and Christian Flachsland, 'A Polycentric Approach to Global Climate Governance' (2017) 17 Global Environmental Politics 45, 46.

Agreement of 2015[16] – the latter marking a shift of paradigm by combining top-down and bottom-up elements.[17]

In this framework of international climate governance, the nation-state is seen as the key actor, exclusively representing its territory and population vis-à-vis the outside world.[18] This is consistent with constitutional understandings concerning the role of states - represented by national governments - in foreign affairs. As aptly noted by Michelmann, 'foreign policy has traditionally been considered the constitutional responsibility of the national government'.[19] This generalised practice in comparative constitutional law reflects the need to represent a country's collective interests in a 'common front' towards the international community.[20] The global nature of climate change, together with its characterisation as a collective action problem, has led national governments to assume leadership in driving domestic and international climate action.[21]

[16] The Paris Agreement has been classified by some commentators on international climate politics as a 'hybrid system', underscoring its departure from the traditional approach of climate multilateralism characterised by binding top-down regulation. Analyses of the Paris Agreement in light of its combination of top-down and bottom-up elements can be found in Robert Falkner, 'The Paris Agreement and the New Logic of International Climate Politics' (2016) 92 International Affairs 1107; Robert O Keohane and Michael Oppenheimer, 'Paris: Beyond the Climate Dead End through Pledge and Review?' (2016) 4 Politics and governance 142; Jorge Viñuales, 'The Paris Agreement on Climate Change: Less Is More' (2017) 59 German Yearbook of International Law. An overview of international climate multilateralism since the adoption of the UNFCCC can be found in Jonathan Kuyper, Heike Schroeder and Björn-Ola Linnér, 'The Evolution of the UNFCCC' (2018) 43 Annual Review of Environment and Resources 343.

[17] As noted by Lin, the Paris Agreement recognizes the multilevel nature of climate governance by engaging all levels of government in the achievement of its goals. In that sense, the effectiveness of the Paris Agreement depends on its implementation by national and subnational actors. See Jolene Lin, 'The Role of Subnational Actors in Transnational Climate Change Law' in Veerle Heyvaert and Leslie-Anne Duvic-Paoli (eds), *Research Handbook on Transnational Environmental Law* (Edward Elgar Publishing 2020) 217.

[18] Dorsch and Flachsland (n 15) 46; LJ Lundqvist, 'A Green Fist in a Velvet Glove: The Ecological State and Sustainable Development' (2001) 10 Environmental values 455, 457.

[19] Hans Michelmann, *Foreign Relations in Federal Countries* (McGill-Queen's University Press 2009) 3.

[20] ibid.

[21] Dorsch and Flachsland (n 15) 46.

Nevertheless, national governments alone cannot address the multilevel implications of climate change, as they are 'too big to deal with local ecological problems and too small to deal with global ones'.[22] Subnational governments are uniquely positioned to address *site-specific*[23] climate impacts and balance them against other local governance needs, often acting more swiftly than national frameworks.[24] In other words, the spatiality of climate change undermines the suitability of international multilateralism as an exhaustive mechanism of climate governance[25] and prompts subnational governments to 'heed their constitutional calling' and act within their jurisdiction.[26]

In response to these challenges, several commentators have advocated for polycentric approaches that reflect the multilevel needs of climate governance.[27] This means that actors with overlapping jurisdictions at multiple levels - international, national, subnational - act as independent but complementary decision makers in the governance of climate change.[28] This approach recognizes the necessity of multilevel action to tackle the diverse drivers and impacts of climate change. For instance, subnational governments can complement national efforts by focusing on specific sectors such as urban transport and land-use planning, which fall within their

[22] Robyn Eckersley, *The Green State: Rethinking Democracy and Sovereignty* (MIT Press 2004) 6.
[23] This term is borrowed from Dorsch and Flachsland. Its implications for a polycentric approach to global climate governance can be found in Dorsch and Flachsland (n 15) 53–5.
[24] Lael K Weis, 'Vanderstock v Victoria: Fiscal Federalism Meets Environmental Constitutionalism?' (2024) 36 Journal of Environmental Law 253, 261.
[25] William W Buzbee, 'Federalism Hedging, Entrenchment, and the Climate Challenge' (2017) 2017 Wisconsin Law Review 1037, 1044–6.
[26] James R May and Erin Daly, *Global Environmental Constitutionalism* (Cambridge University Press 2014) 209.
[27] Among others, see Jolene Lin (n 17); Andrew J Jordan and others, 'Emergence of Polycentric Climate Governance and Its Future Prospects' (2015) 5 Nature climate change 977; Ostrom (n 11); Dorsch and Flachsland (n 15).
[28] Andrew Jordan and others, 'Governing Climate Change Polycentrically: Setting the Scene' in Andrew Jordan and others (eds), *Governing Climate Change: Polycentricity in Action?* (Cambridge University Press 2018) 11–20.

constitutional competences.[29] This, in turn, allows national governments to prioritize high-level planning, international coordination, and cross-sectoral regulation.[30]

A multilevel approach is also consistent with the vertical allocation of power in many constitutions, especially in federal states, where subnational governments often have clear constitutional entitlements over the protection of the environment.[31] This is the case in countries like Germany,[32] the United States,[33] Canada,[34] and Brazil.[35] Even in unitary states with different degrees of decentralization such as Colombia,[36] the United Kingdom,[37] and Spain[38], subnational governments have historically been granted constitutional powers to regulate the protection of the environment and the use of natural resources in their territory.

Addressing the multilevel consequences of climate change thus requires the involvement of governments at all levels. Yet, multilevel governance can also give rise to constitutional disputes around the limits of the constitutional authority of different levels of government to

[29] Analyses of subnational climate legislation in Italy, Austria, and the United States, respectively, can be found in Mariachiara Alberton and others, 'Climate Change at Subnational Level: The Case Study of the Autonomous Provinces of Trento and Bolzano (Italy) and the Länder Tyrol and Vorarlberg (Austria)' in Federica Cittadino and others (eds), *Climate Change Integration in the Multilevel Governance of Italy and Austria* (Brill | Nijhoff 2022); Nathan E Hultman and others, 'Fusing Subnational with National Climate Action Is Central to Decarbonization: The Case of the United States' (2020) 11 Nature Communications 5255.
[30] Hultman and others (n 29) 2.
[31] Lael K Weis, 'Environmental Constitutionalism: Aspiration or Transformation?' (2018) 16 International Journal of Constitutional Law 836, 837.
[32] Ines Härtel, 'Klimaschutzverfassungsrecht: Klima-Staatszielbestimmungen Im Föderalismus' (2020) 42 Natur + Recht 577; Arthur Gunlicks, *The Länder and German Federalism* (Manchester University Press 2003) 155–7.
[33] May and Daly (n 26) 217–21.
[34] Dayna Nadine Scott, 'The Environment, Federalism, and the Charter' in Peter Oliver, Patrick Macklem and Nathalie Des Rosiers (eds), *The Oxford Handbook of the Canadian Constitution* (Oxford University Press 2017).
[35] May and Daly (n 26) 216–7.
[36] Colombian Constitution of 1991 art 300.
[37] The protection of the environment, with specific limitations, is considered one of the 'devolved matters' in Scotland, Wales, and Northern Ireland. See: Northern Ireland Act 1998 ss 4–6; Scotland Act 1998 ss 29–30; Wales Act 2017 ss 2–4. In the case of Scotland, see also: Gavin Little, 'Scottish Devolution and Environmental Law' (2000) 12 Journal of Environmental Law 155.
[38] Spanish Constitution of 1978 art 148.9.

address climate change. This is because many activities and sectors are linked to GHG emissions, meaning that subnational regulation on climate change might conflict with national legislation, and vice versa.[39] These disputes highlight the need for courts to mediate the evolving relationship between levels of government in climate governance—a challenge explored in the next section.

b) Understanding climate-related jurisdictional disputes in constitutional adjudication

Constitutional disputes arise as a result of often-conflicting interests of national and subnational governments. National governments typically assert their exclusive authority to conduct foreign affairs in relation to climate change, emphasising its global nature and the need for uniformity.[40] They must take into account the needs of the entire country in their planning of climate action, often grappling with trade-offs between competing regional needs. For example, they need to decide where to prioritise renewable energies and where to continue the exploitation of fossil fuels until their gradual phase-out.

Trade-offs of this sort can lead to conflicts with subnational legislation. As we will see, this was part of the dispute between the Spanish National Government and the Government of Catalonia, as the latter had banned fracking in its jurisdiction as part of the climate strategy incorporated in its Climate Change Act.[41] The Spanish Government claimed that the measure restricted its authority to regulate energy policy, one of its constitutional competences. The

[39] Buzbee (n 25) 1111.
[40] See, for example, *United States of America v. State of California et al.* (n 2).
[41] *STC 87/2019* (n 2).

Spanish Constitutional Court was called upon to adjudicate on the compatibility of this measure - and many others - with the Constitution.

Conversely, subnational governments believe they are entitled to address multiple aspects of climate change given their constitutional authority to protect the environment in their territories - as is common in comparative constitutional law. For example, they may regulate the use of natural resources in their territories - as in the case of Catalonia. They can also establish taxes to discourage polluting activities while generating revenues to fund other climate-related programmes - such as investment in adaptation to climate impacts for the most vulnerable sectors of the population - as in the Mexican case below.[42]

The eagerness of national and subnational governments to address climate change can lead to jurisdictional disputes that constitutional courts are called upon to adjudicate. National and subnational governments may challenge each other's policies to preserve their authority from what they see as encroachments resulting from the legislative activity of governments at other levels. In these cases, the legal nature of climate change complicates the role of courts when it comes to enforcing the constitutional allocation of competences between national and subnational authorities.

National constitutions generally allocate competences using lists of subject matters that are assigned to each level of government -an example from the Canadian Constitution can be found below.[43] Nevertheless, due to its novelty and wide-ranging implications, climate change is

[42] *Amparo en Revisión 888/2018.* (n 4).

[43] This allocation through subject matters can take different forms. For an overview of the allocation of competences in federal systems, see Daniel Halberstam, 'Federalism: Theory, Policy, Law' in Michel Rosenfeld and András Sajó

not a subject matter as such,[44] and is therefore not constitutionally allocated to either national or subnational governments. In fact, as indicated in Chapter 1, climate change is only mentioned in nearly a dozen constitutions worldwide.[45] Furthermore, climate change does not fit easily into a single subject matter. In light of its polycentricity, climate change is better characterised as a cross-cutting, cross-sectoral, or intersystemic problem.[46] This means that multiple subject matters are significantly intertwined when it comes to addressing climate change, hence climate-related legislation often touches upon a wide range of subjects. For example, ratifying the Paris Agreement is clearly linked to the conduction of foreign affairs, while adopting a framework for renewable energy auctions is more closely related to the planning of the energy system.

Table 1. Allocation of competences between the national and subnational legislators in Canada[47]

Legislative Authority of Parliament of Canada	Subjects of exclusive Provincial Legislation
Section 91: (…) the exclusive Legislative Authority of the Parliament of Canada extends to all Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say,	Section 92: In each Province the Legislature may exclusively make Laws in relation to Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say,

(eds), *The Oxford Handbook of Comparative Constitutional Law* (Oxford University Press 2012) 600–2; Raffaele Bifulco, 'Federalism' in Roger Masterman and Robert Schütze (eds), *The Cambridge Companion to Comparative Constitutional Law* (Cambridge University Press 2019) 327–8. An exploration of this allocation in unitary states can be found in Sergio Bartole, 'Internal Ordering in the Unitary State' in Michel Rosenfeld and András Sajó (eds), *The Oxford Handbook of Comparative Constitutional Law* (Oxford University Press 2012) 617–20. Finally, for a comparative discussion of the competences of national and subnational governments across systems of territorial organisation, see Roger Masterman, 'Multi-Layered Constitutions' in Roger Masterman and Robert Schütze (eds), *The Cambridge Companion to Comparative Constitutional Law* (Cambridge University Press 2019) 476–82.

[44] Alberton et al. reach this conclusion in the cases of Italy and Austria. See Alberton and others (n 29) 70, 75.

[45] Navraj Singh Ghaleigh, Joana Setzer and Asanga Welikala, 'The Complexities of Comparative Climate Constitutionalism' (2022) 34 Journal of Environmental Law 517, 523–5.

[46] Veerle Heyvaert, 'Governing Intersystemic Systemic Risks: Lessons from Covid and Climate Change' (2022) 85 The Modern Law Review 938, 944–5.

[47] The following provisions are taken from 'The Constitution Acts 1867 to 1982' (*Federal laws of Canada*, 9 April 2024) <https://laws-lois.justice.gc.ca/eng/const/page-3.html> accessed 8 January 2025.

1A. The Public Debt and Property. 2. The Regulation of Trade and Commerce. 2A. Unemployment insurance. (…)	2. Direct Taxation within the Province in order to the raising of a Revenue for Provincial Purposes. 3. The borrowing of Money on the sole Credit of the Province. (…) 16. Generally all Matters of a merely local or private Nature in the Province.

The lack of explicit allocation of competences over climate change, as well as its cross-sectoral implications, pose difficulties for the determination of which government level has dominant jurisdiction over climate-related issues. Notwithstanding these difficulties, constitutional courts are bound to enforce the constitutional allocation of competences between national and subnational governments in jurisdictional disputes. They are forced to use the constitutionally enumerated subject matters to classify a given piece of legislation in order to determine whether it is within the remit of the authority that adopted it. Given the polycentricity of climate change, this task can be particularly challenging for courts.

In the context of jurisdictional disputes over climate governance, humility serves as an guiding principle for constitutional courts, helping them navigate the challenges posed by the polycentricity and spatiality of climate change. Humility encourages courts to approach these disputes with an awareness of the limitations of rigid boundaries of authority to reflect the intricacies of multilevel governance. By acknowledging that climate change defies neat categorization into constitutionally enumerated subject matters, courts can craft decisions that balance the competing needs of national coordination and subnational autonomy without undermining the broader goals of climate governance.

Humility also guides courts in recognizing the collaborative nature of climate governance and the shared responsibilities of different levels of government. Rather than framing jurisdictional disputes as zero-sum conflicts, humility invites courts to adopt a perspective that facilitates cooperation between national and subnational actors. By fostering an attitude of respect for the distinct yet complementary roles of different government levels, humility can help courts mediate disputes in a way that strengthens the overall framework for addressing climate change.

3. Judicial Review of National Legislation

Climate measures of national governments can give rise to constitutional challenges from subnational authorities.[48] Given their wide-ranging implications, national climate legislation can be interpreted as excessively and unlawfully encroaching subnational authority to regulate important areas of governance, e.g., land-use, environmental protection. This was the case in Canada, where some provinces challenged the constitutionality of the *Greenhouse Gas Pollution Pricing Act 2018* (hereinafter GGPPA) on the grounds that it exceeded the constitutional authority of the Canadian Parliament and restricted the capacity of provinces to regulate GHG emissions themselves. The GGPPA consists of two main policies: a fuel charge on carbon-based fuels (Part 1), and a carbon price for industrial GHG emissions from large emissions-intensive industrial facilities (Part 2). Yet, both of these policies only apply as minimum standards in a Canadian

[48] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5).

province or territory if the Governor in Council (or *Governor General of Canada*) determines that they lack a sufficiently stringent carbon-pricing mechanism.

The provinces of Saskatchewan, Ontario, and Alberta challenged the constitutionality of the GGPPA before their respective Courts of Appeal. The courts in Saskatchewan[49] and Ontario[50] upheld the validity of the Act, while the Court of Appeal of Alberta held that the GGPPA was unconstitutional.[51] The cases were then heard on appeal by the Supreme Court.[52]

a) Climate change as a problem of multilevel governance

Before discussing the core of the Supreme Court's reasoning in this case, it is worth noting the way the court framed this dispute, as it exemplifies the need to frame climate change in light of its multivalence. In its ruling, the Supreme Court started off by discussing the larger picture of climate change. The court established that 'Global climate change is real, and it is clear that human activities are the primary cause'.[53] Furthermore, the court also elaborated on some features of climate change that were relevant for its decision. The words of the court are worth quoting in full:

> Climate change has three unique characteristics that are worth noting. First, it has no boundaries; the entire country and entire world are experiencing and will continue to experience its effects. Second, the effects of climate change do not have a direct connection to the source of GHG emissions. Provinces and territories with low GHG emissions can experience effects of climate change that are grossly disproportionate to their individual contributions to Canada's and the

[49] *Reference re Greenhouse Gas Pollution Pricing Act, 2019 SKCA 40* (Court of Appeal for Saskatchewan).
[50] *Reference re Greenhouse Gas Pollution Pricing Act, 2019 ONCA 544* (Court of Appeal for Ontario).
[51] *Reference re Greenhouse Gas Pollution Pricing Act, 2020 ABCA 74* (Court of Appeal of Alberta).
[52] An analysis of the Supreme Court's decision can be found in Jocelyn Stacey, 'Climate Disruption in Canadian Constitutional Law: References Re Greenhouse Gas Pollution Pricing Act' (2021) 33 Journal of Environmental Law 711. Stacey sees the judgment as an example of 'climate disruption' in Canadian constitutional law. To reach this conclusion, Stacey focuses on aspects of the decision that will not be covered in this chapter. It is nevertheless complementary of the analysis here presented.
[53] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 7.

> world's total GHG emissions. (…) Third, no one province, territory or country can address the issue of climate change on its own. Addressing climate change requires collective national and international action. This is because the harmful effects of GHGs are, by their very nature, not confined by borders.[54]

The Supreme Court set out the 'unique' features of climate change that would inform its decision concerning the validity of the GGPPA. They concerned i) the global nature of climate change, 2) the mismatch between sources and consequences of GHG emissions, and 3) the limits of national and subnational climate action. The quote above clearly reflects the legal nature of climate change as described in Chapter 1. In particular, it underscores the importance of climate change's spatiality and polycentricity for the allocation of competences across government levels.

The court accurately captured the ambivalent spatiality of climate change. It highlighted that climate change has 'no boundaries',[55] underscoring its global nature. It acknowledged that provinces and territories could suffer significant climate impacts, stressing the locally differentiated consequences of climate change. It also captured the polycentricity of climate change by asserting the cumulative causes of climate change and the *mismatch* between causes and consequences that was explored in Chapter 1. These features of the legal nature of climate change were considered explicitly by the Supreme Court and were decisive for its assessment of the GGPPA in light of the constitutional division of legislative powers between federal and provincial levels in Canada.

The quote above also reveals an exercise of framing to contain the multivalence of climate change. As suggested in Chapter 1, climate change is open to multiple interpretations, meaning

[54] ibid 12.
[55] ibid.

that courts face multiple choices to frame constitutional climate disputes in ways that capture their implications for the application of constitutional doctrines. In other words, courts need to delimit the aspects of climate change that are relevant to solve the legal dispute at stake. This means considering some elements and variables while leaving others aside. In this case, the Court made a choice to imagine climate change as a problem of multilevel governance, reflecting its polycentricity and spatiality. In its description, the court underscored the contribution of subnational, national, and international action to the governance of climate change. It also emphasised the inability of provinces and countries to address climate change without 'collective national and international action'.[56] This decision involved a reading of the reality of climate change in terms of some relevant elements for the court's review of the GGPPA.

In this case, the court did not consider, for example, the impacts of climate change for the enjoyment of constitutional rights of Canadian citizens. Indeed, this case did not revolve around the obligations of the Canadian government to protect fundamental rights, as it was a dispute between provinces and the federal government over their competences to legislate on carbon pricing. The provinces grounded their challenge of the GGPPA in the potential of federal overreach that would unlawfully encroach their constitutional authority to regulate GHG emissions. It is thus clear that the arguments of the parties and the judicial history of the case - i.e. the decisions of the provincial Courts of Appeal - influenced the Supreme Court's framing of the dispute. In any case, the quote above illustrates that climate change can be, and is in fact,

[56] ibid.

imagined differently in constitutional adjudication. The framing of climate change depends on the legal questions at stake in a given constitutional case.

The Supreme Court's framing of climate change in this case is an example of epistemic humility. By explicitly identifying the unique characteristics of climate change the court demonstrated an awareness of the systemic and interconnected nature of the problem, thus translating its physical reality into a set of relevant considerations for the interpretation of legislative competences under the Canadian Constitution. The court's choice to frame the issue as one of multilevel governance, rather than delving into broader considerations such as fundamental rights, signals an understanding of the necessity to focus on specific, manageable aspects of the problem to resolve the legal questions before it. This approach reflects the court's effort to engage with the complexity of climate change and its implications for the assessment of the GGPPA, thereby allowing for a more precise and contextually appropriate decision.

The framing of climate change that was crucial for the court in its assessment of the legal implications of climate change for the allocation of competences between the federal and provincial governments. The analysis of the judgment in this section will reveal that the Court relied heavily on its own characterisation of climate change to interpret its doctrines of adjudication about Canadian federalism. In other words, the court used its framing of climate change to give content to existing standards of adjudication concerning the limits of federal legislative authority.

b) The core of the Supreme Court's reasoning

Understanding the decision of the Supreme Court in this case requires some context about Canadian federalism. The division of competences between federal and provincial levels is regulated by sections 91 and 92 of the Canadian Constitution respectively - as shown in Table 1 above. Section 92 confers provinces exclusive powers to regulate several subjects, e.g. property and civil rights, direct provincial taxation, municipal institutions, education, etc. This means that federal powers cannot be used in a manner that disregards provincial autonomy with respect to these matters.[57] However, when it comes to matters not explicitly allocated to provincial legislatures, s 91 grants the federal parliament competence to 'make Laws for the Peace, Order, and good Government of Canada', also known as POOG power.

The exceptional competence of the federal parliament under the POOG power was allegedly used by the national government to enact the GGPPA.[58] This is relevant because legislation enacted under the POOG power is reviewed differently and more strictly by courts in order to prevent its abuse.[59] In other words, the standard of review employed in this constitutional dispute was determined by the parliament's resort to the POOG power enshrined in section 91 of the Constitution. With these rules in mind, we can better understand the court's methodology to resolve the jurisdictional dispute in this case.

i) The *pith and substance* of the GGPPA

The adjudication of jurisdictional disputes over legislation in Canada implies two steps. The first step is to identify the true subject matter of the piece of legislation under scrutiny. This is known

[57] ibid 48–50.
[58] ibid 89.
[59] ibid 89–91.

as the 'pith and substance'.[60] Once this element has been identified, the second element involves assessing whether the *pith and substance* corresponds to one of the subjects over which the authority that enacted the legislation has jurisdiction under ss 91 and 92 of the Constitution. Yet, if the legislation is enacted under the POOG power, its assessment involves a three-step test set out by the Supreme Court in the case *Crown Zellerbach.*[61] This is the so-called *national concern test,*[62] which I will discuss below.

To identify the GGPPA's *pith and substance*, the Supreme Court considered the *intrinsic*[63] - the Act's text and preamble - and *extrinsic*[64] - the Act's legislative history - evidence surrounding the Act, as well as its legal[65] and practical[66] effects. After examining these elements, the court concluded that the subject matter of the GGPPA was 'establishing minimum national standards of GHG price stringency to reduce GHG emissions'.[67] The establishment of *minimum standards* as the main thrust of the GGPPA implies that it only operates as a national backstop to ensure minimum GHG pricing. In the view of the court, its operation as a backstop system grants provinces enough flexibility to introduce their own GHG pricing mechanism, rather than imposing a strictly uniform scheme.[68] The narrow subject matter of the GGPPA as identified by the court suggests a limited restriction of provincial authority.

[60] *ibid 51.*
[61] *R v Crown Zellerbach Canada Ltd, [1988] 1 SCR 401* (Supreme Court of Canada).
[62] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) paras 89–90.
[63] ibid 58–61.
[64] ibid 62–9.
[65] ibid 70–6.
[66] ibid 77–9.
[67] ibid 80.
[68] *ibid 81.*

By establishing that the main thrust of the GGPPA was the establishment of *minimum standards* of GHG pricing, the court rejected the plaintiffs' contention that the GGPPA was broadly aimed at reducing GHG emissions.[69] The difference between establishing minimum standards for GHG regulation, and simply regulating GHG, might seem trivial.[70] However, it was this element of the GGPPA's pith and substance that led the Supreme Court to uphold its constitutionality,[71] as it determined the court's findings concerning the inability of provinces to regulate the main thrust of the GGPPA.[72]

The Supreme Court's choice of 'pith and substance' in this case can be seen as an example of the multivalence of constitutional law discussed in Chapter 1. The concrete identification of the GGPPA's pith and substance was an open-ended endeavour because of the wide-ranging implications of the GGPPA. Despite the court's painstaking explanation of its methodological choices, the decision implied a significant degree of discretion from the court. Indeed, it is easy to see how the court could have chosen 'the reduction of GHG emissions', 'national carbon pricing', or 'the regulation of industrial GHG emissions' as the main thrust of the GGPPA. Choosing any of these examples could have had the potential of altering the court's findings concerning the national concern test.

ii) The national concern test

[69] The Court of Appeal of Alberta had established that the GGPPA was unconstitutional on the basis that the regulation of GHG emissions falls under multiple provincial powers. In particular, the Court of Appeal considered that regulating GHG emissions falls under the provincial powers concerning economic development and management of natural resources (s. 92A of the Constitution). See ibid 44–5.
[70] This issue was discussed by the majority opinion. See ibid 81–2. The decision of the majority opinion to include the element of *minimum standards* as part of the GGPPA's main thrust was criticised by Justice Brown
[71] The court's overarching principles for the identification of the GGPPA's main thrust can be found in ibid 51–6.
[72] ibid 182–3.

After identifying the *pith and substance* of the GGPPA, the court classified it using the division of powers of ss 91 and 92 of the Constitution. As explained above, the Canadian government argued that the GGPPA was constitutional on the basis of its POGG power under s 91. Specifically, the government claimed that the GGPPA regulated a matter of national concern.[73] This meant that the court's assessment of the GGPPA was not aimed at classifying the GGPPA under the list of subjects of federal jurisdiction in s 91 of the Constitution. Instead, the court needed to determine whether the matter regulated by the GGPPA was of *inherent* national concern, thus transcending the jurisdiction of the provinces.[74] Finding that a matter is of national concern confers permanent exclusive federal jurisdiction over it.[75] Thus, such determination requires careful consideration. The *national concern test* is the mechanism by which the Supreme Court identifies matters of national concern.[76] The test consists of three steps: i) the threshold question, ii) the singleness, distinctiveness, and indivisibility analysis, and iii) the scale of impact analysis.[77]

The application of the national concern test in this case speaks to the exceptional character of climate change as a problem of constitutional governance.[78] This test is an exceptional standard of review, only applicable to matters not exclusively assigned to either federal or provincial authority in the Constitution.[79] Indeed, up until its decision on the GGPPA,

[73] SCC (n 1) para 89.
[74] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 89.
[75] ibid 90. In this case, however, the court applied the 'double aspect doctrine', which allows for shared jurisdiction between federal and provincial governments over matters of national concern. In exceptional cases, the same matter can be regulated concurrently by both levels, although from different perspectives. In case of conflict, federal regulation would be paramount. See ibid 125–30; Stacey (n 52) 717.
[76] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 89.
[77] *ibid 132.*
[78] A similar view is shared by Stacey in her analysis of the case. In her words, 'climate change as "the exception" lingers in the background of this decision.' See Stacey (n 52) 721.
[79] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 89.

the Supreme Court had not identified any new matters of national concern since its latest formulation in *Crown Zellerbach* in 1988.[80] The exceptional standard of review in this case is a result of the legal nature of climate change. As we will see, the unique characteristics of climate change identified by the court at the beginning of its judgment were relevant for its interpretation of every step of the national concern test.

a. The threshold question

Firstly, the threshold question asks whether the matter regulated by the piece of legislation under scrutiny is of sufficient concern to the country as a whole.[81] In the case at hand, the court found that establishing minimum national standards of GHG price stringency is of sufficient concern to Canada as a whole due the seriousness of climate change as an 'existential challenge'.[82]

To reach its conclusion, the court referred to the scale and gravity of climate change. The court posited that climate change is 'a threat of the highest order to the country, and indeed to the world'.[83] The court also underscored the consensus among experts worldwide regarding the utility of carbon pricing to reduce GHG emissions.[84] In other words, the court linked the adequacy of carbon pricing to reduce GHG emissions, on one hand, and the gravity of climate change, on

[80] ibid 107. Before *Crown Zellerbach*, only a handful of matter had been identified as ones of national concern. A historical overview of the national concern test in Canada can be found in the reasoning of the Court. See ibid 92–100.Previous examples of matters found to be of national concern include atomic energy, the control of marine pollution, and the development of the National Capital Region. See: ibid 138–9.
[81] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 142.
[82] ibid 167–71.
[83] ibid 167.
[84] ibid 170.

the other, to conclude that establishing minimum standards of carbon pricing is of concern of Canada as a whole.[85]

b. The singleness, distinctiveness, and indivisibility analysis

Secondly, the singleness, distinctiveness, and indivisibility analysis consists on the application of two related principles. The first principle requires that federal jurisdiction under the national concern doctrine be established only in relation to 'a specific and identifiable matter that is qualitatively different from matters of provincial concern'.[86] In relation to the GGPPA, the court concluded that its subject matter satisfied this requirement. The court noted that the minimum standards established by the GGPPA concerned GHG, which are a 'specific and precisely identifiable type of pollutant'.[87] Additionally, the court established that GHG emissions are 'predominantly extraprovincial and international in their character and implications'.[88] This finding reflects once again the spatiality of climate change as described in Chapter 1. It considered the global nature of climate action and its implications for the needs of climate governance.

The second principle of the singleness, distinctiveness, and indivisibility analysis demands that that federal jurisdiction is only found 'where the evidence establishes provincial inability to deal with the matter'.[89] In other words, the principle aims to ensure that the POGG power is only used with respect to matters that the provinces themselves are incapable of regulating. The court concluded that the GGPPA met the second principle for three reasons. First, the court found that

[85] ibid 171.
[86] *ibid 146.*
[87] ibid 173.
[88] *ibid.*
[89] ibid 181.

provinces are 'constitutionally incapable of establishing minimum national standards of GHG price stringency to reduce GHG emissions'.[90] In other words, provinces lacked the legal authority to enact legislation setting minimum standards applicable to all. As anticipated above, the decision of the Supreme Court to characterise the main thrust of the GGPPA as that of establishing *minimum standards* of carbon pricing was particularly relevant for its findings concerning *provincial inability*. According to the court, provinces could cooperatively implement a carbon pricing scheme, but such scheme would not be a binding legal standard that ensured its effectiveness. In other words, the establishment of a carbon pricing system to reduce GHG emissions would fall under the jurisdiction of the provinces, but the establishment of *minimum standards* for such a system would not.

Second, the court noted that a failure to include a single province in a scheme of national standards would jeopardise its success for the entire country.[91] In this regard, the court claimed that the effectiveness of carbon pricing as a mechanism to reduce GHG emissions hinged upon its uniform implementation across the country. Failure to do so would pose a risk of carbon leakage –i.e. that emission reductions in a province with carbon pricing be offset by increased emissions in a province without such scheme.[92]

Third, the court asserted that the refusal of a province to set carbon pricing standards would have 'grave consequences for extraprovincial interests'.[93] On this point, the court highlighted that 'the effects of climate change do not have a direct connection to the source of

[90] *ibid 182.*
[91] *ibid 183.*
[92] ibid. The Court also discussed evidence of inter-provincial carbon leakage in recent years. See ibid 184.
[93] *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 187.

GHG emissions',[94] meaning that the emissions of any province could cause significant impacts across the country. Specifically, the impacts of climate change would severely affect the Canadian Arctic, coastal regions, and Canadian indigenous peoples. This clearly reflects the *mismatch* between the causes and consequences of climate change that was discussed in Chapter 1 as one of the implications of polycentricity. We can see that this element bore legal significance for the decision of the court in this case, underscoring the need for federal intervention in relation to GHG pricing to mitigate the risk of climate impacts in Canada.

Drawing on the application of the two principles underpinning the singleness, distinctiveness, and indivisibility analysis, the court concluded that the federal government has jurisdiction over the establishment of minimum standards of carbon pricing to reduce GHG emissions.[95] In other words, federal action is indispensable to protect the country as a whole from the negative consequences of climate change through a system of minimum standards for carbon pricing.

c. The scale of impact analysis

Finally, the scale of impact analysis required the court to determine whether the matter found to be of national concern has an impact on provincial autonomy that is 'reconcilable with the fundamental distribution of legislative power under the Constitution'.[96] In other words, this step entails weighing the limitation of provincial power against the consequences of federal inability to address the matter at a national level. In the case of the GGPPA, the court found that its impact

[94] ibid.
[95] ibid 192.
[96] ibid 160.

on provincial autonomy was qualified and limited. In the view of the court, the GGPPA did not limit provincial autonomy to address climate change generally, or to implement carbon pricing schemes in their territories, but simply limited their ability to refrain from introducing minimum GHG pricing mechanisms to reduce emissions.[97]

In any case, the restriction on provincial autonomy stemming from the GGPPA was outweighed by the negative consequences of climate change if the national parliament were unable to legislate on the matter.[98] Once again, the court highlighted the gravity of climate change. In particular, it underscored the 'irreversible consequences for the environment, for human health and safety and for the economy'.[99] This reflects the temporality of climate change, which led the court to employ a forward-looking approach that incorporated the *future* and *irreversible* consequences of climate change into the assessment of the need for government action at *present* time. In other words, the consideration of the future impacts of climate change was relevant to justify the federal imposition of GHG pricing, aiming to prevent irreversible harm from materialising across the country.

The Supreme Court concluded that the establishment of minimum standards of carbon pricing to reduce GHG emissions met the requirements of the national concern test. Hence, the GGPPA constituted a legitimate exercise of the constitutional authority of the federal government to regulate this matter in Canada. Yet, the court acknowledged that the competence of the federal government was limited to the imposition of minimum standards of GHG pricing. Accordingly,

[97] ibid 206. This is consistent with the Court's application of the double aspect doctrine as indicated above.
[98] ibid 196.
[99] ibid 206.

provincial governments enjoy constitutional authority to implement other methods of regulating GHG emissions, or to regulate carbon pricing differently, as long as they meet the federal standards. The court thus applied the so-called 'double aspect doctrine' to recognise an overlapping jurisdiction between federal and provincial governments around the regulation of GHG emissions.[100]

c) Understanding the judgment through the legal nature of climate change

The Canadian case is exemplary of the underlying tensions between national and subnational governments that give rise to climate-related jurisdictional disputes in constitutional adjudication. Provinces advocated for autonomy and vindicated their role to address the local causes and consequences of climate change. In particular, they claimed authority to implement climate measures that reflected their preferred balance between economic goals and climate mitigation.[101] Conversely, the Federal Government advanced the need for coordination in light of the national and international implications of climate change, positioning itself as the champion of effective climate action. It underscored the grave risks of irreversible harm posed by climate change and the inability of provinces to implement effective mechanisms of carbon pricing without top-down federal legislation. The description of the case above mirrors the typical depiction of conflicts between national and subnational governments over climate legislation, as outlined at the beginning of this chapter.

[100] ibid 125–9; Stacey (n 52) 717.

[101] The majority opinion acknowledged that their decision interfered with the provinces' ability to balance climate change against other considerations of provincial governance. The majority nevertheless concluded that this restriction was limited and outweighed by the risks of irreversible harm posed by climate change. See *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* (n 5) para 206.

The Supreme Court's decision exemplifies doctrinal humility in its interpretation of the overlapping constitutional competences of provincial and federal governments to address climate change. For example, by applying the double aspect doctrine, the court acknowledged that provincial governments retain the authority to regulate carbon pricing and GHG emissions within their jurisdictions, albeit from a different perspective and subject to paramount federal legislation. This approach reflects doctrinal humility as it avoids an interpretation of constitutional powers detached from the specific characteristics of climate change, instead embracing a more nuanced understanding of shared responsibilities in climate governance. Furthermore, the court's recognition of the 'existential threat'[102] posed by climate change and its extraprovincial[103] implications influenced its interpretation of *provincial inability*[104] as part of the national concern test. This balance between asserting the federal role in structuring the state's climate response and respecting provincial autonomy demonstrates the court's careful engagement with the constitutional allocation of powers, guided by the unique legal nature of climate change. By framing its reasoning in terms of climate change's polycentricity and spatiality, the court displayed a willingness to adapt existing doctrines to the realities of climate governance, thus ensuring that the constitutional division of competences fulfilled its purpose in the face of climate change.

As anticipated above, this decision is also an example of *epistemic humility* in the terms described in Chapter 1. Indeed, the Supreme Court engaged with the legal nature of climate change from the outset, reflecting on how the three outstanding characteristics of climate change

[102] ibid 167, 171.
[103] ibid 173.
[104] ibid 181.

- its global nature, the mismatch between sources and consequences of GHG emissions, and the limits of national and subnational climate action - informed its framing of climate change as a problem of multilevel governance. By stressing these three attributes of climate change, the court sought to capture their implications for the legal question at stake - whether regulating GHG emissions through carbon pricing was of inherent *national concern*.[105]

The judgment of the court is therefore, in my view, thoroughly animated by the legal nature of climate change. It explicitly touched upon some of the issues described in Chapter 1, specifically regarding climate change's polycentricity and ambivalent spatiality. Such determination was only possible through a clear understanding of the physical reality of GHG emissions, the mismatch between the causes and consequences of climate change, and its spatially unbounded nature. The court effectively interpreted the Canadian division of competences between provinces and the Commonwealth in light of the legal implications of climate change. In other words, it engaged with the nature of climate change and assessed the needs of constitutional governance in this space against such nature.

I have taken the liberty of going over the reasoning of the court again at the risk of being repetitive. I did this because I want to underscore the specific ways in which the legal nature of climate change, in the terms described in Chapter 1, influenced the court's reasoning in this case. This kind of signposting is intended to guide the reader and facilitate the understanding of the

[105] Stacey (n 52) 717.

interrelationship between climate change and constitutional adjudication that this research aims to illuminate.

4. Challenges to Subnational Legislation

Unlike the Canadian case, jurisdictional disputes more commonly arise when national governments, and other actors, challenge subnational climate legislation.[106] In such cases, the core of the legal discussion revolves around the limits of subnational governments to pass climate legislation without overstepping the boundaries of their constitutional authority. The underlying tensions between competing interests are identical to the ones in the Canadian case, although the legal challenges take place in the opposite direction. Furthermore, the challenges posed by the polycentricity and spatiality of climate change for the adjudication of these disputes are equally analogous.

According to the IPCC, subnational climate legislation exists in at least 142 countries and is on the rise.[107] A significant part of legislation is included in so-called 'framework' laws that establish overarching legal contexts for climate action across sectors.[108] These laws typically include emission reduction targets in line with the LTTG of the Paris Agreement,[109] alongside a series of economic and regulatory instruments to facilitate the achievement of such goals.[110] The

[106] Buzbee (n 25) 1111.
[107] NK Dubash and others, 'National and Sub-National Policies and Institutions.' in PR Shukla and others (eds), *IPCC, 2022: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2022) 1378.
[108] ibid 1361.
[109] Lin discusses the engagement of subnational actors in 'transnational climate change law' as an important component of domestic efforts to achieve the goals of the Paris Agreement. See Jolene Lin (n 17) 220–4.
[110] Anita Foerster and others, 'Paris at the Sub-National Scale? An Exploration of the Role and Potential of Framework Climate Change Laws' (2021) 45 Melbourne University Law Review 1045, 1048. It is worth noting that in the European Union there are climate change regulations that engage subnational governments. An analysis of the role of

scope of subnational climate legislation typically reflects the remit of regional governments over a range of policy areas, e.g. land-use planning, infrastructure, waste management.[111] Thus, they play an important role in ramping up climate ambition, implementing mitigation and adaptation action at the local level, and promoting innovation and capacity-building.[112]

Subnational climate legislation usually overlaps with, and often complements, existing national legal frameworks for climate action.[113] Nevertheless, in some cases, subnational action can be perceived as too ambitious, exceeding the constitutional authority of subnational governments - as in the cases from Spain, Mexico, and California below. It can also be perceived as limiting the effectiveness of national climate legislation - as in the Australian case below. Thus, constitutional disputes over the validity subnational climate regulation arise, underscoring tensions around the vertical allocation of power under the constitution. In this section, four cases will illustrate this kind of disputes from different angles.

a) Subnational climate framework legislation in Catalonia

In Spain, the national government challenged the constitutionality of Catalonia's Climate Change Act of 2017. The Act 16/2017 constituted Catalonia's legislative response to climate change through a series of measures concerning mitigation and adaptation. Among its contents, the Act established emission reduction goals approved by the regional parliament (art. 5), a regional

subnational actors in EU climate change regulation before the Paris Agreement can be found in Michèle Finck, 'Above and Below the Surface: The Status of Sub-National Authorities in EU Climate Change Regulation' (2014) 26 Journal of environmental law 443.

[111] Dubash and others (n 107) 1378.

[112] UNFCCC, 'Yearbook of Global Climate Action 2023: Marrakech Partnership for Global Climate Action' (2023) 59 <https://unfccc.int/sites/default/files/resource/Yearbook_GCA_2023.pdf> accessed 14 February 2024.

[113] Thomas Hale, '"All Hands on Deck": The Paris Agreement and Nonstate Climate Action' (2016) 16 Global environmental politics 12, 20.

carbon budget to be updated every five years (art. 7), and strict energy transition measures, e.g. nuclear phase-out by 2027 and a blanket ban on fracking (art. 19). The Spanish government claimed that such measures were unconstitutional, as they conflicted with Spain's climate commitments under international and European Union law. Furthermore, the national government contended that the Catalonian Act was inconsistent with its exclusive faculties concerning the planning of the economy and the energy system under article 149 of the Spanish Constitution.[114]

The Spanish Constitutional Court partially found for the national government. In its reasoning, the court started by establishing that the national government enjoys a general faculty to regulate the protection of the environment, while subnational governments have authority to enact additional environmental protection measures.[115] Yet, the court posited that the Catalonian Climate Change Act could not be understood exclusively as pursuing environmental protection.[116] Given its wide scope, the measures contained in the Act had significant impact for the economy and the energy system, matters whose regulation is primarily in charge of the national government.[117] The court used this constitutional allocation of authority between the national and subnational governments as the basis for its review of each of the challenged measures contained in the Act.

The reasoning of the court underscores one of the difficulties of the judicial review of subnational climate legislation against the constitutional vertical allocation of authority. Even

[114] *STC 87/2019* (n 2) s I.1.
[115] ibid II.1.
[116] ibid II.4.
[117] ibid.

when subnational governments enjoy clear constitutional entitlements to address climate change within their territory, the polycentricity of climate change makes it impossible to tackle through environmental measures alone – that is to say, measures concerning the use of natural resources such as protection of fragile ecosystems, reforestation, etc. That is because, as explained in Chapter 1, climate change is the result of cumulative GHG emissions from a wide range of actors across economic sectors. Consequently, responding to climate change requires measures that touch upon the economy in sectors such as waste management, transportation, energy, or agriculture. Yet, cross-sectoral regulations to tackle climate change are often seen by national governments and courts as exceeding the scope of authority of subnational governments.

In the case at hand, the court reasoned that, due to the consequences of the Catalonian framework law in terms of economic planning and the energy system, the law could not be seen exclusively as an exercise of Catalonia's competences over the protection of the environment.[118] In other words, it identified an overlap between environmental and economic considerations around climate legislation. This problem of overlap between environmental problems and other policy areas - economy, energy, foreign affairs - is not exclusive of climate change. Other environmental problems raise similar concerns and give rise to similar jurisdictional disputes. Examples of similar disputes between national and subnational governments over nuclear policy[119] or hydro-electric power[120] predate contemporary debates around climate change.

[118] ibid.
[119] Robert W Williams, 'Intergovernmental Conflict over Emergency Planning: The Politics of the Shoreham Nuclear Power Plant' (1997) 30 Polity 285.
[120] *Commonwealth v Tasmania* [1983] High Court of Australia [1983] HCA 21.

Nevertheless, the overlap between policy areas is substantially more acute in the case of climate change due to the ubiquity of its causes.

The nature of climate change entails an extreme form of polycentricity, meaning that multiple policy areas are drastically intertwined in climate policy. This polycentricity obscures the traditional constitutional delimitation of issues employed to allocate competences between government levels. In other words, it is not easy for constitutional courts to determine whether subnational climate measures fall exclusively within the subject matters over which subnational governments have competence - typically environmental protection, land-use, waste management - or whether they touch upon some of the subjects over which national governments enjoy exclusive powers - usually the economy, the energy system, and foreign affairs. Oftentimes, courts conclude that climate measures fall into both national and subnational subject matters, as reflected in the use of the *double aspect doctrine* in the Canadian case explained above.[121]

Unlike other environmental problems that can be more easily addressed within the jurisdiction of subnational governments - e.g. forest protection, pollution, biodiversity, water use - the far-reaching implications of climate measures reduce the ability of subnational governments to adopt legislation to respond to climate change. The more ambitious subnational climate measures are, the more likely they are to be challenged for interfering with the remit of national governments over taxation, economic planning, or the energy system. Take the ban on fracking passed by Catalonia in this case as an example. This is a measure that has been implemented in

[121] Stacey (n 52) 717.

many countries - several EU member States, United Kingdom, Australia, among others.[122] Even Spain banned fracking later on in its Climate Change Act of 2021. Yet, the Spanish Constitutional Court decided that this measure was unconstitutional when adopted by the Catalonian legislator within its jurisdiction, as it interfered with the competences of the national government to regulate the energy system.[123] In other words, its approval by Catalonia conflicted with the authority of the national government, who later did nonetheless lawfully implement it for the whole of Spain.

The Spanish Constitutional Court struck down eleven provisions of the Act, all of which established specific goals and measures aimed at abating GHG emissions in Catalonia. These measures concerned emission reduction goals for 2030, 2040, and 2050, goals for power generation through renewable energies, the ban on fracking, standards for zero-emission buildings, a regional carbon budget, and the promotion of electric vehicles, among other issues.[124] The court concluded that such policies restricted the ability of the national government to dictate the state's response to climate change in use of its constitutional faculties regarding foreign affairs, the planning of the economy, and the energy system.

Of particular interest for the purpose of our analysis is the court's reasoning concerning the authority of subnational governments to enact measures directed at fulfilling international climate commitments of the State. In this case, the Catalonian government claimed that the provisions of the Climate Change Act sought to fulfil Spain's international commitments,

[122] 'What Is Fracking and Why Is It Controversial?' *BBC News* (26 October 2022) <https://www.bbc.com/news/uk-14432401> accessed 19 November 2024.
[123] *STC 87/2019* (n 2) s II.10.
[124] ibid 100–1.

specifically under the Paris Agreement and EU law. Indeed, one of the declared objectives of the Act was indeed to 'promote compliance with the international commitments on climate change' and Catalonia's 'share' of such commitments (art. 2.e). For the national government, this was a clear indication that Catalonia was overstepping its constitutional boundaries, as only national legislation could adopt measures to discharge the country's international obligations.

The court established that the fact that the National Government had not enacted legislation to ensure compliance with its obligations under the Paris Agreement did not prevent regional governments from seeking compliance within their remit.[125] Regional governments could pursue compliance with the state's international commitments, as long as they acted within their constitutional authority. In particular, they could not engage in binding agreements with foreign public authorities.[126] In the case of the Paris Agreement and climate-related EU law, regional governments are also prevented from dividing those international commitments to determine their 'regional share' without previous national regulation.[127] This was the main reason behind the court's decision to strike down the carbon budget originally included in the Act.[128]

The reasoning of the court on this point underscores some difficulties for the allocation of specific climate targets for subnational governments. In the absence of such allocations in national legislation, regional governments cannot plan their legislative response around specific goals, limiting their ability to respond to climate change. In this case, the lack of clear quotas of

[125] ibid 6.d.
[126] ibid 7.a. The engagement of subnational governments in partnerships with foreign governments will be explored in further detail in the analysis of the Californian case below.
[127] ibid 7.d.
[128] ibid 8.b.

emissions for Catalonia implied, in the view of the court, that it could not set its own in subnational legislation, thus undermining its climate response.

At the same time, splitting the burden of mitigation and adaptation to climate change evenly across regions within a country - as sought by Catalonia - does not seem plausible. Different regions often make heterogeneous contributions to climate change, both in terms of the sizes of their GHG emissions as well as the sources of those emissions. Thus, national governments are often better equipped to establish an equitable and efficient allocation of responsibilities among subnational authorities for their response to climate change. For example, they can determine where critical energy infrastructure - like nuclear plants and fracking sites - is better placed to serve the rest of the country, even if that means that a specific region will generate more GHG emissions from those activities.

The lack of clear targets or quotas of GHG emissions for subnational governments is a recurring source of dispute, not only because it undermines their ability to plan their climate response effectively, but also because it hinders the attribution of responsibility for insufficient or inadequate climate ambition. In other words, the absence of quotas also complicate the assessment of the adequacy of measures adopted by subnational governments, since it is not clear what they are required to do in use of their limited authority to address climate change. This specific issue will be discussed later in our analysis of the German case.

Overall, the Spanish case exemplifies the constitutional disputes and legal debates that take place when national governments challenge subnational climate legislation. It illustrates the difficulties of assessing the validity of regional climate legislation against traditional constitutional

boundaries of public authority through lists of subject matters. In particular, climate change's polycentricity entails that subject matters are significantly intertwined, complicating the judicial review of subnational legislation in light of constitutional division of powers.

The polycentricity of climate change restricts the autonomy of both national and subnational authorities to adopt climate legislation without touching upon areas of governance constitutionally reserved to other levels of government.[129] Consequently, courts find it difficult to differentiate between subject matters usually within the remit of subnational authorities –e.g. environmental protection– and those typically reserved to national governments –e.g. economic planning, the energy system, or foreign affairs. The extent to which polycentricity impose stronger limitations on national or subnational governments depends significantly on the system of government. It can be expected that in federalist systems - like Canada - the overlap between subject matters will limit the ability of federal governments to adopt climate legislation without interfering with the constitutional jurisdiction of subnational governments. Conversely, such overlap will impose stronger restrictions on subnational legislation in centralised systems - as in the Spanish case.

Additionally, this case underscores the challenges facing subnational governments in their efforts to fulfil the state's international commitments through self-imposed carbon budgets and binding climate targets. In the absence of clear allocations of climate ambition at the national level, subnational governments are prevented from establishing their own, thus hindering their ability to plan their climate response. In this sense, subnational authorities are usually

[129] Buzbee (n 25) 1111.

subordinated to the determinations of the national governments concerning the distribution of climate ambition across the country.

b) Climate initiative with foreign partners in California

As explored in Chapter 1, the global nature of climate change limits the ability of both national and subnational governments to respond to climate change. Given that climate change is a result of global GHG emissions, and there is a mismatch between the emissions generated by a given country and the severity of climate impacts it suffers, no single government is able to effectively protect its territory from the negative consequences of climate change. Yet, this limitation is significantly more taxing for subnational governments. Not only because they usually exert authority over smaller territories, but mainly because unlike national governments, they are restricted in their capacity to engage in international multilateralism to ensure a coordinated response to climate change. This situation necessarily limits the effectiveness of their policies. In reaction to this, some subnational authorities have established cooperation mechanisms with foreign counterparts to strengthen their response to climate change.[130] Yet, such mechanisms have often been challenged by national governments who see them as an unlawful restriction of their discretion to negotiate climate agreements at the international level. A case in the United States illustrates this type of conflicts.

In 2011, the government of California established a cap-and-trade program, with the objective of providing a market-based approach to reducing GHG emissions in its territory. Similar

[130] Examples of these initiatives are regularly reported and updated by the UNFCCC's Global Climate Action Portal (GCAP). See: https://climateaction.unfccc.int/

to the EU's Emissions Trading System, the Californian scheme sets annual caps of GHG emissions with a number of emission allocations given to companies through quarterly auctions in accordance with existing caps. The cap decreases every year and emitters are allowed to trade their allowances, creating an incentive to reduce their emissions over time in line with decreasing tradable allowances. At the same time, the proceedings from the auctions are deposited in a 'Greenhouse Gas Reduction Fund' that finances projects to reduce GHG emissions efficiently and equitably.[131] California's cap-and-trade scheme also established a framework for linkage with external emission trading programs.[132] Since 2014, California's program is linked with the Canadian province of Québec. California and Québec were also joined briefly by Ontario in 2018, although such linkage ended soon thereafter.

A couple of years after President Trump announced that the United States would withdraw from the Paris Agreement in 2017, the US Federal Government filed a constitutional action against California. According to the claim, the cap-and-trade programme, and in particular its framework for linkage with foreign partners, was unconstitutional, as it contradicted Section 10 of Art. I of the Constitution[133] and the Foreign Affairs Doctrine.[134] The case was decided by the District Court of the Eastern District of California in 2020.

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[131] Lara Cushing and others, 'Carbon Trading, Co-Pollutants, and Environmental Equity: Evidence from California's Cap-and-Trade Program (2011–2015)' (2018) 15 PLOS Medicine e1002604, 5–6; Justin Caron, Sebastian Rausch and Niven Winchester, 'Leakage from Sub-National Climate Policy: The Case of California's Cap-and-Trade Program' (2015) 36 The Energy Journal 167, 169–70.

[132] 'Program Linkage | California Air Resources Board' <https://ww2.arb.ca.gov/es/our-work/programs/cap-and-trade-program/program-linkage> accessed 23 November 2023.

[133] Art. I Sec. 10 provides in Clause 1 that 'No State shall enter into any Treaty, Alliance, or Confederation (…)'. In Clause 3, it provides that 'No State Shall, without the Consent of Congress, (…) enter into any Agreement or Compact with another State, or with a foreign Power (…)'.

[134] *United States of America v. State of California et al.* (n 2) 8.

The decision of the court revolved around the *Foreign Affairs Doctrine*. This doctrine 'preempts state laws that intrude on the federal government's exclusive power over foreign affairs'.[135] The application of this doctrine in constitutional adjudication consists of two distinct analyses: conflict preemption and field preemption.[136] Under the former, state legislation must give way when in conflict with an express determination of federal foreign policy.[137] According to the latter, state law is preempted when it 'intrudes on the field of foreign affairs without addressing a traditional state responsibility', even in absence of an express indication of foreign policy.[138] The court studied a potential conflict between California's cap-and-trade program and both elements of the foreign affairs doctrine.

The court addressed two arguments of the plaintiff concerning conflict preemption. Firstly, the federal government argued that California's joint program with Québec was incompatible with the Global Climate Protection Act of 1987 (GCPA) and United Nations Framework Convention of Climate Change of 1992 (UNFCCC), ratified by the United States. Secondly, it claimed that California's program undermined its ability to negotiate a new international climate agreement after its withdrawal from the Paris Agreement.[139] In relation to the former, the court concluded that both the GCPA and the UNFCCC aim to regulate GHG emissions and prevent the worsening of climate conditions. Thus, California's scheme was fully compatible with those objectives, raising no preemption conflict.[140] In relation to the latter, the

[135] ibid 10.
[136] ibid 11.
[137] ibid.
[138] ibid.
[139] ibid 12.
[140] ibid 12–5.

court established that conflict preemption requires an express instrument of foreign policy against which to assess the compatibility of the state regulation being challenged. In this case, the court found that there was no express policy determination of the federal government in relation to a new international climate agreement, hence the cap-and-trade program did not conflict with the plaintiff's foreign policy.[141]

The analysis of the court in relation to field preemption also comprised two elements. To determine whether California's program violated the Constitution under this doctrine, the court needed to consider i) whether the state law 'has no serious claim to be addressing a traditional state responsibility',[142] and ii) whether it intrudes on the foreign affairs powers of the federal government. As regards the first element, the court established that it was well within California's authority to regulate GHG emissions in its territory.[143] Yet, such power was limited by the exclusive responsibility of the federal government to conduct foreign affairs.[144] The court thus found that California's cap-and-trade program exceeded a traditional state interest by regulating emissions beyond California's borders.[145] With respect to the second element, the court concluded that there was no concrete evidence to the effect that California's program has interfered with the exercise of the president's powers to conduct foreign affairs.[146] According to the court, a future climate treaty could have the alleged preemptive effect over California's scheme, but in the meantime, simple speculation could not meet the necessary threshold to

[141] ibid 15–8.
[142] ibid 19.
[143] ibid 21.
[144] ibid 22.
[145] ibid 24.
[146] ibid 28.

preempt the state program.[147] Given that both elements are required for the operation of field preemption, the court sided with the defendants and upheld California's cap-and-trade agreement with Québec.[148]

This case illustrates the constitutional limits imposed on the ability of subnational governments to respond to climate change through joint initiatives with foreign authorities. As indicated earlier in this chapter, the nature of climate change as a collective action problem implies that the effectiveness of climate measures is generally proportional to the number of participants to them. This is why California sought to expand its cap-and-trade scheme through partnership with Canadian provinces. A larger scheme entails a larger number of companies involved and a larger amount of GHG emissions being reduced gradually through decreasing allowances. Yet, the court opined that by partnering with Quebec, California was regulating GHG emissions outside its jurisdiction, thus acting beyond its constitutionally protected state interest. Subnational governments are therefore limited in their ability to cooperate with foreign entities to enhance the effectiveness of their climate response, even though they are constitutionally entitled to address climate change.

The Californian case also underscores the extent to which subnational climate policy is eminently subordinated to the variable dictates of a given government's foreign policy. While the protection of the environment through the regulation of GHG emissions is repeatedly found to be well within the powers of subnational authorities, the effectiveness of their policies is

[147] ibid 29.
[148] ibid 30.

undermined by the primary role of the national government to coordinate an international response to climate change. In other words, the role of subnational authorities is seen as ancillary to that of the national government in relation to the international dimension of climate change. In the dual spatiality of climate change, the local follows the global.

California's cap-and-trade program is one of many subnational initiatives that address climate change through market-based instruments. This scheme was controversial for its impacts beyond state borders. Yet, jurisdictional disputes in constitutional adjudication arise also in relation to economic measures with purely subnational scope. This is most evident in cases surrounding the validity of regional taxes. In such cases, national governments and other stakeholders often contend that the regulation of climate change through taxation is beyond the authority of subnational governments.

c) Subnational taxation in relation to climate change

i. Green taxes in Mexico

In 2017, the state of Zacatecas enacted the *Public Finance Act,* which established a number of ecological taxes. In particular, the statute introduced a carbon tax on all GHG emissions within its jurisdiction. The new carbon tax was challenged by a beverage company on the grounds that it exceeded the constitutional authority of state legislatures in tax matters. According to the claimant, article 73 of the Mexican Constitution reserves to the federal congress the power to regulate the use and exploitation of the atmosphere (Section XXIX.2) and to impose taxes on beer

production and consumption (Section XXIX.5.g). After the first instance judge sided with the claimant, the case went before the Mexican Supreme Court on appeal.

In its judgment, the Supreme Court overturned the decision of first instance and upheld the regional tax. The court established that under art. 73 of the Mexican Constitution, the protection of the environment is a joint competence of the federal and state governments (section XXIX-G).[149] This joint competence was further regulated by the federal congress through the Climate Change Act of 2012, which enabled subnational authorities to raise taxes in order to fund mitigation and adaptation policies.[150] In relation to the exclusive competence of the federal congress to regulate the use and exploitation of the atmosphere, the court concluded that a carbon tax did not fit that description. According to the court, a tax on GHG emissions is not a tax on the 'use and exploitation' of the atmosphere, but rather on its 'negative affectation',[151] thus being within the remit of state legislatures.

The claimant also contended that a tax on GHG emissions exceeded the territorial jurisdiction of state legislatures because it regulated the use of the atmosphere, a fraction of which falls under the exclusive jurisdiction of the Mexican state under international law. To address this argument, the Supreme Court distinguished between the use of national airspace and the atmosphere as a common good regulated by international law, and the joint competences of the federal and state legislatures to regulate GHG emissions through green taxes. For the court, the tax in Zacatecas was lawful insofar as it regulated emissions originating from within its

[149] *Amparo en Revisión 888/2018.* (n 4) 25.
[150] *ibid 32.*
[151] ibid 27–8.

territory, even if such emissions did reach the atmosphere later on.[152] In doing so, the court reconciled the spatially unbounded nature of GHG emissions with the territorial jurisdiction of subnational governments.

Finally, the Supreme Court found that the carbon tax was not a tax on beer production and consumption in the terms of article 73 of the Mexican Constitution. Even though the carbon tax could also apply to GHG emissions resulting from beer production, the activity regulated by the tax was the emission of polluting substances to the atmosphere, regardless of their activity of origin.[153] Thus, the carbon tax was compatible with the constitutional allocation of competences between the federal and state governments.

The judgment of the Supreme Court illustrates additional difficulties posed by climate change for the interpretation of constitutional boundaries of legislative authority between national and subnational authorities. In this specific case, the legal nature of climate change complicated the assessment of the court in two main ways. Firstly, the multivalence of climate change confronted the Supreme Court with conflicting interpretations of the legal dispute: the *use* of the atmosphere as an issue of national administration versus its *affectation,* which state legislatures can regulate; the environmental rationale of green taxes versus its economic implications for beer production, whose regulation is explicitly allocated to the federal government by the Constitution. As noted in Chapter 1, multivalence requires courts to break down the intricate reality of climate change in order to adjudicate disputes for which no

[152] *ibid 77.*
[153] *ibid 30.*

straightforward response is to be found in the constitutional text or judicial precedents. Interpretive choices such as those made by the Mexican Supreme Court are thus crucial for the review of subnational legislation. Indeed, in this case a significant part of the court's reasoning was devoted to choosing between ways of framing the elements of the dispute. The Supreme Court's careful framing of the dispute was crucial to its resolution, requiring interpretive choices that balanced environmental, economic, and jurisdictional considerations.

Secondly, the ambivalent spatiality of climate change complicated the assessment of the territorial scope of subnational policies. As described in Chapter 1, Climate change operates across interconnected global, national, and subnational scales, challenging traditional notions of territoriality in constitutional law. Subnational authorities are constitutionally entitled to address climate change in light of its local impacts, but their climate measures often extend beyond their boundaries due to the spatially unbounded nature of GHG emissions. In this case, Zacatecas' carbon tax applies to GHG emissions originating within its territory. Yet, it regulates emissions flowing into the atmosphere, a common good whose constitutional administration and regulation inside Mexico falls within the remit of the national government. Thus, plaintiffs alleged that Zacatecas was regulating the use of a common good located beyond its own jurisdiction. This apparent overlap prompted the Supreme Court to differentiate between aspects of the atmosphere that could be regulated by subnational versus federal legislatures. The court's distinction between 'use' and 'affectation' of the atmosphere highlights the need for nuanced judicial reasoning to reconcile local and national dimensions of climate governance.

The Supreme Court's judgment reflects the need for courts to interpret constitutional frameworks in ways that address the multilevel and interconnected nature of climate change. By engaging with the spatial complexities of emissions and their regulation, the court navigated the tensions between territorial jurisdiction and the spatiality of climate change. Viewed through the lens of doctrinal humility, the court demonstrated a willingness to adapt constitutional doctrines to the legal nature of climate change. The distinction between the 'use' and 'affectation' of the atmosphere reveal the court's recognition that existing constitutional categories may be inadequate to reflect the needs of climate governance. Instead of rigidly adhering to established interpretations, the court engaged in a careful reexamination of constitutional categories to ensure that both federal and subnational governments could contribute to climate governance in use of their respective competences. This approach reflects a doctrinal humility that acknowledges the evolving nature of constitutional frameworks in the face of novel realities.

ii. Charge on electric vehicle usage in Australia

I have repeatedly stressed in this chapter that the polycentricity of climate change entails an overlap between subject matters such that climate legislation at every government level usually touches upon a host of issues concerning the economy, foreign affairs, the energy system, etc. As discussed above, this situation gives rise to jurisdictional disputes concerning the competences of both national and subnational authorities to adopt climate legislation without touching upon areas of governance constitutionally reserved to other levels of government. Sometimes, this overlap between climate change and subject matters other than the environment may also imply that legislation seemingly unrelated to climate change can be challenged for its impacts on the

achievement of climate goals set in legislation. An example of judicial review of subnational legislation in Australia illustrates this kind of disputes.

In 2021, the Parliament of Victoria passed the Zero and Low Emission Vehicle Distance-based Charge Act (hereinafter ZLEV Act). This statute requires users of zero or low emissions vehicles (ZLEVs) to pay a charge for the use of such vehicles 'on certain roads' (Part 1.1). The charge is calculated annually through a prescribed rate for each kilometre travelled with by the ZLEV in a given financial year (Part 2.1). The purpose of this charge is to fund roads maintenance and encourage optimisation of the use of ZLEV, compensating for the absence of fuel excise on these vehicles as it exists for internal combustion engine cars. Thus, it is aimed at ensuring that all road users contribute their fair share to the funding of roads and road-related infrastructure.[154]

At face value, the ZLEV charge is not a climate measure of the sort that were reviewed by courts in the cases discussed so far in this chapter. It is not directed at reducing GHG emissions in Victoria, but simply at ensuring that ZLEV owners contribute to the funding of road on equal footing as gasoline-cars owners. Yet, the ZLEV Act was met with strong opposition from ZLEV users and climate activists, for whom the charge hindered the uptake of ZLEVs and the achievement of climate goals. Two owners of electric vehicles challenged the ZLEV Act before the High Court of Australia, arguing that the ZLEV Act was incompatible with s 90 of the Australian Constitution, that establishes the exclusive power of the Australian Parliament 'to impose duties of custom and of excise'. The decision of the High Court in *Vanderstock v. Australia* therefore revolved around

[154] *Vanderstock v Victoria [2023] HCA 30* (n 1) paras 163–4.

whether the ZLEV charge could be considered a duty of excise in the terms of art. 90 of the Constitution.[155]

Before the decision in *Vanderstock*, the Australian High Court had differing precedents in relation to what constitutes a duty of excise within the meaning of s 90 of the Constitution.[156] Most notably, in *Dickenson's Arcade (1974),*[157] the High Court established that consumption taxes on goods were excluded from the category of duties of excise. Yet, in *Vanderstock,* the majority overruled the precedent of *Dickenson's Arcade* to include consumption taxes within the constitutional concept of duties of excise.[158] The court reached this conclusion by looking at the essence of the exclusive faculty of the federal parliament under s 90. According to the court, the aim of this provision is to ensure that the implementation of federal policies 'through uniform laws of trade, commerce or taxation could not be hampered or defeated by State or Territory taxation of goods'.[159] In other words, the restriction on state authorities to impose duties of excise seeks to guarantee the effectiveness of federal policy determinations. Thus, such restriction applies to inland taxes on goods at any stage of their life cycle.[160]

The court concluded that the ZLEV charge was a duty of excise, as it was a tax on the use of ZLEV and had the effect of depressing the demand of those vehicles.[161] The court also considered the impact of the ZLEV charge for Australian climate policy, particularly in light of the

[155] ibid 9–10.
[156] Weis (n 24) 257–8.
[157] *Dickenson's Arcade Pty Ltd v Tasmania [1974] HCA 9* (High Court of Australia).
[158] See the majority judgment by Justices Kiefel CJ, Gageler, and Gleeson JJ. *Vanderstock v Victoria [2023] HCA 30* (n 1) paras 133–4.
[159] ibid 124.
[160] ibid 127.
[161] ibid 183–92.

tax incentives previously given to ZLEVs in the Electric Car Discount Act and the National Electric Vehicle Strategy.[162] The court found that the exclusive power of the Commonwealth Parliament to enact legislation stimulating the demand for ZLEVs as a way to 'reduce greenhouse gas emissions and to fulfil Australia's international responsibilities under the Paris Agreement', could not be lawfully distorted by subnational taxes on these vehicles.[163] The ZLEV Act was thus declared unconstitutional for imposing a duty of excise, hence unlawfully exercising a power reserved to the Australian Parliament under s 90 of the Constitution.[164]

Implicit in the reasoning of the majority in this case is the idea that the promotion of ZLEVs was a matter of national interest, as suggested by existing federal policies incentivizing ZLEV uptake. According to the dissenting opinion of Justice Gordon, the majority opinion made an unstated assumption to the effect that 'it is the Commonwealth, not the States, which has the responsibility to address climate change and to regulate ZLEVs'.[165] In other words, the ZLEV charge was found to be thwarting the Commonwealth's efforts to reduce GHG emissions. The High Court thus seem to have emphasized the importance of s 90 for the effectiveness of federal climate legislation.[166]

This decision underscores the difficulties posed by the multivalence and polycentricity of climate change for the assessment of subnational legislation. At face value, the purpose of the ZLEV charge was not related to the achievement of climate goals, but rather it simply sought to

[162] ibid 196.
[163] ibid 198.
[164] ibid.
[165] ibid 419.
[166] An analysis of the legal and political impacts of this decision can be found in Weis (n 24).

address an unintended consequence of climate legislation: the underfunding of roads resulting from the increasing uptake of ZLEVs in Australia.[167] Yet, the multivalence and polycentricity of climate change led the court to find a sufficient connection between the ZLEV charge and federal climate legislation. The court found that the ZLEV charge would dampen the demand of ZLEVs, thus hindering the achievement of Australia's climate targets. Implicitly, the High Court grounded its decision to invalidate the ZLEV charge in the need to ensure the effectiveness of federal climate legislation.

By reinforcing the federal government's exclusive authority under Section 90, the court underscored the need to maintain cohesive national climate strategies. However, this decision has raised concerns about its implications for subnational governance. As Weis argues, the ruling risks limiting subnational initiatives that address unintended consequences of national climate policies, such as the financial impact of ZLEV adoption on road maintenance.[168] This could disincentivize innovative subnational measures that align with national goals while addressing localised challenges.[169] In other words, the court's prioritisation of federal uniformity may constrain the states' capacity to implement legislation tailored to subnational realities, reflecting the broader constitutional tension between accommodating localised governance needs and ensuring a cohesive national approach to climate action.

In light of Weis' critique, the High Court's decision in *Vanderstock* may be seen as lacking humility in its interpretation of Section 90 of the Constitution, as it overlooks the purpose and

[167] *Vanderstock v Victoria [2023] HCA 30* (n 1) paras 163–4.
[168] Weis (n 24) 260–1.
[169] ibid 261.

broader implications of the ZLEV Act. By focusing narrowly on the charge's characterisation as an excise duty without considering the potential need to address the unintended consequences of climate policies -such as the underfunding of road maintenance-, the court failed to acknowledge the broader implications of its decision for Australian federalism. As noted by Weis, 'The structural changes to the constitutional order effected by the decision appear to undermine, rather than enhance, the capacity of Australian governments to tackle climate change and other pressing environmental issues'.[170] The decision illustrates the importance of humility to navigate the complexities of climate governance, instructing courts to be open-minded when considering potential trade-offs of their decisions in light of climate change's legal nature. In this particular case, a more humble approach would have considered the broader context of the Act, acknowledging the interconnectedness of fiscal, environmental, and governance concerns, and striving to balance the legitimate interests of both federal and subnational authorities in advancing Australia's climate objectives. This reinforces the value of humility in promoting more nuanced and collaborative judicial outcomes in complex, multilevel governance contexts.

The four cases discussed in this section illustrate the constitutional limits on subnational governments' ability to regulate climate change without encroaching on national competences. They highlight how the legal nature of climate change—its multivalence, polycentricity, and ambivalent spatiality— does not fit easily into existing categories and methodologies of allocation of powers between national and subnational authorities, particularly through lists of subject matters as is common in constitutional texts.. Courts often find that climate legislation intersects

[170] ibid 263–4.

with competences assigned to both national and subnational authorities, reinforcing the framing of climate change as a collective action problem requiring robust national oversight.

These cases underscore the critical role of constitutional courts in resolving jurisdictional disputes by navigating the complex interplay between subnational and national governance. While some of these decisions frequently subordinate subnational autonomy to federal policies, they also reveal opportunities for collaborative frameworks that balance multilevel governance needs. The evolving judicial approaches to such disputes demonstrate the necessity of adaptive constitutional frameworks that address the demands of climate governance while respecting the constitutional authority of both national and subnational governments.

5. Different Responsibilities of National and Subnational Governments in relation to Climate Change

While the previous sections examined constitutional disputes over the boundaries of national and subnational authority to regulate climate change, this section explores how those boundaries influence the extent to which subnational governments can be held accountable for their climate ambition. In other words, the limits on the authority of subnational governments to regulate climate change translate into limits to their accountability for their contribution to it in constitutional adjudication. A decision from the German Constitutional Court illustrates the differing standards of accountability of national and subnational governments in light of their distinct competences to regulate climate change.

In 2021, groups of youth supported by the organisation Deutsche Umwelthilfe (DUH – Environmental Action Germany) filed eleven constitutional complaints against German states (*Länder*), claiming a violation of their rights. In some cases, they were grounded in the inadequacy or insufficiency of existing subnational climate legislation to ensure rights protection. In others, the violation of rights was attributed to the absence of climate legislation in line with the national Climate Protection Act. The eleven complaints were studied jointly by the Federal Constitutional Court in *Matteo Feind et al. v. Niedersachsen et al.*[171] Even though this case could be seen primarily as a case about constitutional rights, the bulk of the court's reasoning revolved around the responsibilities of subnational governments vis-à-vis climate change, thus meriting discussion in this chapter.

The plaintiffs sought to hold subnational governments accountable for their climate action. To do so, they drew on the precedent set by the German Constitutional Court in *Neubauer* in 2021 - an in depth discussion of this case is presented in Chapter 5.[172] In that case, the court struck down parts of the German Climate Protection Act for being incompatible with the protection of fundamental rights under the German Basic Law. In particular, the court found that existing emission allowances until 2030 were excessive, as they would use up almost the entire remaining carbon budget estimated by the German Advisory Council on the Environment (SRU)

[171] More information about this case can be found in: https://climatecasechart.com/non-us-case/matteo-feind-et-al-v-niedersachsen/ (last accessed 02-02-2024)
[172] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* [2021] First Senate.

until 2050. For the court, this meant that current emissions were offloading the burden of mitigation onto the future, in a way that risked violating future freedoms.[173]

In *Matteo Feind*, the claimants sought to give such precedent a trickle-down effect, using *Neubauer* to hold subnational authorities accountable for their climate policies. At face value, such undertaking seems feasible. In fact, many of the states brought before the court had already enacted regional climate protection laws that resemble the provisions struck down in *Neubauer*. Nevertheless, the court made a clear distinction between the assessment of federal legislation and the review of subnational legislation sought by the claimants.

The court held that applying the same standard of review to regional legislation as it did to national legislation in *Neubauer* was unfeasible because states, unlike the federal government, have very limited competences to address climate change.[174] In this context, the federal government enjoys significant legislative powers, hence playing a leading role. By contrast, individual states generally lack such broad competences to address climate change, therefore also lacking specific constitutional emission reduction requirements against which to assess compliance. Even though all states are constitutionally obliged to protect the climate, there are no legal specifications indicating which emission reductions are necessary in which state and when.[175] Thus, it cannot be established whether the regulation of specific states had the effect of

[173] ibid 182–4.
[174] *BvR 1565/21/1, BvR 1566/21/1, BvR 1669/21/1, BvR 1936/21/1, BvR 2574/21/1, BvR 2575/21/1, BvR 2054/21/1, BvR 2055/21/1, BvR 2056/21/1, BvR 2057/21/1, BvR 2058/21/1 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 10) para 13.
[175] ibid 14.

limiting future freedom as was determined in relation to federal legislation in *Neubauer.*[176] Put differently, it was not possible to ascertain whether state legislation is compatible with their constitutional obligations to protect the rights of their citizens from climate change because there are not judicially applicable standards against which to make such assessment.

This case is different from the others discussed in this chapter so far. It is not a jurisdictional dispute between national and subnational governments over the validity of a piece of legislation. Nevertheless, it adds to the understanding of the responsibilities of different levels of government in relation to climate legislation. From a different angle, the discussion of the court did not focus on the degrees of autonomy of subnational governments to address climate change, but on the scope of the legal obligations of both national and subnational authorities as a result of the vertical allocation of power. In other words, instead of defining what subnational governments can and cannot do to address climate change, this judgment determines the standards under which they are accountable given their limited capacity to adopt climate measures. In the case of subnational governments, less constitutional autonomy means less constitutional accountability in relation to climate change. Even when there are clear constitutional obligations for subnational authorities, the scope of such obligations is necessarily limited by the leeway granted to national governments to provide an encompassing response to climate change.

[176] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 172) paras 192–256.

6. Conclusion

The cases analysed in this chapter highlight the complexities posed by the legal nature of climate change for the adjudication of jurisdictional disputes between national and subnational authorities. Climate change's polycentricity, ambivalent spatiality, and multivalence defy the traditional categories and methodologies used to allocate powers in comparative constitutional law. These characteristics complicate judicial efforts to delineate the constitutional boundaries of authority between levels of government, as climate-related measures inevitably touch upon a range of interconnected policy areas and demand involvement of governments at all levels.

Polycentricity creates difficulties for courts to determine whether subnational measures fall strictly within their remit or intrude upon national competences. As illustrated by the cases discussed above, almost any climate measure adopted by subnational governments can have repercussions for subjects typically reserved to national governments,[177] such as foreign affairs (e.g, in Catalonia and California) or trade and commerce (e.g. in Victoria and Zacatecas). This does not mean that every subnational measure regulating an aspect of climate change will be struck down in every jurisdiction, as the allocation of competences and understandings of federalism vary significantly across legal systems. Nevertheless, the reasoning of the courts in these cases suggests that it is often difficult to break down the potential impacts of subnational measures across a wide range of subject matters. Courts are thus forced to review subnational legislation using constitutional criteria that are obscured by the nature of climate change.

[177] Buzbee (n 25) 1111.

Climate change's spatiality further complicates these disputes, as the effects of emissions - and thus also of measures regulating them - transcend the territorial boundaries of subnational jurisdictions, even though they originate from localised activities. This situation forces courts to grapple with the tension between the interconnected consequences of emissions and the localised nature of governance structures. This is particularly evident in cases like Zacatecas' carbon tax, where the spatially unbounded nature of emissions prompted the court's distinction between the 'use' and 'affectation' of the atmosphere.

In this context, humility emerges as useful guidance for constitutional courts to resolve climate-related jurisdictional disputes. Humility requires courts to approach such disputes with an awareness of the interconnected and systemic nature of climate governance, recognising the limitations of established doctrines to address the challenges posed by climate change. It invites courts to adopt a perspective that respects the complementary roles of national and subnational governments and seeks to mediate tensions in a way that enhances the effectiveness of multilevel climate governance.

For example, the Mexican Supreme Court's distinction between the 'use' and 'affectation' of the atmosphere reflects doctrinal humility, as the court acknowledged the need to adapt constitutional categories to the realities of climate change. Similarly, the Canadian Supreme Court's application of the double aspect doctrine and its interpretation of provincial inability in light of climate change's polycentricity and spatiality illustrates an openness to interpretations that balance the federal role in structuring climate policy with provincial authority over localised challenges of climate governance. However, the absence of humility can also have profound

impacts of climate governance. In Vanderstock, the Australian High Court's narrow focus on federal authority under Section 90 of the Constitution overlooked the broader implications of its decision for the subnational government's ability to address unintended localised impacts of national legislation. This highlights the risks of judicial approaches that fail to account for the trade-offs and unintended consequences of climate legislation.

Ultimately, the cases examined demonstrate the need for constitutional courts to engage with climate-related disputes in ways that reflect the multilevel, interconnected, and evolving nature of climate governance. By embracing humility, courts can facilitate more nuanced and collaborative outcomes, ensuring that both national and subnational authorities contribute effectively to addressing the multifaceted challenges of climate change while respecting the constitutional balance of powers.

Chapter 3. Justiciability and the Boundaries of Constitutional Adjudication in Climate Disputes

1. Introduction

This chapter provides an overview of the difficulties posed by the legal nature of climate change for understandings of justiciability in constitutional adjudication. Drawing on existing judgments, I argue that climate change's multifaceted nature - spanning economic, international, political dimensions - raises doubts about courts' authority to adjudicate and remedy such disputes. In climate cases, courts frequently confront the tension between recognizing climate change as a constitutional legal issue and regarding it as lying beyond their institutional competence.

Climate change engages political questions regarding, inter alia, economic policy and international governance[1]. Furthermore, climate change is multivalent, meaning that it can be framed in multiple ways as a legal problem, as well as a political one.[2] Courts often need to determine whether climate change raises constitutional legal questions that they can resolve, or whether it is a political problem that exceeds their constitutional competence.[3] In doing so, they are defining the outer boundaries of constitutional adjudication with respect to climate change.

[1] Elizabeth Fisher, Eloise Scotford and Emily Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 The Modern Law Review 173, 184.

[2] Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (University of Chicago Press 2021) 13; George Marshall, *Don't Even Think about It: Why Our Brains Are Wired to Ignore Climate Change* (Bloomsbury Publishing 2014) 95–6; Fisher, Scotford and Barritt (n 1) 180.

[3] A brief discussion of justiciability in rights-based climate cases can be found in César Rodríguez-Garavito, 'Litigating the Climate Emergency: The Global Rise of Human Rights–Based Litigation for Climate Action' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 27–8.

In this context, the polycentricity and multivalence of climate change raise doubts as to whether climate cases are amenable to adjudication at all,[4] or whether the remedies requested by plaintiffs to address climate-related harms are within the remedial capacity of constitutional courts.[5] In some cases, the legal nature of climate change seems to escape judicially manageable standards for the adjudication of climate disputes, leading courts to reject the justiciability of climate cases.

Humility guides courts in navigating the complexities of climate disputes, helping them distinguish between legal and non-legal dimensions. It instructs courts to approach these disputes with an awareness of their institutional limitations, recognising that not all aspects of climate change can or should be resolved through judicial means. At the same time, it encourages a conscientious engagement with the constitutional implications of climate change, ensuring that courts fulfil their responsibility to uphold constitutional frameworks. By adopting a humble yet active posture, courts can strike a balance between respecting the boundaries of their constitutional authority and addressing the legal dimensions of climate disputes deserving consideration in constitutional adjudication.

This dissertation defines justiciability as the judicial techniques determining whether a court can decide a given case.[6] Specifically, this chapter will focus on the use of justiciability as an

[4] For example, see *La Rose et al v Her Majesty the Queen 2020 FC 1008*; *Misdzi Yikh v Canada, 2020 FC 1059* Madam Justice McVeigh; *Environnement Jeunesse v Attorney General of Canada 2021 QCCA 1871*; *Mathur v Ontario, 2020 ONSC 6918*; *Animal Legal Defense Fund v United States, 404 F Supp 3d 1294 (D Or 2019)*; *Clean Air Council v United States, 362 F Supp 3d 237 (ED Pa 2019)*.

[5] Examples include *Juliana v United States, 947 F3d 1159 (9th Cir 2020)*; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4); *Smith v Attorney General [2022] NZHC 1693* [2022] Grice J; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4); *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4).

[6] Margit Cohn, 'Form, Formula and Constitutional Ethos: The Political Question/Justiciability Doctrine in Three Common Law Systems' (2011) 59 The American Journal of Comparative Law 675, 677; Girardeau A Spann, 'Expository

argument for courts to abstain from deciding a climate case due to concerns with respect to i) the appropriateness of climate-related claims in constitutional adjudication, and ii) the suitability and availability of requested remedies in constitutional climate disputes. Thus, I leave aside other elements associated with justiciability in some jurisdictions, such as mootness, ripeness, and standing[7] - which is studied separately in the next chapter.[8]

This chapter proceeds as follows. Section 2 presents methodological and conceptual clarifications. Section 3 provides an overview of justiciability in constitutional climate cases. Section 4 discusses the appropriateness of climate-related claims in constitutional adjudication. Section 5 focuses on the suitability and availability of remedies.[9] Section 6 concludes.

2. Methodological and Conceptual Clarifications

Justiciability is a contentious doctrine.[10] Hence, some clarificatory remarks are necessary before delving into its application in constitutional climate cases. The term *justiciability* corresponds to

Justice' (1983) 131 University of Pennsylvania Law Review 585, 586, 617, 632, 636. Following a somewhat different approach, Endicott has argued that justiciability helps courts identify matters upon which they can *properly* adjudicate. See Timothy Endicott, 'The Reason of the Law' (2003) 48 The American Journal of Jurisprudence 83, 97–100.

[7] Cohn (n 6) 677; Spann (n 6) 632–5; Heather Elliott, 'The Functions of Standing' (2008) 61 Stanford law review 459, 465; Ariel L Bendor, 'Are There Any Limits To Justiciability? The Jurisprudential and Constitutional Controversy in Light of the Israeli and American Experience' (1997) 7 Indiana International & Comparative Law Review 311, 312.

[8] In that sense, I use the term justiciability in the way that it is traditionally understood in the United Kingdom and some other common law jurisdictions like Canada, Israel, or Australia. Examples from multiple common-law jurisdictions can be found in: Cohn (n 6) 677; Camille Cameron and Riley Weyman, 'Recent Youth-Led and Rights-Based Climate Change Litigation in Canada: Reconciling Justiciability, Charter Claims and Procedural Choices' (2022) 34 Journal of Environmental Law 195, 199–200; Brandon Smith, 'Reconceptualising "Justiciability": Crafting a Coherent Framework for Australia's Unique Constitutional Context' (2022) 50 Federal law review 371, 372.

[9] A similar distinction in the understanding of justiciability have been drawn by Endicott. In his words 'the suitability of a dispute for judicial resolution depends not only on the nature of a judicial hearing, but also on the availability and suitability of remedies that judges can give'. See Endicott (n 6) 99. Further reasons for this distinction in the specific context of constitutional climate cases can be found in Chapter 1.

[10] Bendor (n 7) 314; Cohn (n 6) 676.

a doctrine from common law jurisdictions[11] aimed at ensuring that courts respect the limits imposed on them by the principle of the separation of powers.[12] In other words, it regulates the outer boundaries of constitutional adjudication by keeping courts from addressing so-called 'political questions', leaving their resolution to the political branches.[13] At its core, the doctrine serves as a mechanism of judicial restraint, preserving institutional legitimacy and safeguarding the judiciary from deciding cases not suitable for judicial resolution.[14] In other words, justiciability regulates and exposes the limits of the judicial purview.[15]

The concept of justiciability has sparked significant debate in constitutional law scholarship. While traditional supporters view it as 'axiomatic' to constitutional governance under the separation of powers,[16] more recent critics underscore its limitations and risks to the judiciary's role in a constitutional democracy.[17] Recent refinements of this doctrine distinguish between different considerations contained within it, such as *institutional competence* - whether the court has constitutional jurisdiction to adjudicate the matter - *institutional capacity* - whether there are judicial standards to adjudicate the case - and *institutional legitimacy* of courts - concerning their comparative political legitimacy vis-à-vis the political branches.[18] Although an

[11] For example, Brilmayer's overview of the evolution of justiciability attributes its origins to the US Supreme Court's decision in *Madbury v Madison*. See RL Brilmayer, 'Judicial Review, Justiciability and the Limits of the Common Law Method' (1977) 57 Boston University Law Review 807, 807–8.
[12] Aharon Barak, *The Judge in a Democracy* (Princeton University Press 2006) 177–8.
[13] Martin H Redish, 'Judicial Review and the Political Question' (1984) 79 Northwestern University Law Review 1031, 1031–3.
[14] Bendor (n 7) 314–6.
[15] B. V. Harris, 'Judicial Review, Justiciability and the Prerogative of Mercy' (2003) 62 The Cambridge Law Journal 631, 631.
[16] Louis Henkin, 'Is There a "Political Question" Doctrine?' (1976) 85 The Yale law journal 597, 597–8.
[17] Barak (n 12) ch 8; Larissa Parker, 'Let Our Living Tree Grow: Beyond Non-Justiciability for the Adjudication of Wicked Problems' (2023) 81 University of Toronto Faculty of Law Review 54, 55.
[18] See, for example, Smith (n 8); Endicott (n 6) 98. In the specific context of constitutional climate cases in Canada, see Cameron and Weyman (n 8) 200.

in-depth discussion of these elements exceeds the scope of this chapter, I will touch upon them in the context of specific constitutional climate cases, whenever they form part of the reasoning of the court.

While justiciability in the form discussed above is absent in civil law jurisdictions, its function is fulfilled through separation of powers principles. This chapter focuses on the understanding of justiciability in common law jurisdictions, simply because it is in those jurisdictions where it has been explicitly discussed in climate cases. This is a natural result of the inductive comparative method employed in this research. Nevertheless, some cases from civil law jurisdictions have also addressed the tensions posed by climate change for the way constitutional courts understand their role within the *trias politicas*.[19]

Moreover, discussions of justiciability often intersect with principles like the separation of powers,[20] democratic legitimacy of courts, institutional capacity, comity, deference, among others.[21] While these principles are relevant to understand justiciability across jurisdictions, they are addressed here only as they arise in specific cases. The main purpose of this chapter is to reflect of the difficulties arising from the legal nature of climate change for the interpretation of

[19] In particular, see *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Supreme Court) 1C_37/2019; *Stichtig Urgenda v De Staat der Nederlanden* [2015] Rechtbank Den Haag (Hague District Court) ECLI:NL:RBDHA:2015:7196.

[20] A discussion of the institutional role of courts in climate cases can be found in Laura Burgers, 'Should Judges Make Climate Change Law?' (2020) 9 Transnational Environmental Law 55. A critical reflection regarding the relationship between justiciability criteria and the separation of powers can be found in Spann (n 6) 636–44.

[21] Some scholars have also explored the link between justiciability, separation of powers, and comity between courts and the political branches in public law adjudication. See Endicott (n 6) 101–4; Aileen Kavanagh, 'Deference or Defiance? The Limits of the Judicial Role in Constitutional Adjudication' in Grant Huscroft (ed), *Expounding the Constitution: Essays in Constitutional Theory* (Cambridge University Press 2008) 187–9.

justiciability in constitutional adjudication, hence understandings of other principles will only be treated as ancillary to that end.

3. Justiciability in Constitutional Climate Cases

Justiciability frequently arises in constitutional climate cases.[22] Its application has also attracted significant scholarly attention.[23] Typically prompted by governments' objections to judicial intervention, courts often determine whether climate change - encompassing multi-sectoral policies, trade-offs (e.g. environmental protection vs. economic growth or energy security), and ultimately decisions about 'how communities wish to live and how losses and benefits are distributed' -[24] can give rise to disputes amenable to adjudication. Traditionally, open-ended questions of policy and politics have been deemed non-justiciable,[25] and so climate change, often associated with broad policy decisions, becomes a particularly contentious issue. Constitutional courts thus often grapple with whether reviewing state (in)action on climate change is beyond their institutional expertise[26] or whether they are even constitutionally entitled to address climate-related harms, given the wide-ranging implications of climate measures.[27]

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[22] Examples include *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5); *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4); *Smith v Attorney General [2022] NZHC 1693* (n 5); *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4); *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4); *Mathur v. Ontario, 2020 ONSC 6918* (n 4); *Mathur v Ontario, 2023 ONSC 2316*.

[23] See, among others, Hugh S Wilkins, 'The Justiciability of Climate Change: A Comparison of Us and Canadian Approaches' (2011) 34 Dalhousie law journal 529; Cameron and Weyman (n 8); Parker (n 17); Inura Fernando, 'Litigating Climate Change - of Politics and Political Questions: A Comparative Analysis of Justiciability of Climate Change in the United States and Canada' (2018) 49 VUWLR 315.

[24] Fisher, Scotford and Barritt (n 1) 180.

[25] Traditional formulations of justiciability in different jurisdictions can be found in Geoffrey Marshall, 'Justiciability' in Anthony Gordon Guest (ed), *Oxford essays in jurisprudence (First series)* (Clarendon Press 1961); Robert S Summers, 'Justiciability' (1963) 26 The Modern Law Review 530; Endicott (n 6) 95–100; Lorne Sossin, *Boundaries of Judicial Review: The Law of Justiciability in Canada* (Carswell 1999).

[26] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 56; *Smith v Attorney General [2022] NZHC 1693* (n 5) para 152.

[27] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1169–73.

Indeed, in many of these cases, courts have decided that the climate-related legal questions before them were not justiciable, preventing them from considering the case on its merits.[28] A closer look at the reasoning of courts in climate cases reveals that arguments around justiciability are multiple and do not necessarily revolve around whether climate change is simply too 'political'. Drawing on existing judgments, it is possible to identify some 'sticking points' concerning the interpretation and application of justiciability that arise in climate cases due to its legal nature. Indeed, courts have discussed the justiciability of climate cases in light of, among others, the policy-laden nature of the legal questions before them,[29] the polycentricity of climate change,[30] the lack of judicial standards for resolving the case,[31] and the availability of effective remedies to potentially redress the plaintiffs' alleged injuries.[32]

[28] The outcome of such cases explains why scholarly discussions about justiciability in climate cases have surged in the last decade. See, among others Mary Christina Wood, '"On the Eve of Destruction": Courts Confronting the Climate Emergency' (2022) 97 Indiana law journal 239; Scott Novak, 'The Role of Courts in Remedying Climate Chaos: Transcending Judicial Nihilism and Taking Survival Seriously' (2020) 32 Georgetown international environmental law review 743; R Henry Weaver and Douglas A Kysar, 'Courting Disaster: Climate Change and the Adjudication of Catastrophe' (2017) 93 The Notre Dame Law Review 295; Cameron and Weyman (n 8); Lucas Bergkamp and Jaap C. Hanekamp, 'Climate Change Litigation against States: The Perils of Court-Made Climate Policies' (2015) 24 European Energy and Environmental Law Review 102; Parker (n 17); Fernando (n 23); Nathalie J Chalifour, Jessica Earle and Laura Macintyre, 'Coming of Age in a Warming World: The Charter's Section 15(1) Equality Guarantee and Youth-Led Climate Litigation' (2021) 17 Journal of Law & Equality 1.

[29] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 56; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) para 40.

[30] *Smith v Attorney General [2022] NZHC 1693* (n 5) para 149; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 57.

[31] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 28. This is also arguably implicit in the reasoning of the court in *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 40–3.

[32] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 21–9; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) paras 57–63; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 41, 54–5; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 25–40; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 19) para 5.5.

In that sense, I believe that objections to the justiciability of constitutional climate cases do not simply arise from courts' 'conservative',[33] 'antiquated'[34] attitudes concerning the 'political' nature of climate change. In fact, no court has stated that climate change is a 'no-go' area for constitutional adjudication in any of the cases examined in this chapter.[35] As noted by Burgers,[36] the fact that courts express concerns with respect to their role in adjudicating climate disputes does not point to judicial arbitrariness, but to the fact that the novel and intricate reality of climate change demands an evolution of understandings of justiciability that reflect the legal nature of climate change, particularly its polycentricity and multivalence.

a) The polycentricity of climate change

Polycentricity has been widely discussed in constitutional law scholarship as a limit to adjudication - see Chapter 1.[37] The rationale behind this, as famously claimed by Lon Fuller, is that so-called 'polycentric' disputes are unsuitable for adjudication because their complex nature with multiple interdependent factors cannot be reflected adequately through the binary process of adjudication.[38] In other words, polycentric issues raise great difficulties in adjudication, as their judicial resolution may give rise to unintended consequences and affect parties not involved in

[33] Victoria Adelmant, Philip Alston and Matthew Blainey, 'Courts, Climate Action, and Human Rights Lessons from the Friends of the Irish Environment v. Ireland Case' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (2022) 308–9.
[34] Wood (n 28) 254–6.
[35] Rodríguez-Garavito (n 3) 28.
[36] Burgers (n 20) 71.
[37] Some relevant examples include Lon L Fuller, 'The Forms and Limits of Adjudication' (1978) 92 Harvard law review 353; Jeff A King, 'The Pervasiveness of Polycentricity' [2008] Public Law 101; JWF Allison, 'Fuller's Analysis of Polycentric Disputes and the Limits of Adjudication' (1994) 53 Cambridge law journal 367; Jeff King, *Judging Social Rights* (Cambridge University Press 2012) ch 7.
[38] Fuller (n 37) 395–403.

the legal proceedings.[39] Despite extensive refinements to the idea of polycentricity in the field of public law,[40] it is to this day a relevant consideration to assess the appropriateness and intensity of judicial intervention in constitutional adjudication. Specifically, polycentricity bears significance for courts' understandings of their institutional capacity and legitimacy.[41]

The polycentricity of climate change has been frequently considered by courts in their justiciability analysis, often leading them to conclude that judicial intervention is undesirable or illegitimate.[42] Courts often view the polycentric nature of climate change - e.g. its intersections with energy security, foreign affairs, and economic planning - as a limit on judicial intervention. Reviewing climate legislation requires balancing complex, interdependent interests, a task many courts consider beyond their purview, as their intervention would fail to consider the broader socio-political complexities involved in addressing climate change.

b) The multivalence of climate change

Multivalence entails that climate change can be framed in multiple - often contradicting - ways in adjudication. For example, it can be framed as a matter of economic and foreign policy - thus non-

[39] King, 'The Pervasiveness of Polycentricity' (n 37) 101–5.
[40] The idea of polycentricity in constitutional adjudication has been particularly discussed by scholars working in the field of economic and social rights. Notable examples include King, *Judging Social Rights* (n 37) ch 7; Katharine G Young, *Constituting Economic and Social Rights* (Oxford University Press 2012) 134, 165; Malcolm Langford, 'The Justiciability of Social Rights: From Practice to Theory' (Cambridge University Press 2009) 35–7.
[41] These two concepts are usually identified as elements of the justiciability analysis in constitutional law scholarship. See, for example, Lorne Sossin, 'The Unfinished Project of Roncarelli v. Duplessis: Justiciability, Discretion, and the Limits of the Rule of Law' (2010) 55 McGill law journal 661, 672; Smith (n 8) 387–9, 397–402; TRS Allan, *Constitutional Justice: A Liberal Theory of the Rule of Law* (Oxford University Press 2003) 194, 198; King, *Judging Social Rights* (n 37) 130.
[42] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 57; *Smith v Attorney General [2022] NZHC 1693* (n 5) para 149.

justiciable -[43] or as a threat to constitutional rights - thus justiciable.[44] Under the latter, climate impacts on individual rights can be used as a ground of review of states' insufficient action to mitigate climate change, as seen in the majority of cases analysed in this chapter.

Courts are bound to choose between these competing interpretations of climate change, distinguishing between the climate-related questions that merit judicial resolution and those issues that do not have a 'sufficient legal component to warrant judicial intervention'.[45] For example, in *Mathur*, the Ontario Superior Court of Justice concluded that while a Charter application against Ontario's *Cap and Trade Cancellation Act 2018* was justiciable, determining Ontario's fair share of the remaining global carbon budget as part of such application was not.[46] In that sense, the court adjudicated the case without considering the latter point.

The way in which climate change is framed bears significance for understandings of justiciability in constitutional adjudication. If courts are convinced that, for example, the present, or foreseeable future impacts of, climate change on constitutional rights provide a legitimate cause of action, they might deem a case justiciable and examine its merits.[47] If, by contrast, courts conclude that climate change is first and foremost a political problem - despite its potential impacts for individual rights - they might decide that dealing with climate change in adjudication

[43] Fisher, Scotford and Barritt (n 1) 184. This is commonly the way in which States acting as defendants have requested the courts to acknowledge climate change.
[44] A different way of framing climate change in terms of its implications for the allocation of constitutional authority between national and subnational governments was explored in chapter 2. Other narratives reflecting the intersection of climate change and other areas of public law can be found in Catalina Vallejo and Siri Gloppen, 'Red-Green Lawfare? Climate Change Narratives in Courtrooms' in Jackie Dugard, Asuncion Lera St. Clair and Siri Gloppen (eds), *Climate talk : rights, poverty and justice* (JUTA 2013).
[45] *Mathur v. Ontario, 2023 ONSC 2316* (n 22) para 109.
[46] ibid 109–12.
[47] For example, see *Mathur v. Ontario, 2020 ONSC 6918* (n 4) paras 125–40, 259.

is beyond their expertise.[48] They might also conclude that, even if they engaged with climate change in constitutional adjudication, their contribution to its solution could only be marginal and misplaced at best, thus dismissing the justiciability of climate cases for lack of suitable judicial remedies.[49]

In the next two sections, I consider multiple aspects of justiciability that are present in the reasoning of courts in constitutional climate cases - the 'sticking points' mentioned above. For the sake of clarity, I will group these aspects into two categories: arguments concerning the appropriateness of climate disputes in constitutional adjudication, and arguments concerning the suitability and availability of remedies in constitutional climate cases.[50] The first category reflects on whether the legal issues brought before constitutional courts are amenable to adjudication, while the second category concerns the adequacy of courts' remedial intervention in the face of climate change. This two-pronged categorization emerges from both existing scholarship[51] and

[48] For example, see *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 40–3; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 24–5; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 56.
[49] Similar versions of this conclusion can be found in *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 25, 29–31; *Smith v Attorney General [2022] NZHC 1693* (n 5) para 151; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 19) para 5.5; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 29–33.
[50] In this chapter, I will touch upon remedies in climate cases only as an element of the justiciability analysis. A more encompassing reflection about the remedial reach of constitutional courts in relation to climate change is the subject of chapter 5.
[51] The majority of scholarly discussions about justiciability (in relation to political or policy questions) concentrate on its use in relation to the subject matter or legal questions of specific disputes. This is usually associated with notions of institutional competence and institutional capacity. See, among others, Sossin (n 25) chs 1, 4; Geoffrey Marshall (n 25); Summers (n 25); Abram Chayes, 'The Role of the Judge in Public Law Litigation' (1976) 89 Harvard law review 1281, 1295; Fuller (n 37) 355; Allan (n 41) ch 6. Additionally, despite the varying scope and content of the doctrine of justiciability across jurisdictions, the availability and suitability of remedies is often identified as a relevant element of the justiciability analysis. This element is commonly associated with notions of institutional legitimacy of courts in light of the separation of powers. See, for example, Jeff King, *Judging Social Rights* (Cambridge University Press 2012) 130; Endicott (n 1) 99; Cohn (n 1) 708. Discussions of this element in the context of specific climate cases can be found in Cameron and Weyman (n 2) 201; Novak (n 20) 769–74; Wood (n 20) 274–5; Fernando (n 20) 330–1; Parker (n 20) 75–7. A critique of the consideration of remedies in relation to justiciability can be found in Lorne Sossin, 'The Unfinished Project of Roncarelli v. Duplessis: Justiciability, Discretion, and the Limits of the Rule of Law' (2010) 55 McGill law journal 661, 686.

the reasoning of courts in the constitutional climate cases analysed in this section. Furthermore, it seeks to illuminate the specific considerations of constitutional courts regarding the justiciability of climate disputes, beyond the idea that climate change is simply 'political'.

4. Arguments concerning the Appropriateness of Climate-related Claims in Constitutional Adjudication.

The first source of objections to justiciability in constitutional climate cases relates to the object and nature of judicial review. This objection arises for two main reasons: the difficulties of defining the object of judicial review, and the lack of judicial standards of review of open-ended legislative decisions with respect to climate change.

First, courts often dismiss the justiciability of climate cases on the grounds that there are no identifiable pieces of climate legislation or state actions to which the alleged harms can be attributed to. That is to say, courts may conclude that the cases before them are not justiciable because the object of judicial review is exceedingly indeterminate and diffuse.

Second, the seemingly 'political nature' of the governmental decisions challenged before them often lead courts to conclude that the issues before them are not justiciable, reflecting the principle that 'courts do not review the wisdom of the actions of the political branches but only their legality'.[52] This is because climate legislation - being both politically charged[53] and cross-sectoral - lacks well-defined judicial standards for review, leaving courts unsure whether they are evaluating a genuine rights infringement - within their constitutional remit - or venturing into

[52] Jonathan R Siegel, 'A Theory of Justiciability' (2007) 86 Texas law review 73, 125.
[53] Fisher, Scotford and Barritt (n 1) 174.

broad policy-making - beyond their institutional competence. These two objections to justiciability in the context of specific constitutional climate cases are examined in the following subsections.

a) Difficulties to define the object of judicial review in the absence of climate-specific legislation: The Canadian climate cases.

In La Rose v Canada, fifteen young Canadians claimed that the state's contribution to climate change infringed their rights to life, freedom, security, and equality under sections 7 and 15 of the Canadian Charter. [54] The Federal Court dismissed the claim in October 2020, granting the government's motion to strike for lack of reasonable cause of action. The core of the court's reasoning in this case revolved around justiciability. According to the court, 'The question to be decided is whether the Court has the institutional capacity and legitimacy to adjudicate the matter. Or, more generally, is the issue one that is appropriate for a Court to decide'.[55]

From the outset, the court framed the question of justiciability as concerning both the *appropriateness* of the issue before it, as well as the court's *ability* to deal with it. This two-pronged understanding of justiciability reflects the distinction employed in this chapter between the nature of climate-related legal questions, and the availability of remedies in relation to climate change. Consequently, the court deemed the claim not justiciable for two reasons: the

[54] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 2. The plaintiffs also advanced a secondary claim grounded in the public trust doctrine. This second claim was deemed justiciable by the court, although it was struck down on the grounds of not disclosing a reasonable cause of action. The court's rationale concerning the public trust doctrine in this case exceeds the scope of this chapter. The reasoning of the court on this point can be found in ibid 81–100.

[55] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 29.

'undue breadth' of the state's impugned conduct, and the inappropriate remedies sought by the plaintiffs.[56] The court's reasoning in relation to remedies will be explored in section 5.

The first reason against the justiciability of the claim concerned the 'undue breadth' of the state's impugned conduct. The plaintiffs' list of grievances, including inadequate GHG targets and support for fossil fuels,[57] was deemed excessively diffuse, effectively requiring a judicial review of 'the entirety of Canada' policy response to climate change'.[58] In other words, the lack of identifiable pieces of legislation or state action arguably infringing the rights of the claimants prevented the court from conducting a Charter analysis without second-guessing Canada's policy choices in relation to climate change.[59]

Similar reasoning was applied in *Midszi Yikh v Canada*,[60] where the Federal Court dismissed claims by individuals and Indigenous communities alleging Charter violations - sections 7 and 15 -[61] due to Canada's inadequate climate response.[62] The court found the claim non-justiciable due to the absence of a specific law or state action directly infringing on the plaintiffs' rights.[63] In the words of the court, 'There is nothing inherently non-justiciable about the claims

[56] ibid 41. A commentary on the Court's justiciability analysis in this case can be found in Cameron and Weyman (n 8) 201–6; Chalifour, Earle and Macintyre (n 28) 28–30, 38–40.
[57] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 8.
[58] ibid 43.
[59] ibid 46.
[60] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4).
[61] The plaintiffs also advanced a claim under s 91 of the Canadian Constitution, arguing that Canada had breached its duty to enact laws for the 'Peace, Order, and good Government of Canada'. Nevertheless, the Court dismissed the justiciability of this claim, finding that s 91 did not contain any duty to legislate. This claim will not be discussed in this chapter, as the reasoning of the Court did not relate to climate change but rather with the scope of s 91 itself. The Court's reasoning in this regard can be found in ibid 26–47.
[62] ibid 11–5.
[63] This second aspect will be discussed in section B below.

that the Charter sections 7 and 15(1) were breached because of government laws. There are, however, no specific laws or state actions that breach the rights of the Dini Ze' being pled'.[64]

The Federal Court pointed out to an objection to justiciability akin to the one advanced by the court in *La Rose* as elaborated above. Indeed, the court explicitly indicated that the source of non-justiciability in this case stemmed from the lack of an identifiable object of judicial review.[65]

Analogous obstacles were adduced by the Quebec Court of Appeal in *Environnement Jeunesse v Canada,*[66] a class action filed by an environmental NGO alleging that Canada violated their rights by failing to establish adequate GHG reduction targets.[67] The court dismissed the claim, noting that 'In the absence of a statute, constitutional review of government inaction by the courts is highly problematic'.[68] In order words, the court's objection to the justiciability of the claim stemmed, once again, from the lack of a suitable object of review. As the court pointed out later on, 'The situation would be different if the Appellant were challenging the validity of a particular law enacting measures to address GHG emissions'.[69] The Court of Appeal's conclusion is thus clearly akin to the findings of the courts in the previous two cases explored in this section.

The similarities in the courts' reasoning in these cases highlights a key challenge posed by the polycentricity of climate change for constitutional adjudication. Rights-based judicial review typically requires pinpointing the source of an alleged violation - what Canadian courts term the

[64] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 50.
[65] ibid 55.
[66] *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 24–6.
[67] ibid 9.
[68] ibid 25.
[69] ibid 26.

'impugned conduct' - usually a specific piece of legislation. Yet, because climate change stems from cumulative GHG emissions across multiple sectors, attributing its impacts to any particular state action or law -especially in the absence of climate-specific legislation-[70] becomes especially difficult. As a result, courts in these cases concluded that they could not conduct a traditional rights-based analysis, given their inability to identify a sufficiently narrow object of review.[71] They repeatedly declined to review the entirety of Canada's climate policies, effectively failing to locate the alleged violation and dismissing the justiciability of the claims.

In the absence of climate-specific legislation, the polycentricity of climate change can leave state action scattered, making it difficult for courts to pinpoint the precise 'object' of judicial review. Some courts, such as the one in *Environnement Jeunesse*,[72] might argue they are effectively being asked to review government inaction. While the Quebec Court of Appeal noted that inaction can be reviewed in certain cases - e.g. discrimination claims -[73] the broad scope of climate regulation still complicates judicial analysis, as acknowledged in *La Rose* - courts struggle to translate policy choices into legally cognisable claims.

The point I am trying to make here is that because climate change spans multiple regulatory areas - natural resources, energy, agriculture, waste management - it complicates constitutional review in the absence of specific climate legislation.[74] As the court in La Rose put

[70] This is what Scotford and Minas call 'direct' or 'explicit' climate laws. See Eloise Scotford and Stephen Minas, 'Probing the Hidden Depths of Climate Law: Analysing National Climate Change Legislation' (2019) 28 Review of European Community & international environmental law 67, 74–7.
[71] *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 25–6; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 43; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 50.
[72] See *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) para 25.
[73] ibid.
[74] Some of these difficulties have been discussed by Scotford and Minas in the context of scholarly analyses of domestic climate legislation. See Scotford and Minas (n 70).

it, 'Policy choices must be translated into law or state action in order to be amenable to Charter review.'[75] Yet, when scattered across different sectors, such legislation proves elusive. It was only in June 2021 when Canada enacted the *Net-Zero Emissions Accountability Act*, providing statutory climate targets.[76] previously, government plans were merely political intentions,[77] creating a gap that influenced courts' justiciability analyses.

The importance of climate legislation for the justiciability of judicial review can be further appreciated by contrasting the three cases explored above to *Mathur v Ontario,*[78] where plaintiffs challenged Ontario's *Cap and Trade Cancellation Act 2018.*[79] This Act revoked the *Climate Change Mitigation and Low-Carbon Economy Act* of 2016, replacing Ontario's cap-and-trade program with less ambitious climate targets - 30% GHG reduction below 2005 levels by 2030. Alleging violations of their rights to life, liberty, security, and equality under sections 7 and 15 of the Charter,[80] the plaintiffs identified a specific legislative object of review, prompting the Ontario Superior Court to deem the claim justiciable.[81]

[75] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 38.
[76] An analysis of the Act and its multiple domestic and international legal implications can be found in Christopher Campbell-Durufle, 'The Canadian Net-Zero Emissions Accountability Act: A Tepid Response to the Paris Agreement' (2023) 56 UBC Law Review 1.
[77] An analysis of the evolution of climate legislation in Canada until the adoption of the *Net-Zero Emissions Accountability Act* can be found in ibid 348–53.
[78] I will discuss the decisions on a motion to strike advanced by the defendant and the decision on merits, only in what refers to the justiciability analysis of the Court in both cases. The decision on merits will be discussed further in Chapter 5. See, respectively, *Mathur v. Ontario, 2020 ONSC 6918* (n 4); *Mathur v. Ontario, 2023 ONSC 2316* (n 22).
[79] For relevant context surrounding the Act's enactment and its political implications, see Chad Walker, 'Bill 4 and the Removal of Cap and Trade: A Case Study of Carbon Pricing, Climate Change Law and Public Participation in Ontario, Canada' (2020) 33 Journal of environmental law and practice 35, 44–6.
[80] *Mathur v. Ontario, 2020 ONSC 6918* (n 4) paras 30–1. The claimants in this case also challenged the Act's repeal of previous legislation, but this argument was swiftly dismissed by the Court and will therefore not be discussed in this section.
[81] ibid 45–71.

This stood in contrast to earlier cases—like *La Rose*—where courts found no clear legislative anchor. The *Mathur* court distinguished the challenge as involving 'very specific governmental actions',[82] suggesting that climate statutes can offer a necessary 'scaffolding' for justiciability.[83] Nevertheless, constitutional adjudication absent explicit legislation remains possible in certain jurisdictions, as illustrated by cases in Chapters 5 and 6 where courts have intervened against government inaction.[84] The differing stances on the adjudication of government inaction in relation to climate change can therefore be explained by looking at differences in legal cultures.

Bookman argues that 'legal opportunity structures' vary across jurisdictions, influencing how courts handle rights-based climate claims and imposing differing justiciability limits.[85] This means that the *catalytic* role of constitutional rights in some jurisdictions faces 'strong headwinds' in others.[86] In anglophone common-law systems—such as Canada, Ireland, and New Zealand—specific climate legislation often proves essential for grounding constitutional arguments.[87] Although Bookman discusses legislation's broader catalytic role in climate litigation, his insights help explain why anglophone common-law courts often reject rights-based claims absent a statutory framework. This perspective aligns with earlier findings on the importance of climate legislation for justiciability. It also places the Canadian cases in context: while they reveal

[82] ibid 132.
[83] Sam Bookman, 'Catalytic Climate Litigation: Rights and Statutes' (2023) 43 Oxford Journal of Legal Studies 598, 625.
[84] Examples include *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* [2018] Luis Armando Tolosa Villabona; *Shrestha v The Office of the Prime Minister & Ors NKP, Part 61, Vol 3*.
[85] Bookman (n 85) 599, 604–5.
[86] ibid 608.
[87] ibid 599.

certain difficulties in adjudicating climate disputes, those challenges may not apply in jurisdictions with significantly dissimilar constitutional structures.

Overall, the Canadian cases show that objections to justiciability in constitutional climate cases do not necessarily originate in courts' concerns about the 'political' nature of climate change, but often stem from the difficulties posed by its legal nature for the exercise of judicial review of state action and inaction. The cases also underscore the facilitating role played by climate legislation for constitutional adjudication in *some* jurisdictions, as suggested by Bookman and illustrated by *Mathur*.

The contrasting outcomes between *Mathur* and other cases further illustrate the role of humility in recognising the value of clear legislative scaffolding. Humility enables courts to acknowledge the challenges posed by claims rooted in scattered legislation, while remaining open to addressing narrower, more legally defined disputes within their capacity. By anchoring their reasoning in specific legislative objects, courts can exercise measured engagement with climate disputes while respecting their institutional role.

b) The 'political' nature of climate change and the lack of judicial standards to adjudicate constitutional climate disputes

An additional objection to the justiciability of constitutional climate disputes concerns the 'political' nature of climate legislation and the absence of clear judicial standards to review such legislation. Drawing on existing judgments, I believe that this difficulty stems from three interrelated factors: i) the 'political' and cross-sectoral nature of climate legislation, and ii) the

lack of clear judicial standards to review climate legislation, and iii) the multivalence of constitutional norms and the novelty of climate change.

i) The 'political' and cross-sectoral nature of climate legislation

First, climate legislation is inherently cross-sectoral and polycentric, typically requiring courts to grapple with ethical or scientific baselines that do not easily translate into conventional legal criteria and bivalent forms of adjudication - *lawful/unlawful*.[88] Objections to justiciability often arise because climate disputes challenge legislation spanning multiple sectors, while also demanding courts to engage in value-laden decisions about fairness, responsibility, and long-term impacts.

In climate cases, the issue is not merely that climate legislation consists of political decisions - after all, as noted by Grimm, 'the objects of judicial review are by necessity political acts'.[89] Rather, climate legislation often encompasses broad, cross-sectoral policies with far-reaching implications for, among others, energy security, economic planning, and foreign affairs. These decisions require balancing complex, and even competing, interests, often making courts reluctant of intruding on the role of the political branches by second-guessing the wisdom or effectiveness of legislative determinations. In that sense, this objection to justiciability is also related to courts' understandings of judicial capacity and legitimacy vis-à-vis the political branches.

[88] Timothy AO Endicott, 'The Impossibility of the Rule of Law' (1999) 19 Oxford Journal of Legal Studies 1, 15; Kavanagh (n 21) 194.
[89] Dieter Grimm, 'What Exactly Is Political about Constitutional Adjudication?' in Christine Landfried (ed), *Judicial Power: How Constitutional Courts Affect Political Transformations* (Cambridge University Press 2019) 308.

This objection to justiciability has been repeatedly discussed in constitutional climate cases. In *Animal Legal Defense Fund et al. v United States*, the Oregon District Court dismissed a claim alleging the federal government's failure to protect individuals from climate change violated their constitutional right to a safe environment.[90] The court concluded the claim was non-justiciable, as the plaintiffs sought 'adjudication of a political question' instead of a decision on the rights of individuals.[91] In this case, the court claimed that it lacked the power to 'review and assess the entirety of Congress's and the Executive Branch's programs and regulatory decisions' concerning climate change,[92] and that to 'suggest otherwise is to overlook "the separate and distinct constitutional role" of the judiciary'.[93] The District Court was thus reluctant to review climate regulation because it would engage 'political questions' improper of the judiciary.

A similar consideration can be found in the reasoning of the Pennsylvania Eastern District Court in *Clean Air Council et al v United States*.[94] In this case, the court dismissed a claim challenging the Trump's administration amendments to environmental laws under the Due Process Clause and the 'public trust doctrine'.[95] The court dismissed the claim citing some 'prudential considerations' that prevented it from reviewing the 'wisdom and soundness of Executive action'.[96] In other words, the court reached a similar conclusion as the Oregon District

[90] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1297.
[91] ibid 1300.
[92] ibid 1301.
[93] ibid 1301.
[94] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4).
[95] *ibid 242.*
[96] ibid 250.

Court, implying that judicial review in this case would intrude on the powers of the political branches.[97]

The courts in some of the Canadian cases explored in the previous section provided analogous reasons against the justiciability of the claims before them. In *Environnement Jeunesse*, the court concluded that the claim was non-justiciable because 'The nature of the issues, in the context described, requires the courts to leave it to the legislature to make the appropriate choices'.[98]

These cases illustrate a recurring judicial challenge: the cross-sectoral and political nature of climate legislation often leads courts to view claims as questioning the wisdom or effectiveness of policies rather than their constitutionality. This perception shifts the focus from assessing rights violations to addressing 'political' questions, which courts may deem outside their institutional competence. In other words, courts may perceive the plaintiffs' demands as addressing the broader question of how climate change should be regulated, rather than whether specific government actions violate their constitutional rights.

ii) The lack of clear judicial standards to review climate legislation

Second, the lack of clear judicial standards further complicates the justiciability of climate legislation, particularly in rights-based claims.[99] Courts often cite the absence of concrete

[97] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1301.
[98] *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) para 40.
[99] Bookman (n 85) 625.

benchmarks to evaluate broad, cross-sectoral policies as a key reason for deeming climate disputes unsuitable for adjudication.[100]

For example, in *Misdzi Yikh*, the Federal Court stated that the dispute was 'beyond the reach of judicial interference',[101] arguing that the claim lacked a 'sufficient legal component to anchor the analysis as this action is a political one that may touch on moral/strategic/ideological/historical or policy-based issues and determinations within the realm of the remaining branches of government'.[102] The lack of a 'sufficient legal component' or 'legality' indicates an objection to justiciability rooted in the absence of clear judicial standards to review climate legislation.

The justiciability analysis of the court in *Mathur* further illustrates this point. As stated above, the court accepted that the plaintiffs' rights-based arguments were generally justiciable, finding that sections of the 2018 Act could, prima facie, be reviewed under established legal tests derived from sections 7 and 15 of the Charter.[103] However, the court deemed one aspect of the claim non-justiciable: the determination of Ontario's and Canada's 'fair share' of the global carbon budget.[104]

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[100] A scholarly attempt at offering judicial standards for adjudicating so-called 'systemic mitigation cases' (some of which are discussed in this chapter), can be found in Lucy Maxwell, Sarah Mead and Dennis van Berkel, 'Standards for Adjudicating the next Generation of Urgenda-Style Climate Cases' (2022) 13 Journal of Human Rights and the Environment 35.

[101] *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 72.

[102] ibid.

[103] *Mathur v. Ontario, 2023 ONSC 2316* (n 22) para 107. The court ultimately found that the challenged actions did not amount to a violation of the claimants' rights (paras 171, 183). The court's reasoning in relation to the merits of the case will be discussed in chapter 5.

[104] ibid 109–11.

The plaintiffs argued that Ontario's emissions reduction target exceeded its fair share of the global carbon budget, failing to protect them from catastrophic climate change.[105] In other words, the claimants proposed a standard of review consisting of Ontario's fair share, allegedly determined by science.[106] The court found that any consideration of Ontario's 'fair share' did 'not have a sufficient legal component',[107] as the court lacked 'the institutional capacity and legitimacy' to consider the factors that would determine Ontario's fair share, e.g., historical responsibility for global warming, wealth, energy generation choices.[108]

In the view of the court, there was no legal standard that could be employed to consider Ontario's fair share as part of its assessment without engaging in value judgment about competing approaches.[109] Indeed, the scientific experts before the court acknowledged that Ontario's fair share could not be objectively determined by science, as it involves ethical considerations of what *fairness* demands in the context of climate change.[110]

These cases highlight that the absence of clear judicial standards to review climate legislation often renders constitutional climate disputes unsuitable for adjudication. Questions like a government's 'fair share' of emissions exemplify the difficulty of applying traditional legal reasoning to complex, interdisciplinary issues. Without established benchmarks, courts are

[105] Ontario Superior Court of Justice, 'Notice of Application' paras 60–66 <https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2019/20191125_CV-19-00631627_complaint.pdf> accessed 23 May 2024.
[106] *Mathur v. Ontario, 2023 ONSC 2316* (n 22) paras 40–50.
[107] *ibid 109.*
[108] ibid.
[109] ibid 110.
[110] ibid 26–30.

reluctant to assess decisions involving a mix of scientific, ethical, and policy considerations, reinforcing the perception that climate disputes resist straightforward legal resolution.

iii) The multivalence of constitutional norms and the novelty of climate change

As anticipated in Chapter 1, constitutional law is, like climate change itself, notoriously multivalent.[111] The multivalence of climate change compounds that of constitutional law, exacerbating the difficulties it poses for the justiciability of climate disputes. In jurisdictions where constitutional courts rely heavily on this doctrine to define the boundaries of their - mainly common law systems - the political nature of climate legislation is met with the multivalence of constitutional provisions, often leading courts to conclude that climate disputes are unsuitable to adjudication.

Constitutional structures - mainly enforceable rights and duties - are generally open-textured and vague, meaning that translating them into standards of what is permissible in national policy settings is challenging.[112] Additionally, climate change is still a novel legal issue. As stated by Fisher, 'climate change did not originally feature in legal imagination, and thus there is a need to evolve our mental constructs'.[113] This is evident in the fact that the majority of the world's constitutions do not contain any express mention of climate change - let alone

[111] Owen Fiss, *The Law as It Could Be* (New York University Press 2003) 152–60.
[112] Bookman (n 85) 625.
[113] Elizabeth Fisher, 'Climate Change and Statutory Construction: Administrative Law Expertise and "New" Emergencies' (2023) 27 The Edinburgh Law Review 322, 342.

enforceable climate-related provisions.[114] Thus, courts do not usually have easily applicable precedents nor straightforward standards of adjudication suitable for climate disputes.

Furthermore, the impacts of climate change have only recently been framed as violating constitutional rights, and what plaintiffs now routinely challenge as unconstitutional state action consists of legislation that has been uncontroversial until very recently - fossil fuel subsidies, animal farming, mining.[115] Constitutional law is thus to some extent indeterminate to govern climate disputes, leading courts to dismiss the justiciability of climate disputes over concerns about the inadequacy of judicial review with respect to complex policy determinations.

To fill this gap, plaintiffs ask courts to recognise new rights[116] and state duties,[117] or to engage in 'revolutionary thinking',[118] expanding existing doctrines to encompass state protection from climate impacts. Yet, constitutional courts are often reluctant to make significant developments of legal doctrines with respect to climate change, given its scale and complexity. When the claims rely on such developments as the grounds of review of state action, court's negative to engage with them is fatal to the justiciability of the cases.[119]

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[114] Navraj Singh Ghaleigh, Joana Setzer and Asanga Welikala, 'The Complexities of Comparative Climate Constitutionalism' (2022) 34 Journal of Environmental Law 517, 517, 523–5.
[115] Fisher (n 115) 342.
[116] Examples include *Friends of the Irish Environment v Ireland [2020] IESC 49* [2020] CJ Clarke (Supreme Court of Ireland) [8]; *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 12.
[117] For example, see *Smith v Attorney General [2022] NZHC 1693* (n 5) paras 52–155; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 81–100.
[118] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1.
[119] This is what in the United States is called 'failure to state a claim', which implies that the legal basis upon which the claimants seek relief is untenable. See, for example ibid 8–10 where the court rejected the existence of a fundamental 'right to wilderness' under the First, Fifth, Ninth, and Fourteenth Amendments; and *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 79) 14–20 where the court denied the existence of a 'due process right to environmental quality' and the right to a 'life-sustaining climate system'.

Notwithstanding, it is once again worth noting that notions of justiciability are highly contextual. The difficulties of deriving standards of adjudication from open-textured constitutional rights is a strong concern in jurisdictions without a culture of expansive judicial interpretation and where lower courts are reluctant to recognise not enumerated constitutional rights.[120] Yet, these problems are not fatal to the justiciability of climate disputes in jurisdictions where courts are willing to develop standards of rights-based judicial review of state action or inaction in relation to climate change (see Chapter 5). As noted by Grimm, 'The borderline between legal and nonlegal arguments may be drawn differently by different methods (…) The adaptation of old norms to modern challenges would be politics for one methodological school but law for another'.[121] In other words, the objections to the justiciability of climate change associated with its seemingly 'political' nature are a result of the legal methods employed by courts in certain jurisdictions and their understandings of what constitutes the outer limits of constitutional adjudication.

Furthermore, even in those jurisdictions where the 'political' nature of climate change acts as a strong objection to justiciability, courts have left the door open to consider climate-related claims in the future. Indeed, they have explicitly acknowledged that, in the appropriate context, constitutional adjudication may be a suitable forum to review state's action with respect to climate change.[122] This means that climate change is not considered a 'no-go area' in itself.

[120] Bookman (n 85) 599.
[121] Grimm (n 91) 315.
[122] See, *inter alia, Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) para 40; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 45; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 102; *Smith v Attorney General [2022] NZHC 1693* (n 5) 145.

The analysis in this subsection illustrates the intricate challenges facing courts when assessing the justiciability of constitutional climate disputes. These challenges stem from the inherently political and cross-sectoral nature of climate legislation, the absence of clear judicial standards of review, and the multivalence of constitutional norms when applied to the novel and complex context of climate change. Together, these factors reveal the structural difficulties of translating the unique dimensions of constitutional climate disputes into conventional forms of judicial review.

However, these difficulties also underscore the value of judicial humility as a guiding principle in navigating the complexities of constitutional climate adjudication. Humility requires courts to acknowledge the limits of their institutional competence while remaining open to engaging with the legal dimensions of climate change in ways that do not seek to dictate policy but rather provide meaningful constitutional oversight. This involves recognising the ethical, scientific, and policy-laden nature of climate disputes, without dismissing their legal components outright.

Humility empowers courts to delineate the boundary between their role as interpreters of the constitution and the domain of political decision-making. By carefully engaging with constitutional rights and duties in climate cases, courts can contribute to the evolution of constitutional law in a manner that respects the separation of powers while addressing the challenges posed by climate change. This judicial approach reinforces the idea that humility is not a retreat from responsibility but a method for responsibly fulfilling the judiciary's role in safeguarding constitutional principles in the face of climate change.

5. Arguments around the Suitability and Availability of Remedies in Constitutional Climate Disputes

In addition to the appropriateness of the claims explored in the previous section, the availability and suitability of judicial remedies is often considered an element of the justiciability analysis in constitutional adjudication. This stems from the idea that every right, when infringed, must have a judicial remedy to redress the situation.[123] Practically, this means that courts should not entertain claims for which they cannot provide a *suitable* and *available* remedy - understood as a remedy that both addresses the alleged injuries and is within the court's power to award.[124]

In the context of climate disputes, the adequacy of remedies is often a central point of contention.[125] Courts frequently assert that they cannot redress the claimants' alleged injuries because, among other reasons, climate change is irreversible and governments are only responsible for a small portion of the GHG emissions causing climate change and harming the claimants.[126] Furthermore, courts argue that any meaningful remedy would demand ongoing judicial oversight to evaluate the sufficiency of the government's climate response over decades, potentially drawing courts into complex policymaking.[127] In other words, courts are often

[123] Richard H Fallon Jr, 'Constitutional Remedies: In One Era and out the Other' (2023) 136 Harvard Law Review 1300, 1301.
[124] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1170.
[125] This was most famously the case in ibid 1169–73.
[126] ibid 1169–73; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 50–5; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 19) para 5.5.
[127] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1173; *Smith v Attorney General [2022] NZHC 1693* (n 5) paras 149–57; *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 52–5; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) paras 64–5.

skeptical that the remedies requested by the plaintiffs are capable of redressing their individual injuries, or that such remedies are within the power of courts to award and enforce.

The above objections are closely related to the legal nature of climate change as explored in Chapter 1, underscoring the tensions between its global, systemic nature and the traditional role of courts in resolving discrete legal disputes in a bivalent form.[128] In other words, they relate to the polycentricity, spatiality, and temporality of climate change. The exploration of the courts' reasoning presented in this section will illustrate the specific challenges to the justiciability of remedies in climate disputes. It is nevertheless worth nothing that an exploration of remedies in constitutional climate disputes is the subject of Chapter 6. Thus, in this section I will only elaborate on remedies as an element of the justiciability analysis, without exploring the reach of courts' remedial power in relation to climate change.

In *Juliana v United States*, the Court of Appeals for the Ninth Circuit decided a claim by 21 'young citizens', an environmental organisation, and a 'representative of future generations', alleging that federal fossil fuel policies violated their constitutional rights.[129] To redress their injuries, they sought declaratory and an injunction ordering the government to 'phase out fossil fuel emissions and draw down excess atmospheric CO2'.[130]

Although the court found standing based on particularised injuries[131] partly traceable to government policy,[132] it rejected the requested remedies as non-justiciable. The court rejected

[128] Endicott (n 90) 15; Kavanagh (n 21) 194.
[129] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1165.
[130] ibid.
[131] ibid 1168.
[132] ibid 1169.

the suitability of declaratory relief on the grounds that it would not mitigate the claimants' asserted injuries.[133]

The suitability of the injunctive relief sought by the plaintiffs was further dismissed by the court, for two reasons. First, the court relied on the plaintiffs' experts to affirm that an order to cease government's promotion of fossil fuels would not 'suffice to stop catastrophic climate change or even ameliorate their injuries'.[134] Second, even though an injunction could ameliorate the situation of the claimants, such relief could not be provided by the court.[135] According to the ruling, any effective plan to reduce GHG emissions would require a host of policy decisions whose supervision or enforcement was beyond the constitutional powers of the court.[136]

The court thus dismissed the plaintiffs' claim on the grounds that the requested remedies were inconsequential to alleviate such injuries given the scale and nature of climate change; and that ameliorating the situation of the claimants by reducing GHG emissions involves a wide range of policy considerations that would be inappropriate for the court to make. This reasoning illustrates the central justiciability obstacle in constitutional climate cases where courts find the requested remedies either insufficient to address climate harms or outside their institutional competence.

[133] ibid 1170.
[134] ibid.
[135] ibid 1171–2.
[136] ibid 1173.

Other decisions have echoed similar objections to justiciability of remedies.[137] In *La Rose*, for instance, the plaintiffs sought multiple declarations and an injunction compelling Canada to develop a 'climate recovery plan' under court supervision.[138] The court found that declaratory relief would not 'address the underlying harms'[139] and require the court to take on a 'public inquiry role' to determine whether Canada's 'overall approach to climate change is effective'.[140] As regards injunctive relief, the court concluded that such a plan was 'devoid of content and meaning in addressing the Plaintiffs' alleged rights, if violated'.[141] Furthermore, the court claimed that it would entail 'an incursion into the policy-making functions of the executive and legislative branches'.[142]

The courts in both *Juliana* and *La Rose* provided similar objections to the justiciability of remedies in constitutional climate disputes. Unlike the arguments discussed in the previous sections, these objections do not relate to the appropriateness of climate-related legal questions in constitutional adjudication. Instead, they concern the suitability of the requested remedies in light of the constitutional courts' institutional capacity and legitimacy.

Any mitigation measure - such as the injunctions requested by the plaintiffs in both cases - would only prevent further worsening of the living conditions of individuals in decades to come (see Chapter 1). These measures are inherently preventive and forward-looking, which contrasts

[137] See *Smith v Attorney General [2022] NZHC 1693* (n 5) paras 149–52; *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 4) paras 39–42; *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) paras 59–71.
[138] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 12.
[139] ibid 52.
[140] ibid.
[141] ibid 55.
[142] ibid.

sharply with traditional notions of redressability. Courts typically view remedies as tools to address present injuries or provide immediate relief to claimants.[143] However, mitigation does not directly redress the current harms experienced by claimants but instead seeks to avoid future harms. This disconnect creates a mismatch between the preventive function of mitigation measures and the conventional expectations of judicial remedies, leading courts to question whether such remedies satisfy justiciability requirements.

As anticipated above, objections to the justiciability of remedies are deeply intertwined with the legal nature of climate change.[144] First, due to its temporality, mitigation measures - such as the injunctions sought by the plaintiffs in these cases - would only prevent the further deterioration of living conditions in future decades (see Chapter 1). Consequently, these measures are inherently forward-looking and preventive, which contrasts with the typical judicial expectation that remedies address current injuries. In other words, mitigation does not directly redress the present harm claimants experience but rather aims to avert future harms. This disconnect between preventive action and traditional concepts of redressability creates a mismatch, prompting courts to question whether such measures meet justiciability requirements.

Second, the polycentricity of climate change implies that addressing any climate-related harm through mitigation requires multiple policy instruments to reduce GHG emissions across sectors of the economy. As the cases above illustrate, courts often view the wide-ranging

[143] E.g. *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1170–1.
[144] A similar argument can be found in Rodríguez-Garavito (n 3) 28.

implications of such measures as exceeding their institutional capacity and legitimacy. Indeed, courts often claim that ordering comprehensive plans to reduce GHG emissions would amount to an unacceptable incursion into the realm of the executive and legislative branches.[145] In other words, courts reason that such remedies would require them to dictate policy standards according to which they could assess governments compliance with the judicial order, thus leading the courts to assume a policy-laden role improper of the judiciary.[146] The polycentricity of climate change thus demands wide-ranging transformation to redress individual injuries, leading courts to conclude that climate claims are non-justiciable for lack of available remedies.

Third, the spatiality of climate change, characterised by *global* causes and *locally-differentiated* impacts, further undermines the suitability of remedies. As noted above, countries and states are only responsible for a fraction of global GHG emissions. Very often, even the total elimination of a country's emissions may not suffice to halt the growth of global atmospheric concentrations of GHG, let alone reduce them as required to ameliorate the climate-related harms of the claimants.[147] This spatial mismatch highlights the limited capacity of national or regional mitigation efforts to fully ameliorate the harms suffered by claimants. Courts may interpret this limitation as a further indication that climate claims lack suitable remedies, thus rendering them non-justiciable. The inherently transboundary nature of climate change

[145] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) para 55; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1171–3.
[146] *La Rose et al. v Her Majesty the Queen 2020 FC 1008* (n 4) paras 55–6; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1172.
[147] This was explicitly discussed by the court in *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1170–1.

undermines the effectiveness of judicial interventions confined to the territorial jurisdiction of individual courts, reinforcing their reluctance to adjudicate such claims.

The challenges highlighted in this section underscore the intricate tensions between the systemic, intertemporal, global nature of climate change and the judiciary's traditional role in addressing specific, immediate harms. The temporality, polycentricity, and spatiality of climate change complicate the feasibility of judicial remedies, often leading courts to conclude that such claims are non justiciable.

However, these complexities also reveal the potential for judicial humility to play a pivotal role in navigating these difficulties. By recognising the inherent limitations of their capacity to prescribe and oversee broad policy measures, courts can adopt a more nuanced approach to remedies in climate cases. This entails engaging with the legal dimensions of climate disputes in a manner that respects the separation of powers while striving to uphold constitutional principles. Humility does not demand judicial abdication but rather invites courts to explore innovative forms of constitutional oversight that align with their role while acknowledging the multi-layered governance challenges posed by climate change. Through this lens, humility instructs courts to assume the assessment of their remedial capacity responsibly.

6. Conclusion

This chapter suggests that climate change is pushing the boundaries of what is commonly understood as amenable to adjudication, adding layers of complexity to the interpretation of

justiciability requirements and often creating obstacles for the adjudication of the merits of climate cases in multiple jurisdictions.

Controversy surrounding justiciability originates from the legal nature of climate change, which poses difficulties for the interpretation of the legal elements associated with this concept - i.e. the identification of the object of judicial review, the existence of judicial standards to adjudicate the case, and the suitability and availability of requested remedies. By looking at these difficulties in the context of specific cases, this chapter aims to help both courts and lawyers in understanding the controversies surrounding the interpretation of justiciability in climate cases. Furthermore, my analysis in relation to justiciability also underscores the importance of domestic legal frameworks to understand courts' reasoning in climate cases. Given that justiciability is a highly contextual concept predominantly employed in common law systems, the difficulties posed by the legal nature of climate change for its interpretation in adjudication may not be extrapolated to jurisdictions where justiciability has a different scope and meaning in setting the outer bounds of adjudication.

At the heart of these debates lies the tension between the judiciary's traditional role and the novel demands posed by climate cases. Courts face the dual challenge of ensuring that they do not overstep their institutional bounds while also upholding their constitutional responsibility to protect rights and provide oversight of government action. This delicate balance underscores the importance of judicial humility as a guiding principle in navigating these disputes.

Humility, in this context, does not instruct judicial abdication but a recognition of the judiciary's limitations and its potential to engage constructively within those limits. By adopting a

posture of humility, courts can acknowledge the multiple challenges posed by climate change for constitutional adjudication and approach their role with sensitivity to the boundaries of their institutional competence. This may involve engaging with constitutional questions where clear legal standards can be developed, while refraining from prescribing policy solutions that lie beyond their expertise. At the same time, humility invites courts to actively participate in the evolution of constitutional norms, ensuring that climate disputes are not dismissed outright but carefully considered in light of their legal and constitutional implications.

In this way, humility can serve as a bridge between the judiciary's traditional role and the novel demands of climate adjudication, enabling courts to responsibly navigate the complexities of climate disputes. By striking this balance, courts can contribute to the development of constitutional law in ways that respect the separation of powers while addressing the pressing realities of climate change.

Chapter 4. Standing in Constitutional Climate Cases.

1. Introduction

The doctrine of standing represents one of the most contested and consequential thresholds for constitutional climate cases, as it dictates who is legally entitled to bring a claim before a constitutional court. Although its specific scope and content varies across jurisdictions, standing in constitutional actions generally requires individual plaintiffs to substantiate that they currently suffer, or are at imminent risk of suffering, particularised injuries attributed to the actions of the state.[1] Furthermore, some jurisdictions require plaintiffs to substantiate that they are particularly affected in their legal interests, in a way that distinguishes them from the rest of society - i.e. especially and not just individually.[2]

Establishing who has standing to initiate a climate-related constitutional controversy is far from straightforward due to the legal nature of climate change.[3] Given that climate impacts have the potential to affect every person in the world due to their spatiality, the determination of who is *individually* affected by, and suffers *particularised* injuries from, climate change is often subject

[1] Traditional formulations of standing in the United Stated can be found in Cass R Sunstein, 'Standing and the Privatization of Public Law' (1988) 88 Columbia law review 1432; Kellis E Parker and Robin Stone, 'Standing and Public Law Remedies' (1978) 78 Columbia law review 771; Seth Davis, 'The New Public Standing' (2019) 71 Stanford Law Review 1229. An overview of standing in comparative constitutional law can be found in Richard S Kay (ed), *Standing to Raise Constitutional Issues: Comparative Perspectives* (Bruylant 2005).

[2] As will be explored in Section 3, this is the standard developed by the Mexican Supreme Court for claims where plaintiffs claim a violation of their right to a healthy environment. See *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* [2022] Segunda Sala [56–75].

[3] César Rodríguez-Garavito, 'Litigating the Climate Emergency: The Global Rise of Human Rights–Based Litigation for Climate Action' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 37. See also Elizabeth Fisher, Eloise Scotford and Emily Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 The Modern Law Review 173, 183–8.

to contestation.[4] Additionally, the interconnected spatiality of climate change raises legal questions concerning the *extraterritorial* impacts of domestic emissions.[5] The temporality of climate change complicates the assessment of when plaintiffs are *presently* or *imminently* affected by climate impacts resulting from GHG emissions.[6] Polycentricity makes the attribution of governments' responsibility for climate impacts significantly more complex, as courts are required to consider a complex causal chain linking domestic emissions to individual injuries.[7]

The above challenges for the interpretation of standing requirements in constitutional adjudication have led courts to dismiss several climate disputes for lack of standing.[8] More specifically, courts have concluded that plaintiffs lack standing because i) they are not *presently* affected or at *imminent risk* of being affected by climate change;[9] ii) the alleged injuries are not individualised but rather generalised grievances stemming from climate change;[10] or iii) they are not directly affected by actions attributable to the government.[11]

[4] Examples include, among others: *Smith v Attorney General [2022] NZHC 1693* [2022] Grice J [183–4]; *Snider v Biden, 3:22-cv-399 (ED Tenn Jul 31, 2023)* 6–7; *Animal Legal Defense Fund v United States, 404 F Supp 3d 1294 (D Or 2019)* 1300; *Clean Air Council v United States, 362 F Supp 3d 237 (ED Pa 2019)* 247–9; *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* (n 2) paras 56–76.

[5] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* [2021] First Senate [90, 173–4]; Cass R Sunstein, 'Climate Change Cosmopolitanism' (2022) 39 Yale Journal on Regulation 1012, 1012.

[6] *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Supreme Court) 1C_37/2019 [5.4]; *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 246–7; *Smith v Attorney General [2022] NZHC 1693* (n 4) paras 183, 193; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 130.

[7] *Juliana v United States, 947 F3d 1159 (9th Cir 2020)* 1169–70; *Mathur v Ontario, 2020 ONSC 6918* [164–71].

[8] Rodríguez-Garavito (n 3) 37.

[9] *Smith v Attorney General [2022] NZHC 1693* (n 4) paras 183–4, 193; *Snider v. Biden, 3:22-cv-399 (E.D. Tenn. Jul. 31, 2023)* (n 4) 7.

[10] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1300; *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* (n 2) paras 56–76.

[11] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247–9.

Additionally, the interpretation of standing requirements in constitutional climate cases poses a dilemma for courts: liberalising these requirements can open the floodgates for anyone to start climate-related legal proceedings - in light of climate impacts' collective and global nature - while restricting their scope might entail that there are no appropriate claimants to initiate such proceedings.[12] This is particularly relevant in claims for the protection of constitutional rights from climate impacts, as these claims typically require the identification of an affected party or *victim*.[13]

In this context, humility - in particular doctrinal humility - offers a guiding principle for courts interpreting standing requirements in climate cases. Doctrinal humility invites a cautious yet open engagement with the legal nature of climate change when interpreting standing requirements. Rather than treating existing doctrines as static in the face of novel realities, doctrinal humility invites courts to consider interpretations of standing requirements that account for the scale and nature of climate-related injuries. For example, it may invite courts to recognise that the collective nature of climate impacts can also manifest as individual injuries, thereby rejecting the rigid dichotomy between individual and generalised grievances.[14] Additionally, it may encourage courts to engage with the temporality of climate change by

[12] This specific dilemma was recently considered by the European Courts of Human Rights in *Verein KlimaSeniorinnen Schweiz and Others v Switzerland (application no 53600/20), (ECHR, 09 April 2024)* [478–88].

[13] Fisher, Scotford and Barritt (n 3) 189. As will be explored later in this chapter, similar standing requirements exist for claims of judicial review of legislation in some jurisdictions. For example, see *G 144-145/2020-13, V 332/2020-13* (Verfassungsgerichtshof (Austrian Constitutional Court)) [53–71].

[14] E.g. *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* [2018] Luis Armando Tolosa Villabona 11–4; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1168; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 110.

rethinking what it means to be 'presently' affected by state action in light of *future* and *irreversible* harms.[15]

The above examples concerning the use of humility in interpreting standing requirements are not meant to suggest a single 'right' answer. Courts may arrive at different interpretations while remaining humble, as long as they engage with the challenges and dilemmas present in climate cases. A humble approach requires courts to address these issues explicitly in their reasoning, rather than advancing interpretations of standing requirements that disregard the realities of climate change and its constitutional implications.

For the sake of clarity, this chapter will divide the study of standing into a series of elements corresponding to the requirements commonly employed in constitutional climate cases. Consequently, the structure of this chapter is the following. Section 2 discussed the requirement of *actual or imminent harm*. Section 3 focuses on the requirement of *individual or particularised injury*. Section 4 expounds on *causation and direct affectation*. Section 5 provides a brief overview of issues of *territoriality*. Section 6 elaborates on the importance of associational standing in constitutional climate cases. Section 7 concludes.

2. Actual or Imminent Harm

A common standing requirement in constitutional adjudication is that plaintiffs must be *presently* affected or at *imminent risk* of being affected by the actions or omissions of the state.[16] As noted

[15] *VZW Klimaatzaak v Kingdom of Belgium 2023/8411* (Brussels Court of Appeal) [134]; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 130.
[16] See *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.4; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20*

by Richardson, the operation of the law embodies a temporality, such that adjudication only takes notice of 'events or impacts that occur within a stipulated period'.[17] For the purposes of standing, this means that constitutional courts generally limit their review to disputes concerning events that have occurred in the *past*, are happening in the *present*, or are *imminent*.[18]

In the context of constitutional climate disputes, the interpretation of this standing requirement is rendered challenging by the temporality of climate change. The slow-onset and future-oriented nature of the negative impacts of climate change on individuals contradicts the traditional *short-sightedness* - the prioritisation of the past and present, and the corresponding discounting of the future -[19] of constitutional adjudication (see Chapter 1). This situation has led courts to conclude that plaintiffs' climate-related prospective injuries are conjectural, hypothetical, or that the potential harms lack the sufficient intensity at present, as the impacts of climate change will materialise more clearly in the future.[20]

For example, in *KlimaSeniorinnen*, a group of senior women - alongside an association representing them - lodged an action for the protection of their rights pursuant to article 25a of

Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court] (n 5) para 108; *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247; *Smith v Attorney General [2022] NZHC 1693* (n 4) para 183. In the United States, this is known as the *actual* or *imminent* element of the *injury in fact* requirement of standing. See, for example, *Lujan v Defenders of Wildlife, 504 US 555, 112 S Ct 2130 (1992)* 560; Michael Aaron DelGaudio, 'From Ripe to Rotten: An Examination of the Continued Utility of the Ripeness Doctrine in Light of the Modern Standing Doctrine' (2017) 50 Georgia Law Review 637–40.

[17] Benjamin J Richardson, *Time and Environmental Law: Telling Nature's Time* (Cambridge University Press 2017) 7.

[18] ibid.

[19] Richard J Lazarus, 'Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future' (2009) 94 Cornell Law Review 1153, 1174–6.

[20] Examples include *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.4.

the Federal Act on Administrative Procedure (APA).[21] The plaintiffs claimed that Switzerland's insufficient climate action constituted an infringement of their rights under the Swiss Constitution and the European Convention on Human Rights, and requested a number of federal authorities to develop a plan to ensure compliance with Switzerland's obligations under the Paris Agreement.[22] After subsequent dismissals by federal authorities and the Federal Administrative Court, the claimants appealed the case before the Federal Supreme Court.[23]

In 2020, the Federal Supreme Court declared the claim inadmissible, arguing that the rights of the plaintiffs were not seemingly affected with sufficient intensity 'at the present time' ('*im heutiges Zeitpunkt*').[24] The court reached this conclusion by considering that the temperature goal of the Paris Agreement[25] was not expected to be exceeded in the near future, but only in decades to come.[26] In the view of the court, this meant that the asserted insufficiency of Switzerland's climate policies did not engage the constitutional rights of the plaintiffs at present time.[27]

The reasoning of the Swiss Supreme Court illustrates some of the challenges posed by the temporality of climate change for the interpretation of the *actual or imminent harm* standing requirement. In a nutshell, climate change is seen as a phenomenon whose visible consequences

[21] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para A.
[22] ibid A-C.
[23] ibid.
[24] ibid 5.4.
[25] The temperature goal is enshrined in article 2.1.(a) which states that the agreement aims to hold 'the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels'.
[26] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.3.
[27] ibid 5.5.

for the enjoyment of individual rights will only materialise in the future. This has led courts in, for instance, the United States[28] and New Zealand,[29] to dismiss rights-based claims on the grounds that the future negative consequences of climate change did not amount to a *real and identifiable risk* to,[30] or an *imminent affectation* of,[31] the claimants' rights.

These decisions highlight a paradox in the interpretation of this standing requirement in constitutional climate disputes seeking more ambitious state mitigation measures. If claims are filed to prevent further worsening of climate conditions impairing rights, courts may dismiss them as premature, arguing that they are based on hypothetical future harms. If, on the other hand, plaintiffs are required to wait until the negative impacts of climate change have fully materialised, constitutional claims might be deemed moot or purely academic, given that such impacts would be irreversible.[32]

This paradox reflects the gap discussed in Chapter 1 between the short-term temporal scope of constitutional adjudication and the future-oriented temporality of climate change. The temporality of climate change implies that *current* climate-related affectations of rights are caused by cumulative *past* emissions, making them irreversible. By contrast, *future* impacts are the result of *past* and *current* emissions. Although a fraction of future impacts can still be

[28] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4).
[29] *Smith v Attorney General [2022] NZHC 1693* (n 4).
[30] *ibid 183, 193.*
[31] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247. The court denied standing in relation to future harms, but it acknowledged that some claimants had already suffered concrete climate-related physical injuries (paras 246-7).
[32] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 130. A similar argument has been made by McHarg in the context of judicial review of executive action pursuant to the United Kingdom's Climate Change Act. See Aileen McHarg, 'Climate Change Constitutionalism? Lessons from the United Kingdom' (2011) 2 Climate Law 469, 478.

prevented through emission reductions, courts often dismiss allegations of such impacts as hypothetical, thereby failing to meet standing requirements in constitutional adjudication.[33]

The requirement of *actual* or *imminent* harm seems to assume that both the cause of the harm and the harm itself occur in almost perfect synchrony. That is to say, there is little to no delay between the former and the latter. Yet, this is certainly not the case in the context of affectations of rights stemming from climate change, where there is a particularly long delay between the cause of the harm - the GHG emissions, or the legislation authorising such emissions - and the harm itself - the impairment of rights stemming from the worsening of climate conditions.

Doctrinal humility offers a pathway for courts to navigate the above paradox by encouraging interpretations of standing that bridge the gap between *present* or *imminent* affectation and *future* and *irreversible* harm. For instance, courts could acknowledge that the temporal disconnect between the causes and impacts of climate harm necessitates an adaptation of the concept of 'imminence' in climate cases, one that accounts for the risk of future irreversible harm caused by actions in the present.

For example, courts in Germany and Belgium have decided to grant standing in climate cases not on the basis that claimants are *presently* affected, but rather because present emissions would lead to future and *irreversible* affectations of fundamental rights. The courts have therefore

[33] *Smith v Attorney General [2022] NZHC 1693* (n 4) paras 183, 193; *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.4.

provided an interpretation of the standing requirement of present affectation of rights that bridges the gap between *present* causes and *future* affectations.

In *Neubauer*, the German Constitutional Court explicitly noted the irreversibility of climate change in order to grant standing in a constitutional action. In the words of the court:

> Since future impairments of fundamental rights could potentially be set into irreversible motion today, and given that lodging a constitutional complaint to address the ensuing restrictions on freedom might be futile by the time the impairments have arisen, the complainants already have standing to lodge a constitutional complaint at the present time[34]

In the above quote, the court seems to have anticipated the *future* and *irreversible* affectations of rights caused by climate change to interpret this standing requirement.[35] In other words, the court noted that the risks of *future* impairments of rights are a result of state actions in the *present*, thus justifying that claimants should have standing at present time to challenge the potentially *irreversible* damaging actions. In that sense, even though the affectation of rights was not materialised in the present, the irreversible character of climate impacts justified granting the claimants standing. A similar line of reasoning can be found in the decision the Brussels Court of Appeal in *Klimaatzaak*.[36] Although in the context of a hybrid action grounded in the Belgian Civil Code and the European Convention of Human Rights, the reasoning of the court concerning the

[34] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 130.
[35] The future irreversible impacts of GHG emissions were also considered by the Colombian Supreme Court in a case concerning the deforestation of the Amazon rainforest. See *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* (n 14) s 11.1.
[36] *2023/AR/8411* (Cour d'appel Bruxelles (Brussels Court of Appeal)).

way in which individuals are presently affect by current state actions leading to future irreversible affectations of rights is relevant to the analysis here presented.[37]

The reasoning in *Neubauer* and *Klimaatzaak* exemplifies the interplay of epistemic and doctrinal humility in judicial decision-making. By acknowledging the irreversible nature of climate impacts and the causal link between present emissions and future, irreversible harm, the courts demonstrated an openness to adapting standing doctrines to address the challenges posed by climate change. This approach reflects humility in recognising that traditional interpretations may fall short in capturing the constitutional implications of climate legislation for fundamental rights. In that sense, humility underscores the need to reconcile standing doctrines with the unique temporal dynamics of climate change - ensuring that standing requirements do not bar individuals from challenging actions that threaten future, irreversible harm.

It thus seems clear that the mismatch between the temporality of climate change and the temporal scope of constitutional adjudication poses difficulties for courts when determining whether a claimant is *presently* affected by the negative impacts of climate change for the purposes of standing. Yet, this mismatch is only challenging in cases seeking to prevent *future* climate-related affectations, as the ones examined above. Cases grounded in *present* affectations do not face the same challenges in this respect. Courts have often found that claimants suffered past and ongoing affectations of rights due to climate change. For example, in *Juliana*, the court concluded that claimants had suffered particularised injuries related to displacements over water

[37] See *ibid 134.*

scarcity and floods.[38] Nonetheless, cases grounded in current affectations face other difficulties, such as the justiciability of remedies discussed in Chapter 3, or the traceability of their injuries to specific state actions, explored in section 4 below.

3. Individual or Particularised Injury

A second common standing requirement in constitutional adjudication demands plaintiffs to substantiate that they suffer concrete and individualised injuries.[39] In many jurisdictions, this requirement seeks to prevent claimants from lodging constitutional complaints for the protection of the public interest, or *actio popularis*.[40] Given that climate impacts are collective by its very nature, constitutional courts often conclude that claimants lack individual standing to lodge complaints seeking to protect their rights from such affectations.[41] In other words, the spatiality of climate change complicates the determination of who is *individually* affected by climate impacts attributed to state conduct.

For example, in *Animal Legal Defense Fund*, the court found that, even though there were 'serious and well recognized' harms associated with climate change, the claimants' action was

[38] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1168.

[39] E.g. *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1299–1300; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 5) para 131; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.5; *Sentencia STC4360-2018* (n 14) 14–5; *Recurso de Queja 11/2022* (n 2) para 34.

[40] The prohibition of *action popularis* has been considered by courts in some constitutional climate cases. See, for example, *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 4.1; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 110. This issue was also recently discussed by the European Court of Human Rights and led to the court setting a high threshold to claim victim status in the context of climate-related affectations of human rights. See *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 485–8.

[41] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1300; *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* (n 2) para 56; *Smith v Attorney General [2022] NZHC 1693* (n 4) para 193.

based on 'generalized grievances'.[42] According to the court, the outcome of the case 'would no more directly or tangibly benefit them than the public at large'.[43] Thus, the court denied standing for failure to allege a particularised injury. Similar arguments can be found in *Smith v Attorney General*,[44] where the High Court of New Zealand argued that the claimant failed to establish a climate-related risk 'to the life of a specified individual or even a class of individuals'.[45] Instead, the court concluded that the claim concerned 'a general threat that may eventuate as a result of the effects of climate change to all New Zealanders'.[46]

In *Greenpeace et al. v Austria*, a case concerning the constitutionality of tax exemptions for air transportation, the Austrian Constitutional Court dismissed the claimants' case, ruling that they lacked standing as they were not affected by the contested provisions.[47] The claimants argued that by privileging aviation over less carbon-intensive alternatives - i.e. rail transport - the norms led to an unjustified increase in GHG emissions that infringed upon their constitutional rights.[48] Yet, the court noted that the claimants could not be considered addressees of the challenged norms, as they explicitly claimed to use rail transport only.[49] Thus, the court concluded that the tax benefits for aviation did not interfere with the rights of the claimants for the purposes of standing to lodge a constitutional complaint.[50]

[42] *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1300.
[43] ibid.
[44] *Smith v Attorney General [2022] NZHC 1693* (n 4).
[45] ibid 193.
[46] ibid.
[47] *G 144-145/2020-13, V 332/2020-13* (n 13) paras 68–9.
[48] ibid 25–44.
[49] *ibid 68.*
[50] ibid 69–72.

These three cases illustrate the difficulties posed by the collective nature of climate impacts for the determination of who has standing on the basis of being *individually* by climate-related actions or omissions of the state. Furthermore, in some jurisdictions this requirement is qualified, demanding claimants to be *especially* - not just *individually* - affected in order to be granted standing.[51] This means that plaintiffs' rights need to be affected in a way that differentiates them from society at large. Naturally, this requirement is particularly demanding in the context of climate change, as it would require establishing *individual and differentiated* affectations of rights stemming from eminently collective climate impacts.

This qualified requirement led the Mexican Supreme Court to deny standing to the claimants in *Julia Habana et al*.[52] In this case, the court decided a challenge to the constitutionality of the amendments to the Electricity Industry Law enacted in 2021. The plaintiffs - 214 youth aged 15 to 29 - claimed that the amendments constituted a setback for Mexico's transition to a low-carbon economy and the achievement of climate targets set by the government, thus violating their constitutional rights.[53]

In its standing assessment, the Supreme Court recalled that claimants in constitutional actions are required to demonstrate that they suffer grievances that differentiate them from the rest of society.[54] In the context of affectations of the right to a healthy environment, the fulfilment

[51] E.g. *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* (n 2) para 56; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 5.5.
[52] *Recurso de Queja 11/2022 Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)* (n 2). More information about the procedural history of the case can be found in https://climatecasechart.com/non-us-case/julia-habana-et-al-v-mexico-unconstitutionality-of-the-reform-to-the-electricity-industry-law/ [Accessed 30-05-2024].
[53] ibid 14.
[54] ibid 39.

of this requirement is assessed through an examination of the 'surrounding environment', a standard that allows the court to delimit the area of impact of specific environmental harms.[55] Applied to climate change, this standard led to the conclusion that the claimants were not *especially* affected, as climate change is spatially unbounded and thus affects society at large.[56] The court noted that the age of the claimants did not entail any especial affectation for the purposes of standing and dismissed the case.[57] A similar line of reasoning can be found in *KlimaSeniorinnen,*[58] where the Swiss Supreme Court considered it necessary for plaintiffs to the affected 'in a different way from the general public',[59] and concluded that the senior women bringing the claim were not *individually* affected with sufficient intensity to grant them standing.[60]

The interpretation of this standing requirement in constitutional climate cases poses a dilemma for the courts: given the collective nature of climate impacts, liberalising this requirement would mean that anyone is entitled to lodge against state climate-related (in)action - tantamount to an *actio popularis* - while a more conservative interpretation might entail that there are simply no individuals with standing to initiate such proceedings to protect their rights from climate impacts.

This dilemma was recently addressed by the European Court of Human Rights in *Verein KlimaSeniorinnen v Switzerland.*[61] In its ruling, the court noted that allowing individuals with a

[55] ibid 44.
[56] ibid 69.
[57] ibid 70–5, 87.
[58] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6).
[59] ibid 4.1.
[60] ibid 5.5-6.2.
[61] *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 478–88. Early scholarly reactions to this ruling can be found in Ole W Pedersen, 'Climate Change and the

'legitimate personal interest' to claim a violation of rights for the inadequacy of state action to combat climate change would 'cover virtually anybody'.[62] Consequently, the court imposed a restrictive interpretation of the criteria for victim status, requiring that applicants be subject to 'a high intensity of exposure to the adverse effects of climate change', and that there be a 'pressing need to ensure the applicant's individual protection'.[63] The court addressed the dilemma described above by establishing additional criteria for climate-related affectations, underscoring the difficulties posed by the legal nature of climate change for understandings of standing.

The cases described above illustrate the difficulties posed by the collective and spatially unbounded nature of climate change for the interpretation of standing requirements demanding individual - and even *differentiated* - affectations of constitutional rights. Such difficulties seem to be rooted in a dichotomy between *collective* and *individual* affectations, often seen as mutually exclusive. Doctrinal humility can play a critical role in guiding courts as they navigate the tension between individualised and collective harms in climate cases. By acknowledging that existing standing doctrines were not designed with the unique spatiality and collective nature of climate change in mind, courts can approach this requirement by recognising that the collective nature of climate impacts does not negate their ability to result in particularised injuries to individuals.

ECHR: The Results Are In' (*EJIL: Talk!*, 11 April 2024) <https://www.ejiltalk.org/climate-change-and-the-echr-the-results-are-in/> accessed 12 April 2024; Marko Milanovic, 'A Quick Take on the European Court's Climate Change Judgments' (*EJIL: Talk!*, 9 April 2024) <https://www.ejiltalk.org/a-quick-take-on-the-european-courts-climate-change-judgments/> accessed 12 April 2024.

[62] *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) para 485.

[63] ibid 487. As will be discussed in section 7, different criteria were established for the standing of associations in climate cases (at 489-503).

Indeed, courts in other cases have identified particularised impairments stemming from climate change for the purposes of granting standing in constitutional cases.[64] This means that courts have rejected the existence of a dichotomy between *collective* and *individual* harms, allowing claimants the possibility of lodging complaints to protect their own constitutional rights from climate-related injuries.

For example, the German Constitutional Court argued in *Neubauer* that the constitutional complaints were not 'an inadmissible actio popularis', adding that 'The mere fact that very large numbers of people are affected does not exclude persons from being individually affected in their own fundamental rights'.[65] Similarly, in *Juliana*, the Court of Appeals found that plaintiffs had substantiated 'concrete and particularized injuries', arguing that '"it does not matter how many persons have been injured" if the plaintiffs' injuries are "concrete and personal"' based on existing case law.[66] Finally, the Colombian Supreme Court granted standing to the claimants in *Future Generations v Ministry of Environment* on the basis that they were *individually* affected by climate impacts associated with the deforestation of the Amazon rainforest.[67]

The analysis of existing constitutional climate disputes suggests that the difficulties posed by the collective nature of climate impacts for the interpretation of this standing requirement

[64] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1168; *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 246; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 110; *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* (n 14) s 2.1-2. Similar considerations can be found in the decision of the Brussels Court of Appeal in *Klimaatzaak*. See *2023/AR/8411* (n 36) paras 131–3.

[65] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 110.

[66] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1168.

[67] *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* (n 14) pt 2.1.

varies significantly across jurisdictions. In jurisdictions that require claimants to prove that they are *especially* affected by climate change - such as Mexico and Switzerland -[68] courts have applied higher standing thresholds that collide with the collective nature of climate impacts.[69] Conversely, in jurisdictions with lower thresholds, courts have been more receptive to claims grounded in individual affectations associated with climate change. In any case, the collective nature of climate change complicates the interpretation of this standing requirement in constitutional adjudication.

Humility provides courts with a framework for finding a balance between overly permissive standing that allows everyone to claim climate-related injuries for collective harms, and overly restrictive standards that exclude legitimate claims of individual harm. By recognising that collective harms can manifest as distinct, individual injuries, courts can move beyond rigid dichotomies in favour of a more context-sensitive approach. This balanced approach upholds the integrity of constitutional principles by requiring plaintiffs to substantiate particularised injuries while recognising constitutional implications of climate-related injuries for specific claimants.

4. Causation and Direct Affectation

A last common standing requirement in comparative constitutional adjudication relates to traceability or causation.[70] This typically demands plaintiffs to demonstrate that their affectations

[68] *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 4.1.

[69] An example of such a high threshold for standing of individuals in the context of climate-related harms was recently set by the European Court of Human Rights in *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 485–8.

[70] As will be explored in Chapter 5, establishing causation is not part of the standing analysis in some jurisdictions, where it is instead considered at the merits stage to determine whether there has been a violation of constitutional norms. See, for example *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-*

stem directly from the impugned government actions or omissions,[71] ensuring that defendants - typically national governments - are only held liable for the harms that they cause.[72] Although the specific tests to assess fulfilment with this requirement vary across jurisdictions, courts generally require a causation link that is not 'hypothetical or tenuous' or altered by the actions of a third party.[73]

This requirement is rendered significantly more complex by the spatiality, temporality, and polycentricity of climate change. The causation link between state actions and climate-related injuries is attenuated and complicated by the involvement of third parties - foreign and subnational governments, companies, individuals - and by the way GHG emissions operate in time and space. As noted by Bullock, 'The harm from greenhouse gas emissions is mediated through natural processes, and those emissions are derived from many geographically varied sources over substantial time periods.'[74] In other words, attributing climate-related injuries to government actions can be particularly challenging due to the complex causal chain linking cause and consequence. In this context, humility instructs courts to interpret causation with an appreciation of the inherent complexities posed by the polycentricity, temporality, and spatiality of climate change. It invites them to approach the physical reality of GHG emissions and their impacts by

HRET) (Supreme Court of Norway) [167–71] English translation available at: https://climatecasechart.com/wp-content/uploads/non-us-case-documents/2020/20201222_HR-2020-846-J_judgment.pdf [accessed 05-06-2024]. Nevertheless, the challenges explored here apply similarly to those jurisdictions.

[71] A discussion of causation requirements for different types of constitutional claims in the context of the United States can be found in *Lujan v. Defenders of Wildlife, 504 U.S. 555, 112 S. Ct. 2130 (1992)* (n 16) 561–2.

[72] Ian R Curry, 'Establishing Climate Change Standing: A New Approach' (2019) 36 Pace Environmental Law Review 297, 304–6.

[73] For example, see *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1169.

[74] David Bullock, 'Public Nuisance and Climate Change: The Common Law's Solutions to the Plaintiff, Defendant and Causation Problems' (2022) 85 The Modern Law Review 1136, 1137.

engaging with the relevant science and providing tailored interpretations of causality reflecting such physical reality.

Unlike prototypical constitutional cases where there is a direct link between the state actions or omissions and the claimed injuries - for example because the affectation is caused directly by a discriminatory piece of legislation - the causal link in constitutional climate cases is usually indirect. Indeed, it requires an assessment of multiple elements of the causation chain:[75] i) between the challenged state actions and a calculable amount of GHG emissions, ii) between such emissions and climate change - also known as *general causation* -[76] iii) between climate change and specific impacts - e.g. sea-level rise, heatwaves, droughts, floods -[77] and iv) between specific impacts and the claimants' asserted injuries.[78]

The seemingly complicated causal chain linking state actions to individual injuries has not proved fatal to the standing of individuals in constitutional climate cases.[79] Nevertheless, there are three elements of the causation analysis that are of particular importance in these cases.

a) Standards of causation

[75] An overview of the elements of the complex causal chain linking GHG emissions to individual harms can be found in Friederike EL Otto and others, 'Causality and the Fate of Climate Litigation: The Role of the Social Superstructure Narrative' (2022) 13 Global Policy 736, 738, 741–4. For an account of the complexities involved in establishing causation for climate-related violations of human rights, see Ottavio Quirico, 'Climate Change and State Responsibility for Human Rights Violations: Causation and Imputation' (2018) 65 Netherlands International Law Review 185.

[76] Otto and others (n 75) 741.

[77] Different impacts also have different timescales in which they take place or are exacerbated by atmospheric concentrations of GHG. See ibid 741–2.

[78] A similar reconstruction of the causation issues involved in climate-related violation of human rights can be found in the ruling of the European Court of Human Rights in *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 424–44.

[79] The standard of causation applied for the purposes of standing requirements is typically lower than the one employed to declare a violation of the constitution. The latter will be explored in further detail in Chapter 5.

The standards of causation employed in constitutional adjudication are generally more flexible[80] than those commonly used in, for example, tortious claims.[81] Instead of the *'but for'* causation typically required in tortious claims for damages,[82] the causation requirement in constitutional adjudication often requires the impugned action to make a *substantial*[83] or *sufficient*[84] contribution to the claimed injuries.[85]

This flexible standard has allowed courts to rely on generic scientific evidence to establish some parts of this causal chain. For example, they have relied on reports from the IPCC and government agencies - which are seen as authoritative and undisputed by the parties - to establish general causation - i.e. the link between GHG emissions and climate change -[86] the link

[80] This situation explains why causation has received relatively little attention in scholarship concerning public law climate cases. See, for example, Rodríguez-Garavito (n 3) 15, 37; Jacqueline Peel and Hari M Osofsky, 'A Rights Turn in Climate Change Litigation?' (2018) 7 Transnational Environmental Law 37, 46; Joana Setzer and Lisa C Vanhala, 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance' (2019) 10 WIREs Climate Change e580, 10.

[81] Causation has been devoted more consideration in scholarship discussing tort-based claims and other sorts of private climate litigation. See, among others, Geetanjali Ganguly, Joana Setzer and Veerle Heyvaert, 'If at First You Don't Succeed: Suing Corporations for Climate Change' (2018) 38 Oxford Journal of Legal Studies 841, 849; Mark Wilde, 'Causation and Climate Change Litigation: "Bridge Too Far"?' (2021) 8 Austrian Law Journal 268, 274–83; Bullock (n 74) 1137, 1154–67; Douglas A Kysar, 'What Climate Change Can Do About Tort Law' (2011) 41 Environmental Law (Portland, Ore.) 1, 29–42.

[82] As described by Kysar, this requires claimants to single out the 'defendant's behavior as a necessary cause of plaintiff's harm'. See Kysar (n 171) 30–1. This is also discussed in Bullock (n 165) 1154–5.

[83] For example, this was the standard employed by the court in *Juliana*, drawing on its precedent in *Mendia v García*. See *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1169; *Mendia v Garcia, 768 F3d 1009 (9th Cir 2014)* 1013.

[84] This was the standard employed by the court in *Mathur* when discussing the admissibility of the case (although not formally as part of a standing assessment). See *Mathur v. Ontario, 2020 ONSC 6918* (n 7) paras 164–71. This standard, developed by the Canadian Supreme Court in *Canada (AG) v Bedford 2013 SCC 72*, does not require the impugned state action to be the 'only or dominant cause of the prejudice suffered by the claimant, and is satisfied by a reasonable inference, drawn on a balance of probabilities' (at para 75). The application of this standard was also discussed in *Misdzi Yikh v Canada, 2020 FC 1059* Madam Justice McVeigh [96].

[85] This standard is similar to that employed in tortious cases of public nuisance. See Bullock (n 74) 1155–65. This is also similar to the causation standard utilised by courts in tortious cases grounded in a combination of civil liability and human rights obligations. See *2023/AR/8411* (n 36) paras 219–23; *Stichtig Urgenda v De Staat der Nederlanden* [2015] Rechtbank Den Haag (Hague District Court) ECLI:NL:RBDHA:2015:7196 [4.90].

[86] As pointed out by Rodríguez-Garavito, a notable exception to the use of IPCC reports are courts in the United States. See Rodríguez-Garavito (n 3) 26.

between climate change and specific impacts, and even the link between the latter and the injuries of the claimants from a probabilistic perspective - elements ii), iii), and iv) above.[87] Thus, the intermediate steps of the causal chain have often been easily established in constitutional cases. Nonetheless, it is worth noting that the link between climate impacts and the claimants' injuries face the challenges explored in the previous sections in relation to other standing requirements - i.e. being *presently* and *personally* affected.

An example of causation analysis in a constitutional climate case can be found in *Juliana*. The court's reasoning concerning causation is worth quoting in full:

> The causal chain here is sufficiently established. The plaintiffs' alleged injuries are caused by carbon emissions from fossil fuel production, extraction, and transportation. A significant portion of those emissions occur in this country; the United States accounted for over 25% of worldwide emissions from 1850 to 2012, and currently accounts for about 15%. (…) And, the plaintiffs' evidence shows that federal subsidies and leases have increased those emissions. About 25% of fossil fuels extracted in the United States come from federal waters and lands, an activity that requires authorization from the federal government.[88]

In this case, the plaintiffs blamed a 'host of federal policies', spanning over fifty years, for their individual injuries.[89] The court found the causation requirement fulfilled by considering the amount of GHG emissions that had been produced in that period as a result of federal subsidies and leases for the exploitation of fossil fuels on federal waters and lands - element i) of the causation chain above.[90] The rest of the chain was established by considering the general relationship between climate change and the injuries suffered by the claimants - i.e. water scarcity and coastal flooding. Indeed, the court explicitly noted that 'The plaintiffs' alleged injuries

[87] ibid 25–7; Quirico (n 75) 190; Otto and others (n 75) 741.
[88] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1169.
[89] *ibid.*
[90] ibid.

are caused by carbon emissions from fossil fuel production, extraction, and transportation. A significant portion of those emissions occur in this country'. [91] The court concluded that this was enough for the purposes of the standing analysis, even though the case was later dismissed for lack of redressability.[92]

The adoption of flexible causation standards in constitutional climate cases reflects an acknowledgment of the inherent difficulties posed by the polycentric nature of GHG emissions and their impacts. Stricter standards, such as the 'but for' test, would often render claims inadmissible, as it is impossible to trace specific climate impacts to the emissions of a single actor or country. By recognising the substantial or sufficient contribution of state actions to the claimants' injuries, courts are able to navigate this complexity while maintaining a focus on the broader systemic connections between emissions and harm.

b) The contribution of governments to climate change

Claims in constitutional climate cases do not generally attribute their injuries to the governments' own GHG emissions, but rather to their regulatory actions promoting or facilitating carbon-intensive activities.[93] In that sense, the governments' alleged fault does not relate to producing the GHG emissions harming the plaintiffs by themselves, but to regulating or authorising the activities that do pollute - as in *Juliana* above. Although this means that the impugned conduct is

[91] ibid.
[92] ibid 1170–4.
[93] Examples include, among others, *Segovia v Climate Change Commission GR No 211010, March 07 2017 Supreme Court of the Philippines* 3; *La Rose et al v Her Majesty the Queen 2020 FC 1008* [6–10]; *Sentencia STC4360-2018 Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)* (n 14) 3–4; *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1298.

easier to prove compared to tortious claims, it does nevertheless add another link to the causal chain: one between the regulatory actions and an amount of GHG emissions produced by other entities - usually companies.

This latter link can be contentious when trying to attribute emissions to specific regulations, as the relationship between a regulatory action and subsequent emissions from third parties is indirect, often deemed hypothetical.[94] Furthermore, it begs the question of what governments are actually responsible for, and when their actions become unlawful, given that there is no clear threshold after which a decision to authorise carbon-intensive activities amounts to a breach of the constitution - e.g. when it causes any amount of emissions?, when it increases the country's overall emissions in a given year?, when the country does not reduce its emissions soon enough? (see Chapter 5). This is further exacerbated by the fact that plaintiffs routinely challenge state actions consisting of policies that have been uncontroversial until very recently, e.g. mining, fossil fuel exploitation, animal farming.[95]

The court's reasoning in *Clean Air Council* illustrates the challenges involved in the determination of states' contribution to climate change. In this case, the plaintiffs argued that a number of personnel and budgetary decisions[96] of the Trump-era Federal Government violated

[94] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247–9; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 70) paras 167–71.

[95] Elizabeth Fisher, 'Climate Change and Statutory Construction: Administrative Law Expertise and "New" Emergencies' (2023) 27 The Edinburgh Law Review 322, 342.

[96] These decisions include, among others: '(1) the President's March 16, 2017 "Budget Blueprint," proposing reduced funding for numerous agencies, including the EPA; (2) the President's March 28, 2017 Executive Order, directing agencies to review current environmental legislation; (3) Administrator Scott Pruitt's replacement of those on the EPA's Board of Scientific Counselors with individuals purportedly tied to regulated industries; and (4) various EPA, DOE, and DOI decisions to halt the work of climate change advisory boards, to alter climate change terminology on public websites, to reduce staffing at agencies with operations touching on the environment, to hire researchers with

their constitutional rights.[97] In its analysis of 'traceability',[98] the court started by noting that the asserted injuries - related to severe seasonal allergies and asthma -[99] originated in 2011, while the government's challenged actions began in 2017 - I will discuss this temporal aspect in more detail below.[100] Additionally, the court argued, based on scientific reports,[101] that the challenged actions would not lead to an increase in the US' GHG emissions, but rather to them flattening.[102] The court also found that any potential link between the challenged actions and increased future emissions would depend on the hypothetical actions of third parties - mainly fossil fuel companies.[103] In sum, despite finding that plaintiffs had suffered particularised physical injuries due to climate change, the court denied the claimants' standing for lack of traceability.[104]

Two points are worth noting from this judgment. On the one hand, the polycentricity of climate change complicated the determination of the direct foreseeable impacts of the challenged actions. The court emphasised that government agencies and officers 'do not produce greenhouse gases, but act to regulate those third parties that do',[105] and concluded that the government's regulatory rollbacks could be considered 'at most, indirect factors in the calculus of

industry ties, and to leave various science-related positions unfilled.' *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 244.

[97] ibid 242–4.

[98] Traceability is the name often given to the standing requirement equivalent to causation in the United States. An overview of the history and interpretation of this requirement in constitutional adjudication can be found in, among others, Evan Tsen Lee and Josephine Mason Ellis, 'The Standing Doctrine's Dirty Little Secret' (2012) 107 Northwestern University Law Review 169, 180–2; Luke Meier, 'Using Tort Law to Understand the Causation Prong of Standing' (2011) 80 Fordham Law Review 1241.

[99] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 243.

[100] *ibid 247.*

[101] Niklas Höhne and others, 'Action by China and India Slows Emissions Growth, President Trump's Policies Likely to Cause US Emissions to Flatten' (NewClimate Institute, Climate Analytics, Ecofys 2017) <https://ca1-clm.edcdn.com/assets/cat_2017-05-15_briefing_india-china-usa.pdf?v=1679478290> accessed 31 May 2024.

[102] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 249.

[103] ibid.

[104] ibid 247–9.

[105] *ibid 249.*

rising greenhouse gas emissions'.[106] Put differently, it was not clear for the court that the challenged actions would necessarily lead to third parties increasing their emissions. This point illustrates the difficulties of attributing individual harm to specific regulatory decisions, due to the necessary consideration of third-party actions.

On the other hand, it seems that the court was of the view that causation required the plaintiffs to show that the challenged actions would increase the overall annual volume of GHG emissions in the United States. This relates to the lack of a clear threshold anticipated above. Given that GHG emissions result from a wide range of activities common in modern societies - e.g. waste, transportation, electricity generation - it might seem dubious for courts to attribute unlawful harms to regulatory actions allowing for business-as-usual emissions. This explains why the court implicitly conceded that the asserted injuries could be attributed to government actions leading to an *increase* in domestic GHG emissions, but not to actions indirectly leading to the *flattening* of the country's overall emissions - as was ultimately the case.[107] The lack of a clear threshold of unlawfulness is also closely related to the substantive assessment of what amounts to a breach of the constitution in the context of climate change and is therefore expounded upon in Chapter 5. Nevertheless, a clear threshold is often necessary to determine what amounts to an unlawful action to which an injury can be traced, as illustrated by *Clean Air Council*.

It is worth noting that the assessment of states' contribution to climate change is also contingent upon the cause of action around which the claim is made. If the claim is grounded in

[106] ibid.
[107] ibid.

a constitutional obligation of non-interference with rights - as *negative* rights -[108] causation requires a logical connection to a state's positive action amounting to an interference.[109] This was the case in *Clean Air Council* and has typically been the case in climate cases from Canada and the United States (see Chapter 5). In such cases, the contribution of states to the injuries of the claimants is assessed in terms of how their actions generated, or facilitated the generation of, GHG emissions that can be linked to such injuries.

If, by contrast, the claim is anchored in a constitutional obligation to protect individual rights by mitigating the risk of future climate harms - as *positive* rights -[110] causation may be related to the insufficiency or inadequacy of government climate action, meaning that, for example, business-as-usual might be considered unlawful.[111] An example of this second kind of cases can be found in *Neubauer*, where the court granted standing on the basis of *direct* affectation due to the possibility that the legislator could have 'violated its duty of protection by affording insufficient protection against health impairments and risks to life caused by climate change'.[112] In cases of this sort, the states' contribution to the claimants' injuries is not interpreted

[108] Cécile Fabre, *Social Rights Under the Constitution: Government and the Decent Life* (Oxford University Press 2000) 41; Charles Fried, *Right and Wrong* (Harvard University Press 1978) 110; Robert Alexy, 'On Constitutional Rights to Protection' (2009) 3 Legisprudence 1, 2.
[109] Alexy (n 108) 5–9.
[110] Fabre (n 108) 41; Johan Vorland Wibye, 'Reviving the Distinction between Positive and Negative Human Rights' (2022) 35 Ratio Juris 363, 365–7; Aharon Barak, *Proportionality: Constitutional Rights and Their Limitations* (Cambridge University Press 2012) 423; Robert Alexy, *A Theory of Constitutional Rights* (Julian Rivers tr, Oxford University Press 2002) 310–3.
[111] For example, the German Constitutional Court established that a climate strategy that does not pursue the goal of climate neutrality would be considered a violation of states' duties of protection stemming from fundamental rights. See *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 155. A similar line of reasoning concerning positive rights can be found in *2020 Heonma 389, etc 29/08/2024 Public Notice 335, 1409 (Constitutional Court of Korea)*.
[112] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 99.

in light of the emissions caused by their actions, but in terms of the sufficiency of their actions to discharge their duties of protection (see Chapter 5).

c) Temporality

As noted above, the court in *Clean Air Council* identified an inconsistency between the timing of the injuries and that of the challenged state actions. The fact that the impugned actions took place *after* the beginning of the alleged injuries challenged the judicial logic of causation. This points to a problem of temporality, which further complicates the assessment of causation in constitutional climate cases.

As anticipated in section 2 above, constitutional climate cases are framed around *present* or *future* injuries. As a result, the causation analysis in these cases is either *backward-looking* or *forward-looking*.[113] In backward-looking cases, causation requires a *past* action that precedes the *present* injuries. Such logical order was missing in *Clean Air Council*, leading the court to note the inconsistency and dismiss the claim for lack of causation.[114]

The emphasis in backward-looking cases lies on the identification of a past action to which the harm can be attributed. In *Clean Air Council*, the challenge to specific actions made this difficult. After considering the potential GHG emissions that would result from each of the impugned actions, the court found that 'many of Defendants' challenged actions could have nothing to do with Plaintiffs' injuries because the actions did not increase the level of greenhouse

[113] Rodríguez-Garavito (n 3) 36–8.
[114] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 247–8.

gas emissions', and concluded that 'the challenged actions have nothing to do with Plaintiffs' allergies and asthma'.[115]

Establishing backward-looking causation is thus easier when plaintiffs frame their claim more generally to challenge a comprehensive set of decisions. As discussed above, this was the case in *Juliana*, where the claimants challenged federal policies over the past fifty years –from the moment the government was expected to be aware of the risks associated with anthropogenic global warming.[116] The breadth of the challenged actions allowed the court to establish causation simply by considering the GHG emissions originated in the United States in that period and the scientific connection between such emissions and claimants' injuries associated with water scarcity and coastal flooding.[117]

By contrast, causation in forward-looking cases demands an action that can be linked to a risk of future foreseeable harm. The emphasis in these cases does not lie so much on the impugned action but on the risk that can be attributed to such action instead (see Chapter 5). For example, the plaintiffs in *Clean Air Council* argued that the government violated and would violate[118] their rights in the future with the challenged actions, suggesting a risk of future harm. Nevertheless, the court's analysis of the temporality of causation did not consider the possibility of future aggravation of pre-existing injuries. Indeed, the court could have considered the way in which the emissions resulting from the challenged actions would foreseeably worsen the

[115] *ibid.*
[116] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 7) 1166–7.
[117] ibid 1169.
[118] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 242.

plaintiffs' injuries over time, meaning that causation could be interpreted differently in light of the ongoing and future-oriented nature of climate impacts.[119]

Another example of forward-looking causation in constitutional climate cases can be found in *Neubauer*. There, the German Constitutional Court found causation fulfilled in its standing analysis by considering that the GHG emission allowances included in the Climate Protection Law could affect the plaintiffs in the future.[120] The court thus drew a direct link between the future emissions built into the challenged legislation - authorised by it - and the risk of future injuries on the claimants' rights.

A final consideration of temporality in relation to causation concerns the delay between emissions and climate impacts. As I pointed out above in section 2, the effects of GHG emissions on climate change are generally not immediate and last for a significantly long time. This is certainly the case for carbon dioxide, the largest contributor to climate change, as well as for other gases such as nitrous oxide, whose warming potential is measured over centuries.[121] Nevertheless, other GHG can have significant impacts in the short-term. These are the so-called

[119] As explored in Chapter 1, the full impacts of any amount of GHG emissions on the global climate system can take years or decades to materialise. Furthermore, its effects can persist for centuries of millennia. Further information can be found in United States Environmental Protection Agency, 'Climate Change Indicators: Greenhouse Gases' (16 December 2015) <https://www.epa.gov/climate-indicators/greenhouse-gases> accessed 21 September 2023.
[120] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 133.
[121] 'Understanding Global Warming Potentials' (*United States Environmental Protection Agency*, 8 August 2024) <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials> accessed 25 November 2024.

'short-lived climate forcers' - primarily methane.[122] The latter's warming potential can be realised in a time span ranging from months to a couple of decades.[123]

Furthermore, different climate impacts have varying response times to atmospheric concentrations of GHG, meaning that climate impacts such as sea-level rise only fully materialise oven centuries or millennia.[124] These dimensions of temporality have not been considered by constitutional courts in the cases explored above. Nevertheless, they are potentially relevant considerations for the standing analysis in relation to causation in constitutional climate cases.[125]

Overall, the cases explored in this section show that the causation requirement gives rise to a series of intricate questions in constitutional climate cases. The long causal chain potentially linking state actions to individual injuries is complex and filled with 'sticking points' as demonstrated by the multiple legal elements discussed in the above cases. But despite this, courts have often not been deterred by the complexity of causality in the context of climate change and have instead resorted to flexible causation standards and generic scientific evidence from authoritative sources to conduct their legal analysis.

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[122] See 'Control Methane to Slow Global Warming - Fast' (2021) 596 Nature 461; Intergovernmental Panel on Climate Change (IPCC) (ed), 'Short-Lived Climate Forcers', *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023).

[123] 'Control Methane to Slow Global Warming - Fast' (n 122); Intergovernmental Panel on Climate Change (IPCC) (n 122).

[124] See, for example Matthias Mengel and others, 'Committed Sea-Level Rise under the Paris Agreement and the Legacy of Delayed Mitigation Action' (2018) 9 Nature Communications 601; Intergovernmental Panel on Climate Change (IPCC) (ed), 'Ocean, Cryosphere and Sea Level Change', *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 1220–1.

[125] The issue of temporality has been identified as a problem for causation in tortious claims concerning climate change. See Kysar (n 81) 40–1; Bullock (n 74) 1155.

The challenges of causation in constitutional climate cases underscore the need for humility as a guiding principle. By embracing humility, courts can navigate the uncertainties inherent in complex causal chains while acknowledging the probabilistic nature of harm. Humility allows courts to acknowledge the inherent limitations of pinpointing specific emissions or actions as the sole causes of climate harms, while recognising the collective and cumulative nature of greenhouse gas emissions. This approach enables courts to adopt flexible causation standards that account for the polycentric and temporal complexities of climate change. In sum, humility instructs courts to adopt a nuanced understanding of causation in constitutional climate cases, one that respects scientific evidence, anticipates future risks, and remains sensitive to the partial and indirect nature of state accountability.

5. Territoriality

So far, my analysis of standing requirements in constitutional climate cases has ignored the geographical location of both plaintiffs and defendants. This is because considerations of territoriality do not commonly arise in the context of these cases. However, the spatially unbounded nature of climate change has sometimes given rise to legal questions concerning the potential extraterritorial responsibility of states for the negative impacts that their emissions cause on foreigners living abroad.[126]

The issue of territoriality has been more contentious in international cases grounded in human rights law. For example, in 2021, the UN Committee on the Rights of the Child declared

[126] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 90.

that children could be granted victim status to bring claims against states for the harmful effects of the GHG emissions originating in their territory that affect children in other countries.[127] More recently, this issue was also addressed by the European Court of Human Rights in *Duarte Agostinho and Others v Portugal and 32 Others*.[128] In this case, the court rejected the expansion of territorial jurisdiction to allow Portuguese citizens to bring claims against members of the Council of Europe other than Portugal.[129]

In the context of standing analysis in climate cases, there is only one case where the issue of territoriality has been considered by a constitutional court. In *Neubauer,* citizens from Nepal and Bangladesh alleged that their rights were being violated as a result of climate impacts partially attributable to Germany's GHG emissions - amounting to around 2% of annual global emissions in 2020.[130] In its standing analysis, the court found that such violation was indeed possible in light of the global nature of climate change, granting standing to the claimants.[131] Although the court later found that a violation of the claimants' rights was not 'ascertainable',[132] the decision left the door open to consider future constitutional complaints filed by individuals living outside Germany.

The court's decision in *Neubauer* illustrates the some of the legal questions raised by the spatiality of climate change for the purposes of standing in constitutional adjudication.[133] Even

[127] See *Sacchi et al v Argentina, et al* [2021] UN Committee on the Rights of the Child CRC/C/88/D/106/2019 [10.2-14].
[128] *Duarte Agostinho and Others v Portugal and 32 Others, App no 39371/20 (ECHR, 09 April 2024)* 181–214.
[129] ibid 213–4.
[130] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) paras 78, 174.
[131] ibid 90.
[132] ibid 173.
[133] Sunstein (n 5) 1012.

though this is the only case where this issue has been discussed by a constitutional court, it is likely to be raised in future constitutional climate cases.

6. Associational standing

For the sake of clarity and simplicity, I have so far restricted my analysis of standing requirements in constitutional climate cases to claims initiated by natural persons. Yet, associations have also joined as independent plaintiffs in many of the cases examined in this chapter.[134] Although a comprehensive discussion of associational standing in constitutional climate cases is beyond the scope of this chapter, it is nevertheless worth making a brief comment about the way constitutional courts have dealt with this issue in the cases analysed in this dissertation.

There are multiple ways of categorizing standing in public law cases. For example, Cane distinguishes between *personal standing* - that of natural persons grounded in their own personal interests - and *representative standing* - broadly comprising cases where applicants represent the interests of others or the public interest.[135] Within the latter category, Cane further distinguishes between *surrogate standing* - natural persons representing the interests of another individual - *public interest standing* - individuals or corporations purporting to represent the public interest - and *associational standing* - a corporation representing the interests of its individual members.[136] In this brief note I will only discuss *associational standing*, even though some climate cases involve

[134] Examples include *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) para 1; *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 245; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 70); *Environnement Jeunesse v Attorney General of Canada 2021 QCCA 1871*.
[135] Peter Cane, 'Standing up for the Public' [1995] Public Law 276, 276.
[136] ibid.

arguments concerning public interest standing - also related to the prohibition of *actio popularis* discussed in section 3 - as well as versions of surrogate standing in relation to the interests of future generations.[137]

Given the collective nature of climate impacts, individuals affected by them often seek representation by associations as means of obtaining access to courts.[138] Furthermore, the recognition of associational standing for the protection of the environment[139] has also been included in the Aarhus Convention[140] and the Escazú Agreement.[141] Yet, the standing of associations has been often contentious in constitutional climate cases. Put simply, there is an even split between those jurisdictions that recognise associational standing in constitutional climate cases and those that do not. On the one hand, courts in Germany,[142] Ireland,[143] Switzerland,[144] and the United States,[145] have denied standing to associations in constitutional

[137] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 109.
[138] The standing of associations in climate cases was recently addressed by the European Court of Human Rights in *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 489–503.
[139] An exploration of the relationship between legal standing and the protection of the environment can be found in in depth in Peter Cane, 'Standing, Representation, and the Environment' in Ian Loveland (ed), *A Special Relationship?: American Influences on Public Law in the UK* (Oxford University Press 1996); Chris Hilson and Ian Cram, 'Judicial Review and Environmental Law —Is There a Coherent View of Standing?' (1996) 16 Legal Studies 1.
[140] Convention on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters 2161 UNTS 447, 38 ILM 517 (1999) art 9.
[141] Regional Agreement on Access to Information, Public Participation and Justice in Environmental Matters in Latin America and The Caribbean 3398 UNTS (2018) art 8.
[142] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 5) para 136.
[143] *Friends of the Irish Environment v Ireland [2020] IESC 49* [2020] CJ Clarke (Supreme Court of Ireland) 7.
[144] In *Klimaseniorinnen*, the Swiss Supreme Court decided not to decide on the standing of the association. See *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 6) s 1. Nevertheless, the failure to grant associational standing was later considered by the European Court of Human Rights, finding that it amounted to a violation of the association's right of access to a court enshrined in article 6 of the ECHR. See *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12) paras 629–40.
[145] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 4) 245.

climate cases. On the other hand, associations have been granted standing in constitutional actions taking place in Canada,[146] Chile,[147] Mexico,[148] and Norway,[149] among others.

The issue of associational standing is not affected by the legal nature of climate change in the same way that it affects the standing of natural persons, as described in this chapter. This is because, when associations represent the interests of their members, they are normally imposed requirements that relate to their legal status in the domestic legal system, and are therefore not affected by the polycentricity, temporality, and spatiality of climate change.

Yet, the recognition of associational standing may play a significant role in climate cases, as it may allow courts to hold governments liable for their contribution to climate impacts while circumventing some of difficulties of personal standing described in this chapter - e.g. concerning whether plaintiffs are *individually*, *directly*, and *presently* affected. An example of this can be found in the judgement of the European Court of Human Rights in *KlimaSeniorinnen*.[150] In this case, the court denied standing to the individual applicants after concluding that they did not fulfill the criteria for victim status demanded in climate cases.[151] However, the court granted standing to the applicant association on behalf of its members,[152] arguing that it was 'in the interests of the proper administration of justice'.[153]

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[146] *Environnement Jeunesse v. Attorney General of Canada 2021 QCCA 1871* (n 134).
[147] *Sentencia Rol No 25530-2021* (Corte Suprema de Chile (Chilean Supreme Court)).
[148] *Amparo en Revisión 526/2020 Suprema Corte de Justicia de la Nación (Mexican Supreme Court)* [2021] José Fernando Franco González Salas.
[149] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 70).
[150] *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 12).
[151] ibid 531–6.
[152] ibid 526.
[153] ibid 523.

The European Court conducted its review of Switzerland's climate response on the basis of associational standing and even declared a violation of Switzerland's positive obligations under article 8 of the ECHR for failing to 'devise a regulatory framework setting the requisite objectives and goals' to tackle climate change.[154] The court further declared a violation of the applicant association's right to access to court (article 6 of the ECHR) resulting from the fact that the Swiss domestic courts 'did not engage seriously or at all with the action brought by the applicant association'.[155]

The use of associational standing in *KlimaSeniorinnen* raises a number of legal questions whose discussion exceeds the scope of this chapter. For example, it raises doubts concerning a potential inconsistency by the European Court, given that the court granted standing to the association *on behalf of its members*, even though such members were explicitly found to lack victim status to lodge the complaint. This situation seems to imply that individuals may circumvent standing requirements in climate cases simply by associating with others, even if they do not individually meet the conditions for victim status set out by the court.[156] In any case, the issue of associational standing is expected to play an important role in future constitutional climate cases.

7. Conclusion

This chapter has explored how the nature of climate change challenges the interpretation of standing requirements in constitutional adjudication. Specifically, climate change adds complexity

[154] ibid 562, 573–4.
[155] ibid 636.
[156] Milanovic (n 61).

to the interpretation of the requirements typically associated with this doctrine e.g. who may bring claims, when harm occurs, and how causation is established. These challenges expose the limitations of standing doctrines, revealing a tension for courts: overly restrictive requirements risk excluding legitimate claims, while overly permissive ones may stretch the boundaries of constitutional adjudication.

Nonetheless, my analysis also illustrates the way in which constitutional courts around the world have accommodated the constitutional legal questions triggered by climate change by adapting existing doctrines of adjudication without losing sight of the appropriate boundaries of the judicial role. Humility offers a critical framework for navigating these difficulties. By embracing doctrinal humility, courts can engage thoughtfully with the unprecedented complexities of climate cases, crafting interpretations that remain consistent with constitutional frameworks while accounting for the cumulative, long-term, and collective nature of climate harm.

Ultimately, humility allows courts to strike a careful balance - ensuring access to justice for individuals and communities affected by climate change while maintaining respect for their institutional boundaries. This balanced approach ensures that constitutional adjudication remains both responsive to the evolving realities of climate change and meaningful in its contribution to the development of constitutional law in this context.

Chapter 5. Rights-based Adjudication around Climate Change

1. Introduction

Climate change represents a serious threat to the enjoyment of multiple constitutional rights - e.g. life, physical integrity, property, a healthy environment - prompting individuals around the world to seek protection from climate impacts before constitutional courts. In 2018, Peel and Osofsky identified a 'Rights Turn in Climate Change Litigation',[1] underscoring the growing reliance on rights-based arguments to hold governments accountable for their (in)action vis-à-vis climate change, as seen in prominent cases like *Urgenda*[2] and *Leghari.*[3] Since then, legal scholarship on climate change has increasingly explored rights-based climate litigation and its potential.[4] Nevertheless, scholarly accounts have yet to engage with the challenges posed by the legal nature of climate change for the adjudication of rights-based climate disputes. This chapter addresses that gap by analysing the reasoning of constitutional courts in rights-based climate cases.

The analysis here presented reveals that the use of constitutional rights in climate cases is far from uniform across jurisdictions, giving rise to distinct legal and doctrinal debates. For

[1] Jacqueline Peel and Hari M Osofsky, 'A Rights Turn in Climate Change Litigation?' (2018) 7 Transnational Environmental Law 37.

[2] *Stichtig Urgenda v De Staat der Nederlanden* [2015] Rechtbank Den Haag (Hague District Court) ECLI:NL:RBDHA:2015:7196; *Stichtig Urgenda v De Staat der Nederlanden* [2019] Hoge Raad der Nederlanden (Supreme Court of the Netherlands) ECLI:NL:HR:2019:2007.

[3] *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 04/09/2015*. The judicial orders in this case are available at: <https://climatecasechart.com/non-us-case/ashgar-leghari-v-federation-of-pakistan/#:~:text=Summary%3A,Policy%20(2014%2D2030)> accessed 28 June 2024.

[4] Examples include, among others: Geetanjali Ganguly, Joana Setzer and Veerle Heyvaert, 'If at First You Don't Succeed: Suing Corporations for Climate Change' (2018) 38 Oxford Journal of Legal Studies 841; César Rodríguez-Garavito (Ed.), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022); Ottavio Quirico, 'Climate Change and State Responsibility for Human Rights Violations: Causation and Imputation' (2018) 65 Netherlands International Law Review 185; Annalisa Savaresi and Joana Setzer, 'Rights-Based Litigation in the Climate Emergency: Mapping the Landscape and New Knowledge Frontiers' (2022) 13 Journal of Human Rights and the Environment 7.

example, some cases revolve around whether a specific action of the state in relation to climate change - e.g., the phasing out of coal-fired power plants in the country -[5] amounts to an interference with the constitutional rights of coal-plant workers due to the impacts of the energy transition on their jobs. In others, constitutional courts are called upon to determine whether existing legal framework are sufficient or adequate to protect citizens' rights from the risks of climate impacts, even if such risks do not originate directly from government actions.[6]

In both examples, claimants engage constitutional rights as the main legal ground of their claim. Yet, the analysis conducted by courts, as well as the standards of adjudication employed in each of them, differ significantly. The former case concerns *negative rights* - rights against government interferences -[7] and therefore revolves around the identification of an impugned government conduct to which an interference with rights can be attributed.[8] Conversely, the latter case revolves around *positive rights* - rights to protection from third-party interferences -[9] meaning that the judicial analysis focuses on the identification of a risk to constitutional rights that triggers the state's duties of protection and a qualitative assessment of the adequacy or sufficiency of existing measures to mitigate such risks.[10]

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[5] As we will see, this was the case in *Sentencia Rol No 25530-2021* (Corte Suprema de Chile (Chilean Supreme Court)).
[6] Examples of this kind of cases are *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* [2021] First Senate [143–72]; *2020 Heonma 389, etc 29/08/2024 Public Notice 335, 1409 (Constitutional Court of Korea)*; *Verein KlimaSeniorinnen Schweiz and Others v Switzerland (application no 53600/20), (ECHR, 09 April 2024)*.
[7] Cécile Fabre, *Social Rights Under the Constitution: Government and the Decent Life* (Oxford University Press 2000) 41; Charles Fried, *Right and Wrong* (Harvard University Press 1978) 110.
[8] Robert Alexy, 'On Constitutional Rights to Protection' (2009) 3 Legisprudence 1, 5–10; Stephen Gardbaum, 'Positive and Horizontal Rights: Proportionality's Next Frontier or a Bridge Too Far?' in Vicki C Jackson and Mark Tushnet (eds), *Proportionality: New Frontiers, New Challenges* (Cambridge University Press 2017) 221–3.
[9] Alexy (n 8) 4; Aharon Barak, *Proportionality: Constitutional Rights and Their Limitations* (Cambridge University Press 2012) 423.
[10] Barak (n 9) 430–1.

A close examination of courts' reasoning further suggests that each framing of rights prompts different legal inquiries, from identifying an impugned state measure in negative-rights cases, to assessing whether current policies adequately meet state duties of protection in positive-rights claims. Consequently, constitutional courts face differing sets of challenges in adjudicating these cases, depending on how claimants frame their claims. That is to say, the challenges facing courts in cases of, for example, *negative* rights, are different from those present in disputes concerning *positive-protective* rights.

In this context, humility emerges as a guiding principle for constitutional courts adjudicating rights-based climate cases. Epistemic humility encourages courts to consider multiple ways of framing rights in climate cases - as negative or positive rights, or as ancillary tools to interpret other constitutional norms - remaining sensitive to the multiple dimensions of climate harm and the various ways of understanding states' responsibility to respect and protect constitutional rights. Moreover, doctrinal humility urges courts to acknowledge the limitations of established frameworks to capture the legal nature of climate change. It fosters openness to developing novel interpretations and standards of review that better account for its polycentricity, spatiality, and temporality.

Finally, institutional humility instructs courts to balance the need for rigorous protection of constitutional rights with respect for the discretion of the political branches in addressing the wide-ranging and complex challenges of climate governance. This includes recognising the pressing need for judicial engagement to clarify the scope of constitutional rights protection in

the face of climate impacts, while remaining mindful of the judiciary's inherent limitations in addressing the full scale and magnitude of climate change.

Ultimately, a humble approach to rights adjudication requires courts to chart a principled pathway for lawful and effective climate action, striking a balance between judicial intervention to uphold constitutional rights and granting the necessary flexibility for the political branches to navigate the complexities of climate governance. By ensuring that judicial reasoning remains both responsive to the unprecedented challenges of climate disputes and respectful of constitutional boundaries, humility promotes a collaborative approach to addressing climate change.

This chapter is structured as follows. Section 2 explores the distinction between negative and positive rights that guides the analysis in subsequent sections. Section 3 analyses cases concerning *negative* rights. Section 4 focuses on *positive* rights claims. Section 5 discusses the use of constitutional rights as ancillary tools to inform the scope and content of other constitutional norms. Section 6 concludes.

It is worth noting that this chapter only considers the reasoning of constitutional courts with respect to the merits of rights-based climate cases - as opposed to considerations of admissibility broadly speaking. Consequently, it will focus on cases that courts have deemed admissible, given that considerations of admissibility in relation to justiciability and standing have been discussed in the preceding chapters.

2. Constitutional Rights: Positive and Negative

Constitutional rights can be defined as entitlements or legal positions conferred upon individuals vis-à-vis the state, enshrined in constitutional texts, bills of rights, or jurisprudence - both 'large-C' and 'small-c' constitutions -[11] and 'which are so important that the decision to protect them cannot be left to simple parliamentary majorities'.[12] Although this definition requires further nuances to account for differences in legal systems,[13] it conveys the core idea of rights as entitlements to something, as well as their formal entrenchment through various means.[14]

Constitutional rights are classified in multiple ways in constitutional law scholarship, reflecting the multiple kinds of legal positions protected by them.[15] For the purposes of this chapter, I will distinguish between constitutional rights as *negative* or *positive* rights. On the one hand, *negative* or *defensive* rights impose limits on lawful government action - rights to something being prohibited for the government.[16] In other words, they protect individuals from government actions affecting them, demanding negative actions - omissions - from the state.[17] As such, they give rise to duties of non-interference.[18] By contrast, *positive* rights are constitutional entitlements to government action - rights to something being done by the

[11] Adam Chilton and Mila Versteeg, 'Small-c Constitutional Rights' (2022) 20 International Journal of Constitutional Law 141, 143.
[12] Robert Alexy, *A Theory of Constitutional Rights* (Julian Rivers tr, Oxford University Press 2002) 297.
[13] TRS Allan, 'Constitutional Rights and the Rule of Law' in Matthias Klatt (ed), *Institutionalized Reason: The Jurisprudence of Robert Alexy* (Oxford University Press 2012) 135–7.
[14] Chilton and Versteeg (n 11) 146–51.
[15] An extensive overview of different ways of categorising constitutional rights according to their structure and scope in comparative constitutional law can be found in Stephen Gardbaum, 'Chapter 21: The Structure and Scope of Constitutional Rights' in Tom Ginsburg and Rosalind Dixon (eds), *Comparative Constitutional Law* (Edward Elgar Publishing 2011).
[16] ibid III; Fabre (n 7) 41; Fried (n 7) 110.
[17] Alexy (n 12) 288.
[18] Alexy (n 8) 2.

government.[19] Thus, they impose positive duties on the governments to perform certain positive actions.[20] This is what Fabre calls the 'duty distinction',[21] pointing to a structural difference with substantive implications for their enforcement in constitutional adjudication.

Furthermore, multiple types of positive rights have been identified in constitutional law scholarship. For example, while Gardbaum differentiates between *social and economic rights* on the one hand, and *protective rights* on the other,[22] Alexy identifies three kinds of positive rights: *protective rights*,[23] *rights to organization and procedure*,[24] and *social constitutional rights* -which he also calls entitlements in the narrow sense.[25] In this chapter, any reference to positive rights will refer exclusively to *protective rights*, understood as constitutional rights requiring the state to protect individuals from interferences by third parties.[26] Protective rights thus give rise to states' duties of protection.[27]

At this point, the reader might wonder what the rationale is behind elaborating on the distinction between positive and negative rights in a chapter focused on rights-based constitutional adjudication on climate change. There are three reasons behind the use of this distinction. Firstly, the distinction between negative and positive rights is consequential for the assessment and outcome of climate cases due to significant differences in their recognition and

[19] Gardbaum (n 15); Fabre (n 7) 41; Fried (n 7) 110.
[20] Alexy (n 12) 288.
[21] Fabre (n 7) 41.
[22] Gardbaum (n 15).
[23] Alexy (n 12) 300–13.
[24] ibid 314–23.
[25] ibid 334–48.
[26] Alexy (n 8) 4; Barak (n 9) 423.
[27] Alexy (n 12) 300–1.

judicial enforcement across jurisdictions.[28] In some jurisdictions, courts have interpreted their constitutional frameworks so as not to provide for judicial enforcement of positive rights.[29] Classic examples of this are Canada - with some nuances -[30] and the United States,[31] two countries where many of the constitutional climate cases discussed in this research originate. This means that in some jurisdictions, climate cases can only be framed in terms of violations of negative rights, the adjudication of which follows a different methodology from positive rights cases.

The judgment of the Superior Court of Justice of Ontario in *Mathur* illustrates the importance of the distinction between negative and positive rights in jurisdictions with no widespread enforcement of the latter. In this case, the court found no violation of the rights of the claimants because, among other reasons, the applicants were 'seeking to place a freestanding positive obligation on the state' with respect to the right to life and security of the person under section 7 of the Canadian *Charter*.[32] Later on, the Ontario Court of Appeal overturned this decision and required the lower court to treat the claim as one concerning negative rights.[33] In any case, the distinction between positive and negative rights was consequential for the rulings of both courts, given that framing the case as one concerning positive rights would raise a number of difficulties whose consideration is not required negative rights cases.

[28] A brief overview of the recognition of positive rights in comparative constitutional law can be found in Barak (n 9) 423–5.
[29] ibid 424.
[30] An overview of jurisprudential debates around the potential recognition of some positive rights in Canada can be found in Michael Da Silva, 'Positive Charter Rights: When Can We Open the "Door?"' (2021) 58 Osgoode Hall law journal (1960) 669.
[31] See, among others, Barak (n 9) 424–5; Emily Zackin, 'Positive Rights' in Mark Tushnet, Mark Graber, and Sanford Levinson (eds), *The Oxford Handbook of the U.S. Constitution, 2015* (Oxford University Press 2015).
[32] *Mathur v Ontario, 2023 ONSC 2316* [132].
[33] *Mathur v Ontario, 2024 ONCA 762* [37, 75–9].

Secondly, the distinction between positive and negative rights reflects judicial practice in the constitutional climate cases discussed in this chapter and determines the standards of review of state conduct employed by courts.[34] This means that judicial reasoning in each case is largely determined by the choice of framing it as a potential violation of negative or positive rights - or both, although on different grounds. For instance, in *Neubauer*, the court examined two different potential violations, one concerning negative rights in relation to the right to general freedom enshrined in article 2(1) of the basic law, and one concerning positive rights stemming from the rights to life and health, and to property, protected by articles 2(2) and 14(1) respectively.[35] The standard of review employed by the court was different in both cases, as will be shown below.

The need for different standards of adjudication between negative and positive rights cases stems from structural differences between the duties imposed on the state by either kind of rights: duties of respect or non-interference for negative rights,[36] and duties of protection for positive rights.[37] This is what is often referred to as the *conjunctive* structure of negative rights, on the one hand, and the *alternative* or *disjunctive* structure of positive rights, on the other hand.[38] Alexy summarises this distinction in the following terms:

> When there is a prohibition on destroying or adversely affecting something, then *every act* that represents or brings about destruction or an adverse effect is prohibited. By

[34] Examples include: *Mathur v. Ontario, 2023 ONSC 2316* (n 32) paras 125–42; *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-HRET* (Supreme Court of Norway) [166–9]; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 152.
[35] See *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 142–72, 182–265.
[36] Alexy (n 8) 2.
[37] Alexy (n 12) 300–1.
[38] Among others, see: Alexy (n 8) 5; Matthias Klatt, 'Positive Rights: Who Decides?: Judicial Review in Balance' (2015) 13 International Journal of Constitutional Law 354, 356; Vladislava Stoyanova, 'The Disjunctive Structure of Positive Rights under the European Convention on Human Rights' (2018) 87 Nordic Journal of International Law 344.

> contrast, if there is a command to protect or support something, then *not every* act that represents or brings about protection or support is required.[39]

In other words, while the actions prohibited by negative rights are *prima facie* specified - *every* interfering action is prohibited - those demanded by positive rights are generally unspecified[40] - only *some* actions are required - unless there is only one possible action necessary to protect the right in a specific case.[41] This is because the actions required to protect individuals are closely related to the nature of the risk from which such protection is required. For example, the actions required to protect the rights of citizens from climate change are very different from the actions required to protect them from, say, toxic waste, even if the states duties of protection stem from the right to physical integrity in both cases. Consequently, it is initially for the political branches, in discharging their duties of protection, to determine the specific acts to be performed.[42] Decision makers thus enjoy 'means-selecting discretion' with respect to the protection of positive rights.[43]

The structural differences between positive and negative rights were explicitly discussed by the German Constitutional Court in *Neubauer*. The words of the court are worth quoting in full:

> There is an essential difference between the subjective, defensive rights against state interference that arise from fundamental rights on the one hand, and the state's duties of protection that result from the objective dimension of fundamental rights on the other. In

[39] Alexy (n 8) 5.
[40] Alexy (n 12) 308–13; Alexy's formulation of this structural difference is further elaborated upon in M Kumm, 'Constitutional Rights as Principles: On the Structure and Domain of Constitutional Justice. A Review Essay on A Theory of Constitutional Rights' (2004) 2 International journal of constitutional law 574, 586.
[41] As suggested by Alexy, only in such a case will the structure of positive rights be identical to that of negative rights. See Alexy (n 12) 308–13.
[42] Kumm (n 40) 586.
[43] Alexy (n 8) 16.

> terms of purpose and content, defensive rights are aimed at prohibiting certain forms of state conduct, whereas duties of protection are essentially unspecified.[44]

This quote reflects the importance of distinguishing between negative and positive rights in constitutional adjudication. The main implications of this distinction is that the study of potential violations of negative or positive rights employs substantially different standards of review in either case.[45] Put briefly, while the analysis of negative rights revolves around the identification of a state action that interferes with the right in question - and an analysis of its potential justification -[46] a violation of positive rights requires the identification of a risk of harm to the right in question and an assessment of the sufficiency or adequacy of existing protective measures to mitigate such risk.[47]

Thirdly, and in line with the above, distinguishing between negative and positive rights has analytical value to understand the multiple ways in which the legal nature of climate change creates difficulties for the adjudication of rights-based constitutional climate cases.[48] In other words, the legal nature of climate change creates different complexities in cases of negative rights compared to those it raises in positive rights claims. This is because the standards of adjudication

[44] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 152.
[45] This very issue is discussed at length in Alexy (n 8) 5–15. It has also been discussed more recently in the context of the practice of the European Court of Human Rights. See, for example, Johan Vorland Wibye, 'Reviving the Distinction between Positive and Negative Human Rights' (2022) 35 Ratio Juris 363, 376; Stoyanova (n 38); Vladislava Stoyanova, 'Causation between State Omission and Harm within the Framework of Positive Obligations under the European Convention on Human Rights' (2018) 18 Human Rights Law Review 309.
[46] Alexy (n 8) 5–9.
[47] Examples of such standards of review are discussed in Gardbaum (n 8) 230–7.
[48] A similar line of argumentation to defend the use of this distinction has been recently provided by Wibye in the context of the jurisprudence of the European Court of Human Rights. See Wibye (n 45) 365–72.

differ significantly, meaning that courts' consideration of the legal nature of climate change and its impacts also varies.

For example, climate cases framed around negative rights rely heavily on issues of causality and attribution of responsibility of alleged harms to state action - e.g. *Clean Air Council*[49]. This is because, for a claim to succeed, claimants must substantiate that the specific state actions challenged caused, or contributed to, their injuries (see Chapter 4).[50] In negative rights cases, the legal nature of climate change mainly complicates the attribution of the claimants' injuries to the challenged state action. Furthermore, the legal nature of climate change can also encumber the determination of whether the challenged actions can, despite their contribution to the claimants' injuries, be justified in light of the multiple trade-offs embedded in climate legislation - e.g. between energy security and the needs of the energy transition.

Conversely, the main issue of contention in positive rights cases relates to whether climate change poses a 'real and immediate' risk to the rights of the claimants so as to trigger states' duties of protection,[51] or whether existing climate legislation is sufficient or adequate to protect citizens from such risks, fulfilling the states' duties of protection.[52] Unlike negative rights, positive rights do not require causation between government actions and claimants' injuries to be

[49] *Clean Air Council v United States, 362 F Supp 3d 237 (ED Pa 2019)* [242–9].
[50] Ian R Curry, 'Establishing Climate Change Standing: A New Approach' (2019) 36 Pace Environmental Law Review 297, 304–6; Stefan Theil, *Towards the Environmental Minimum: Environmental Protection through Human Rights* (Cambridge University Press 2021) 269.
[51] Such was the case in *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34) paras 164–78.
[52] The latter assessment has been at the core of the rulings in cases like *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6); *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6); *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 6).

established, insofar as what triggers the states' duties of protection is the risk of harm from third-party interferences, not the government's own actions.[53] Yet, the legal nature of climate change poses other challenges for positive rights cases. For instance, it complicates the determination of whether climate-related risks of harm of constitutional rights is sufficiently pressing, given the complex temporality and spatiality of climate change.

Before proceeding with the analysis of existing constitutional climate cases, two clarificatory remarks are necessary. First, the distinction between negative and positive rights does not overlap with the distinction between civil and political rights, on the one hand, and social and economic rights, on the other.[54] In that sense, the analysis presented in this chapter only considers the duties that specific rights impose on government action, regardless of whether the right in question is nominally a civil, political, or socioeconomic right. At the same time, I do not imply that either negative or positive rights are more important than the others, but simply that the distinction is useful to understand judicial practice with regards to constitutional climate cases, for the reasons provided above.[55]

Second, negative and protective rights are not mutually exclusive, in the sense that a given constitutional right can often impose both negative and positive duties on the state. For example, the right to life can impose a duty not to deprive an individual of their life through government

[53] Theil (n 50) 268.
[54] As suggested by Fabre, these two distinctions are often conflated in scholarly discussions about the nature of rights, giving rise to erroneous assumptions that all civil and political rights are negative, while all social rights are positive. See Fabre (n 7) 43–6.
[55] On the rejection of a priority claim of negative over positive rights, see Wibye (n 45) 365–7.

actions, as well as a duty to protect the life of individuals from affectations by other individuals - or from climate change itself.[56]

In line with the above, this chapter will discuss positive and negative duties of the state in relation to a number of constitutional rights in the context of climate cases - e.g. rights to life,[57] personal integrity,[58] property,[59] to a healthy environment.[60] Although *prima facie* the scope and content of each right vary significantly, the study of existing constitutional climate cases reveals that these differences become less important when what is at stake are the obligations of the state in the face of climate change as a common threat.

This situation arises because climate change acts as a common factual background for claims framed around multiple rights. Indeed, climate change has the potential of affecting the enjoyment of a plurality of constitutional rights. This also means that state action with respect to climate change has the ability to protect, or infringe, multiple rights at the same time. Therefore, regardless of the right in question, courts often employ similar standards of review of state conduct with respect to climate change. For example, as noted above, the court in *Neubauer*

[56] This issue is discussed at length in C Fabre, 'Constitutionalising Social Rights' (1998) 6 The Journal of Political Philosophy 263. Furthermore, an example of this dual content of the right to life in the specific context of climate change can be found in the judgment of the German Constitutional Court in *Neubauer*. See *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 144–5.

[57] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6); *Mathur v. Ontario, 2023 ONSC 2316* (n 32); *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34).

[58] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6); *Mathur v. Ontario, 2023 ONSC 2316* (n 32); *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34).

[59] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) 171–3.

[60] *Shrestha v The Office of the Prime Minister & Ors NKP, Part 61, Vol 3*; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34); *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6).

employed the same standard of review to study potential violations of the duties of protection stemming from the rights to life and physical integrity, and the right to property.[61] Similarly, the Norwegian Supreme Court followed the same line of reasoning to study potential violations of the right to life, and the right to private and family life in *Nature and Youth Norway*.[62]

3. Negative Rights against States Interferences

Negative rights impose duties of non-interference on the state. This generally means that establishing a violation of negative rights requires the identification of an unlawful government conduct that infringes upon the protected rights of individuals. In the context of constitutional climate cases, the characterization of such conduct is often contentious, meaning that it is not clear what governments are accountable for in relation to climate change.[63] For instance, claims challenging specific actions or pieces of legislation leading to GHG emissions may face obstacles related to causation, as proving that the impugned actions have caused or even contributed to the claimants' injuries is complicated due to temporality, spatiality, and polycentricity of GHG emissions (see Chapters 1 and 4).

Existing cases suggests that negative rights have been framed in multiple ways climate cases. For example, while some cases contend that government legislation promoting or

[61] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 143–81.
[62] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34) paras 164–78.
[63] This was taken into account by the court in *Clean Air Council* as an argument against the admissibility of the claim. See *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 49) 242–8. However, it is worth noting that in *Juliana*, considering the host of policies challenged by the claimants, the court conceded that there was 'at least a genuine factual dispute as to whether those policies were a "substantial factor" in causing the plaintiffs' injuries'. As explored in chapter 3, the court ultimately dismissed the case for lack of redressability. See *Juliana v United States, 947 F3d 1159 (9th Cir 2020)* 1169–72.

authorising GHG emissions violate the rights of the plaintiffs - e.g. *Clean Air Council* and *Animal Legal Defense Fund* -[64] other cases argue that climate policies have side-effects that infringe upon individual rights - e.g. *Workers Union of Somarco*.[65] As anticipated above, different framings of rights-based claims give rise to different challenges for the adjudication of climate disputes. For example, while cases like *Clean Air Council* raise difficulties concerning the causality between government policies and individual climate-related injuries,[66] causality is not a common point of contention is cases like *Workers Union of Somarco*, as there is a straightforward link between the challenged state actions and the claimants' injuries. A closer look at existing case law facilitates a deeper understanding of such challenges.

a) Chilean coal plants workers affected by the green energy transition

In 2021, the Chilean Supreme Court decided a claim for the protection of constitutional rights initiated by unions of coal plants workers against the energy transition measures adopted by the Chilean government. In *Workers Union of Somarco*,[67] the plaintiffs challenged the decarbonization plan approved by the Ministry of Energy which mandated the gradual closure of coal plants in the country, causing the claimants to lose their jobs without having been involved in the elaboration of such plan.[68] Thus, the claimants argued that the decarbonization plan

[64] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 49) 247–9; *Animal Legal Defense Fund v United States, 404 F Supp 3d 1294 (D Or 2019)* 1299–301.
[65] *Sentencia Rol No. 25.530-2021* (n 5).
[66] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 49) 247–9.
[67] *Sentencia Rol No. 25.530-2021* (n 7). More information on this case can be found in 'Company Workers Union of Maritima & Commercial Somarco Limited and Others v Ministry of Energy' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/company-workers-union-of-maritima-commercial-somarco-limited-and-others-with-ministry-of-energy/> accessed 18 October 2024.
[68] *Sentencia Rol No. 25.530-2021* (n 5) 1–2.

constituted a violation of their rights to equality, freedom of labour, freedom of association, and property, all of which are protected by article 19 of the Chilean Constitution.[69]

The Supreme Court decided in favour of the claimants and ordered the government to elaborate a new plan that facilitates the reinsertion of coal plant workers into the labour market, harmonising both the energy transition and the rights of the claimants.[70] In its reasoning, the court conceded that the plan pursued a legitimate aim through means necessary to reach the country's commitment towards net-zero GHG emissions by 2050.[71] Nevertheless, it emphasised the need to incorporate safeguards as an integral part of the 'just transition' towards a low-carbon economy, protecting vulnerable groups from the negative side-effects that climate policies might have on them.[72]

Workers Union of Somarco is different from most of the cases discussed in this dissertation. Instead of arguing that state climate action is insufficient - e.g. *Heonma*[73] or *KlimaSeniorinnen* -[74] or that the state promotes excessive emissions harming the claimants' rights - e.g. *Juliana*[75] or *Clean Air Council* -[76] the plaintiffs in this case contended that the climate policies adopted by the government adversely affected them. In that sense, this case has been categorised

[69] *ibid 1.*
[70] ibid 8.
[71] ibid 2.
[72] ibid 5.
[73] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6).
[74] *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Supreme Court) 1C_37/2019.
[75] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 63).
[76] *Clean Air Council v. United States, 362 F. Supp. 3d 237 (E.D. Pa. 2019)* (n 49).

as a 'just transition' case,[77] meaning that it concerns 'how climate action is designed and delivered, rather than the need for such action'.[78]

Cases like *Workers Union of Somarco* do not give rise to the difficulties described above in terms of causality and identification of the state's impugned conduct. Indeed, these two elements were straightforward, as the affectations on the rights of individuals resulted directly from identifiable plans to phase out coal plants in the country. The main point of contention in this case was whether the affectations of the claimants by the decarbonization plan was justified, rather than whether there was a clear affectation in the first place.[79] This situation confirms the argument elaborated above concerning the multiple uses of constitutional rights in climate cases.

b) Intertemporal interferences with constitutional rights in Neubauer

On 24 March 2021, the First Senate of the German Federal Constitutional Court decided four constitutional complaints against the German Climate Protection Act of 12 December 2019 (Klimaschutzgesetz, hereinafter KSG).[80] The claimants consisted of German citizens, two environmental associations, and individuals from Bangladesh and Nepal.

According to the claimants, the Germany had failed to introduce a legal framework sufficient to reduce greenhouse gas emissions in order to limit the increase in global temperature to well below 2ºC and preferably to 1.5ºC, as required by the Paris Agreement.[81] They further

[77] Annalisa Savaresi and others, 'Conceptualizing Just Transition Litigation' (2024) 7 Nature Sustainability 1379, 1382.
[78] ibid 1379–80.
[79] *Sentencia Rol No. 25.530-2021* (n 5) paras 7–10.
[80] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 1.
[81] *ibid 38.*

claimed that the emission reduction targets included in art. 3(1) second sentence and 4(1) third sentence of the KSG (55 per cent by 2030, compared to 1990 levels, and climate neutrality by 2050)[82] were inadequate to stay within a CO2 budget that correlated with a 1.5ºC temperature limit.[83]

The complainants relied primarily on duties of protection arising from fundamental rights protected by Art. 2(2) (right to life and physical integrity) and Art. 14(1) (right to property) of the German Basic Law.[84] The claimants also relied on a fundamental right to a future consistent with human dignity (menschenwürdige Zukunft) and a fundamental right to an ecological minimum standard of living (ökologisches Existenzminimum), which they derived from Art. 2(1) in conjunction with Art. 1(1) (human dignity) and from Art. 2(1) (right to free development) in conjunction with Art. 20a (protection of the natural foundations of life and animals) of the Basic Law.[85] In its judgment, the court provided a separate analysis of the duties of protection arising from the right to life and physical integrity, and the right to property - a positive rights analysis - and a potential interference with general freedom - a negative rights analysis. I will discuss the court's analysis of negative rights in this section, leaving aside the court's reasoning concerning positive rights which will be discussed in section 4.

i) Interference with general freedom and *intertemporal fundamental rights*

[82] These targets were amended by Parliament soon after the decision of the Constitutional Court. The updated version of the Act can be found in <https://www.gesetze-im-internet.de/englisch_ksg/englisch_ksg.html#p0028> accessed 03 July 2024.
[83] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 38.
[84] *ibid 1, 40, 127.*
[85] ibid 1.

The court found a violation of the right to general freedom[86] protected under article 2(1) of the Basic Law.[87] To reach this conclusion, the court interpreted fundamental rights as 'intertemporal guarantees of freedom' (*intertemporale Freiheitssicherung*)[88] and considered the future 'interference-like' (*eingriffsänhliche Vorwirkung*) effects of the annual emission allowances set out by the KSG.[89] In other words, it studied the trajectory of future emissions reductions according to government data and its impact on future restrictions of freedom.

The reasoning of the court around this issue is highly structured and extensive, thus deserving a careful reconstruction to facilitate the reader's understanding.[90] The court began by noting that Article 20a of the Basic Law obliges the state to take action against climate change.[91] This obligation was, in principle, appropriately discharged by the legislator when it adopted the KSG, setting a target of a 55% reduction in greenhouse gas (GHG) emissions by 2030 (compared

[86] An examination of the content of this right in German constitutional law can be found in Wolfram Cremer, 'The Basic Right to "Free Development of the Personality" – Mere Protection of Personality Development versus General Right of Freedom of Action' in Hermann Pünder and Christian Waldhoff (eds), *Debates in German Public Law* (Hart Publishing 2014).

[87] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 182.

[88] ibid 183.

[89] ibid.

[90] An analysis of this judgment can also be found in, among others Agnes Hellner and Yaffa Epstein, 'Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases Arctic Oil, Neubauer, and l'Affaire Du Siècle' (2023) 35 Journal of Environmental Law 207, 216–20; Gerd Winter, 'The Intergenerational Effect of Fundamental Rights: A Contribution of the German Federal Constitutional Court to Climate Protection' (2022) 34 Journal of Environmental Law 209; Petra Minnerop, 'The "Advance Interference-Like Effect" of Climate Targets: Fundamental Rights, Intergenerational Equity and the German Federal Constitutional Court' (2022) 34 Journal of Environmental Law 135.

[91] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 190, 193, 197.

to 1990 levels) and committing to carbon neutrality by 2050,[92] in line with the temperature goals of the Paris Agreement.[93]

To evaluate the implications of the KSG for fundamental rights, the court emphasised the need to translate the Paris Agreement's temperature goal into a measurable carbon budget.[94] The court followed the budget of the German Advisory Council on the Environment, who estimated that Germany's remaining carbon budget between 2020-2050 amounted to 6.7 gigatonnes of CO2,[95] drawing on calculations from the Intergovernmental Panel on Climate Change (IPCC).[96]

The court pointed out that the emissions allowances estimated in the KSG for the period between 2020 and 2030 added up to between 6 and 7 gigatonnes of CO2, leaving less than 1 gigatonne available for the period from 2031 to 2050.[97] In the view of the court, such a trajectory

[92] ibid 197, 207, 213.

[93] Art. 2 of the Paris Agreement stipulates that states will aim to hold 'the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels'.

[94] Given that the long-term climate targets are expressed in terms of degrees of global warming above pre-industrial levels (see above), the court needed to translate such temperature goals into a quantifiable amount of remaining emissions (first globally and then domestically) in order to meet such targets. The court then used the domestic carbon budget as a benchmark against which to assess the consequences of the emission allowances included in the KSG on the rights of the claimants. See *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 214–31.

[95] For reference, according to statistics from the federal government, Germany emitted 0.73 gigatonnes of CO2 equivalents GHG in 2020, and 0.67 gigatonnes in 2023. See Federal Ministry for Economic Affairs and Climate Action (BMWK), 'Final Climate Action Status of 2020: Emissions Fell by 41% Compared to 1990' (*bmwk.de*, 20 January 2022) <https://www.bmwk.de/Redaktion/EN/Pressemitteilungen/2022/20220120-final-climate-action-status-of-2020-emissions-fell-by-41-compared-to-1990.html> accessed 12 September 2024; Riham Alkousaa, 'Germany's 2023 CO2 Emissions Fall to Lowest in 70 Years but Drop Not yet Sustainable - Study' *Reuters* (4 January 2024) <https://www.reuters.com/business/environment/germanys-2023-co2-emissions-fall-lowest-70-years-drop-not-yet-sustainable-study-2024-01-04/> accessed 12 September 2024.

[96] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 219.

[97] ibid 232–3.

implies that after 2030, emissions - and the liberties associated with them -[98] would face severe restrictions, risking significant impairments to fundamental rights in the future.[99] The court thus concluded that the emissions trajectory until 2030 had an 'advanced interference-like effect' on the claimants' future freedoms.[100]

According to the court, the risk of affectation to the claimants' rights remained unaddressed because the legislator had not enacted safeguards to mitigate these effects, such as setting annual emission targets leading to carbon neutrality.[101] The absence of such safeguards violated the principle of proportionality, which requires the legislator to plan the transition to carbon neutrality in a forward-looking manner, ensuring that the associated restrictions on freedoms are gradual and fairly distributed over time and across generations.[102] Finally, the court concluded that by allowing the emissions levels projected for the 2020-2030 period under the KSG, the legislator violated the claimants' fundamental rights, understood in this context as 'intertemporal guarantees of freedom'.[103]

ii) Unpacking the court's reasoning

[98] According to the court, as climate change intensifies, the restrictions of freedoms associated with GHG will be increasingly justified by the constitutional mandate to protect the environment under art. 20 of the basic law. In other words, the fact that there is a finite pool of remaining emissions to meet the global temperature goal entails that emissions allowed in the present are, by definition, deducted from the emissions allowed in the future. Similarly, climate-related freedoms in the present pose an irreversible risk of impairments on future freedom. See ibid 186.
[99] ibid 244–6.
[100] ibid 183.
[101] ibid 243–55.
[102] According to the court, if the burden of mitigation is offloaded onto the future, subsequent generations might suffer drastic losses of freedom, risking what the court calls an 'emergency break' or 'radical abstinence' in order to achieve climate targets. ibid 192–3.
[103] ibid 182–4.

Three aspects of the judgment are worth discussing to understand the application of negative rights in this case. First, the court studied a violation of negative rights[104] resulting from the KSG, instead of from the government's contribution to climate change. In this sense, the decision resembles the Chilean case discussed above. This was grounded in a trade-off identified by the court between the protection of human freedom - including those activities generating GHG emissions - and the restrictions of freedom necessary to reduce GHG emissions in order to protect constitutional rights from the threat of climate change.[105] It could be argued that the court implicitly suggested that the Constitution protects citizens from the threat of climate change as much as it protects them from disproportionate losses of freedom demanded by climate legislation. This is relevant because it shows that the judgment revolved around *how* climate action was conducted by the state instead of *what* level of ambition was constitutionally required to protect citizens' rights from climate change.[106]

The use of negative rights in this case also determined the court's standard of review. Indeed, after finding that the KSG had an 'advance interference-like effect on the freedom of the complainants',[107] the court interpreted the case as one of balancing between the fulfilment of a constitutional obligation - the protection of the environment under art. 20 of the Basic Law - and the protection of fundamental rights from interferences necessary to achieve such obligation.

[104] The German court does not employ the language of negative and positive rights but rather distinguishes between the subjective and objective dimensions of fundamental rights. Nevertheless, both distinctions reflect the different functions of rights as discussed above, drawing on Jellinek's *status negativus* and *status positivus*. See Alexy (n 12) 163–77. On the use of this distinction in *Neubauer*, see Minnerop (n 90) 136–7.
[105] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 184–6.
[106] See ibid 143, 170–2.
[107] ibid 183–4.

Thus, it conducted a seemingly ordinary two-step proportionality analysis to determine whether the interference with future freedom was constitutionally justified.[108]

Second, the court developed a legal standard to determine whether the KSG had an unjustifiable impact on future freedom, drawing on a mix of domestic and international legal and scientific sources. On the one hand, it considered three elements of the KSG, namely the overall temperature goal of the Paris Agreement, the target to achieve carbon neutrality by 2050, and the annual emission allowances between 2020 and 2030. On the other hand, the court resorted to the government's carbon budget - based on the IPCC's global budget - as a numerical measurement to allow for a like-for-like assessment of the emission allowances of the KSG. This is important because, without the carbon budget, the court could not actually ascertain the practical implications of the KSG on the rights of the claimants.[109] Together, these elements led the court to conclude that, under the current trajectory, existing goals were very unlikely to be achieved without incurring in unreasonable impairments of future freedom in the period 2031-2050.[110] The integration of scientific information was thus crucial for the court's review of the KSG.

The courts use of scientific information to construct a standard of review of the KSG constitutes an example of epistemic humility, in the sense that the court made use of scientific

[108] Typically, after an interference with rights is identified, the court proceeds to determine whether such interference is constitutionally justified. For an interference to be justified, it needs to i) be compatible with the provisions of the basic law, and ii) satisfy the principle of proportionality. See ibid 188–93; Minnerop (n 90) 148.
[109] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 214.
[110] ibid 182–3. As suggested by Minnerop, the court focused on the distribution of the carbon budget as a *freedom budget* over time. Minnerop (n 90) 150, 155.

sources while remaining mindful of its limitations. Indeed, the court aptly noted that the uncertainties surrounding the estimation of carbon budgets prevented their use as an 'exact numerical benchmark'.[111] Instead, the court employed the budgets only as guidelines to delineate the legislator's leeway to set emission allowances in the KSG.

Third, the court's negative rights analysis was informed by a key characteristic of climate change: its future-oriented temporality and irreversible character. From the interpretation of rights as 'intertemporal guarantees of freedom',[112] to the new doctrine of 'advance interference-like effect'[113] on fundamental rights, the consideration of the temporality of climate change allowed the court to ascertain the impact that the burden of climate action would have on the enjoyment of *future* freedom *over time*.

At the same time, the irreversible contribution of GHG emissions to climate change bridged the gap between legislation in the present and its impacts in the future. That is because, if the effects of GHG were reversible, the court would have to wait until an actual interference with the claimants' rights materialised before it could declare a rights violation. Instead, the fact that climate change is irreversible meant that the only way to protect constitutional rights is by preventing such interferences from happening in the first place. This encouraged the court to anticipate future interferences by projecting the impacts of current legislation over time -

[111] *BvR 2656/18/1*, *BvR 78/20/1*, *BvR 96/20/1*, *BvR 288/20* (n 6) para 229.
[112] *ibid 122, 184.*
[113] According to Minnerop, 'The new doctrine of "advance interference-like effect" is evidence of creative judicial reasoning that ushers in an unprecedented constitutional focus on the future effect of current legislative determinations, in response to climate change.' Minnerop (n 90) 148–9.

declaring an 'interference-like effect'.[114] Such a forward-looking approach reflecting the irreversible character of climate change was a crucial element of the court's reasoning in this case.

Admittedly, the court's consideration of the intertemporal effects of climate action was facilitated by the constitutional text itself. Indeed, art. 20 of the Basic Law obliges the state to 'protect the natural foundations of life and animals' as part of 'its responsibility toward future generations'.[115] Notably, this provision incorporates an intertemporal rationale behind the protection of the environment, in the sense that 'it is aimed first and foremost at preserving the natural foundations of life for future generations'.[116] The constitutional importance of future generations allowed the court to consider not just the negative consequences of climate change in the future, but also about the restrictions of future freedom ensuing from climate action itself.[117]

One could argue that the use of negative rights is similar in both *Neubauer* and the Chilean case discussed above, since both cases revolve around the side-effects of climate legislation for the enjoyment of rights rather than the need for climate action. Nonetheless, *Neubauer* takes the capacity of negative rights to regulate the potentially harmful consequences of climate action further than the Chilean case by considering the *future* interferences with fundamental rights

[114] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 184–6.
[115] Basic Law for the Federal Republic of Germany in the revised version published in the Federal Law Gazette Part III, classification number 100-1, as last amended by the Act of 19 December 2022 (Federal Law Gazette I p. 2478). art 20a.
[116] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 193.
[117] According to the court, 'the Basic Law imposes an obligation to safeguard fundamental freedom over time and to spread the opportunities associated with freedom proportionately across generations.' ibid 183.

that could result from stricter restrictions of freedoms necessary to achieve climate goals in the future.

I believe *Neubauer* supports the hypothesis of this thesis perhaps more clearly than any other case. In particular, *Neubauer* shows that climate change adds layers of complexity to the adjudication of climate cases, layers whose legal significance is often not appropriately captured by existing doctrines. After considering the temporality and irreversibility of climate change, the court adjusted its understanding of interferences with negative rights by incorporating an *intertemporal* dimension that led to the development of the doctrine of *advanced interference-like effect* on fundamental rights. This reflects the additional variables - in this case future-oriented temporality and irreversibility - whose consideration was prompted by climate change. Without this new doctrine, a traditional understanding of interference would be unable to capture the legal implications of the KSG on the future freedom of claimants - as happened in the Norwegian case examined below.

The robust engagement with the legal nature of climate change that took place in *Neubauer* also constitutes an example of *doctrinal humility*, in the sense that the court understood the limitations of existing doctrines to capture the consequences of climate action for the future freedom of the claimants. Thus, the court developed an understanding of *interference* with negative rights that accounted for the future but *irreversible* impacts of climate action fundamental rights. Humility encourages courts to engage with the temporality of climate change and consider the future and irreversible impacts of climate legislation on constitutional rights, looking beyond the traditional temporal scope of constitutional adjudication. It instructs

courts to acknowledge and own the limitations of existing doctrines to capture the implications of climate change for constitutional rights, thus developing standards of adjudication that better capture such implications in rights-based adjudication.

c) Mathur and the limits of negative rights to challenge climate-specific legislation

In 2018, the Legislative Assembly of Ontario enacted the *Cap and Trade Cancellation Act* (hereinafter CTCA), which repealed the *Climate Change Mitigation and Low-carbon Economy Act* of 2016. As mandated by art. 3 of the CTCA, the government later introduced a target of reducing Ontario's GHG emissions by 30% below 2005 levels by 2030, lower than the previous target of 37% reduction enshrined in the 2016 Act. In *Mathur v Ontario*, a group of seven young plaintiffs challenged the CTCA and the government target, arguing that Ontario was authorizing and incentivizing dangerous levels of GHG emissions, violating their right to life, liberty and security, as well as their right to equality, protected under sections 7 and 15 of the Canadian Charter, respectively.[118]

In this case, the plaintiffs claimed a violation of negative rights as a consequence of a state action, namely the setting of an insufficient target. This is important because courts in Canada do not recognize positive obligations stemming from the rights to life, liberty and security,[119] or the right to equality.[120] That is to say, the state has no obligation to ensure that individuals enjoy life,

[118] *Mathur v. Ontario, 2023 ONSC 2316* (n 32) para 2.
[119] Nonetheless, the government may be ordered to take positive actions to protect this right in situations when a state conduct has previously aggravated or created risks to the life, liberty, or security of individuals. A discussion of such cases in the case law of the Canadian Supreme Court can be found in *Mathur v. Ontario, 2023 ONSC 2316* (n 32) paras 125–34.
[120] ibid 178–9.

liberty or security, but rather an obligation not to deprive them from the enjoyment of this right.[121]

i) The limitations of negative rights in the decision of first instance

The Ontario Superior Court of Justice rejected the framing of the case as a potential violation of negative rights. The court claimed that the applicants were 'seeking to place a freestanding positive obligation on the state to ensure that each person enjoys life and security of the person, in the absence of a prior state interference with the applicants' right to life or security of the person'.[122] After considering Ontario's contribution to climate change, the court further argued that 'The nature of Ontario's "participation in creating the underlying harm" in this case is no different than the state's "participation" in creating a number of social issues faced by our society in relation to poverty, homelessness, etc.'[123] In other words, the CTCA could not be considered an interference from which the applicant's sought to be free.[124] Instead, the plaintiffs' underlying claim was that the CTCA was insufficiently ambitious. The court concluded that such a claim was better characterized in terms of a potential violation of positive rights.[125]

Furthermore, the court studied a potential violation of the right to equality of the claimants, as they contended that the CTCA impacted young people disproportionately on the basis of their age.[126] The court stated that the right to equality does not impose a positive

[121] ibid 125.
[122] ibid 132.
[123] ibid 134.
[124] ibid 132.
[125] ibid 122, 132, 134–5, 138–9.
[126] ibid 177.

obligation on the state to remedy existing social inequalities. According to the court, such a possibility would make the judiciary drift 'impermissibly (…) into the complex legislative domain of policy and resource allocation, contrary to the separation of powers.'[127] Additionally, the court concluded that the worsening of climate impacts over time did not amount to discrimination based on age, as it was not a result of the claimants age, but simply a temporal distinction that will affect all age groups in the future as global warming exacerbates.[128] Thus, the court concluded that there had been no violation of section 15 of the Charter in this case.[129]

The decision of first instance suggests that climate legislation often resists characterisation as an interference with negative rights, given that the alleged injuries of the claimants would not be alleviated in the absence of it - a traditional heuristic used in of negative rights adjudication.[130] In other words, when states adopt climate measures, it seems hard to claim that its adoption constitutes an interference with rights. Instead, in such cases plaintiffs usually challenge the adequacy and sufficiency of legislation to address climate change, but that is a claim that, as will be explored in the next section, is better suited for the prototypical judicial analysis of positive rights.

ii) Reframing of the case on appeal

The decision of the Superior Court of Justice was challenged before the Ontario Court of Appeal, who overturned the first instance's ruling. According to the Court of Appeal, the judge of first

[127] ibid 176.
[128] ibid 180.
[129] ibid 183.
[130] *ibid 132.*

instance was mistaken in framing the case as one concerning positive rights. Instead, the case should have been framed as one concerning the statutory obligations of Ontario to introduce an emissions reduction target compatible with Charter rights.[131] In the words of the court,

> The appellants are not challenging the inadequacy of the Target or Ontario's inaction, but rather argue the Target itself, which Ontario is statutorily obligated to make, commits Ontario to levels of greenhouse gas emissions that violate their Charter rights.[132]

The quote above reveals a reframing of the case by the Court of Appeal, effectively construing the government target as being inconsistent with statutory obligations under the CTCA and potentially amounting to an interference with the claimants' rights. In other words, the higher court framed the crux of the case as being whether, by setting a target below what is allegedly required by scientific consensus, Ontario allowed a level of GHG emissions incompatible with its statutory obligations, thus affecting the rights of the claimants.[133]

The Court of Appeal declined to decide the application and remitted it for a new hearing before the judge of first instance.[134] Nevertheless, it insisted that the application judge should consider the case 'afresh and through the correct analytical lens',[135] meaning that it should be understood as a case concerning 'whether, given Ontario's positive statutory obligation to combat climate change (…), the Target was Charter compliant'.[136]

The courts' decisions in Mathur draw attention to the multivalence of climate change, as courts provided different interpretations of Ontario's contribution to climate change by means of

[131] *Mathur v. Ontario, 2024 ONCA 762* (n 33) para 37.
[132] *ibid 41.*
[133] ibid 53, 58–62.
[134] ibid 75–9.
[135] ibid 75.
[136] ibid 53.

the target. While the court of first instance understood that the adoption of the target could not be interpreted as interfering with the claimants' rights,[137] the Court of Appeal suggested that, by setting an unambitious target, Ontario was 'contributing' to climate change, increasing the risks of harm on claimants' rights.[138] In other words, the Court of Appeal reframed the target as an action affecting the claimants by *allowing* dangerous levels of GHG, instead of seeing it as a protective measure aimed at preventing the worsening of climate change by *reducing* emissions. Unfortunately, the Court of Appeal did not decide the merits of the case, thus leaving many questions open with respect to the legal consequences of its framing of the case.

Notwithstanding the controversy with respect to the adequate 'analytical lens' through which the case should be studied, the decisions in *Mathur* further underscore the limitations of negative rights to frame disputes around the suitability of legislative climate targets. Indeed, both courts emphasized that negative rights cannot anchor claims concerning the adequacy of the government target, as such a claim would require a 'freestanding positive obligation' of the state to protect the claimants from the negative consequences of climate change.[139]

In that sense, *Mathur* reflects the distinction between negative and positive rights, highlighting its significance for rights-based adjudication in climate disputes. It shows that in jurisdictions that do not allow for claims grounded in positive rights, constitutional cases against government targets are decided on narrow grounds - i.e. whether the target directly affects the

[137] *Mathur v. Ontario, 2023 ONSC 2316* (n 32) para 134.
[138] *Mathur v. Ontario, 2024 ONCA 762* (n 33) para 62.
[139] *Mathur v. Ontario, 2023 ONSC 2316* (n 32) para 132; *Mathur v. Ontario, 2024 ONCA 762* (n 33) para 41.

claimants - leaving other grounds out of consideration - e.g. whether the target is *sufficient* or *adequate* to protect the claimants from climate-related harm.

4. Positive Rights and States Duties of Protection

In many jurisdictions, positive rights impose duties of protection on the state in addition to the traditional duties of non-interference stemming from negative rights,[140] meaning that states have obligations to protect constitutional rights against interferences from third parties.[141] In the context of climate change, multiple constitutional cases have studied potential violations of positive rights due to states' insufficient or inadequate action to protect citizens from the risks of harm posed by climate change.

Unlike climate cases framed around negative rights, the judicial analysis in cases grounded in positive rights does not rely so heavily on the identification of an impugned state conduct to which the impairment of rights can be attributed. Instead, positive rights adjudication requires the identification of a risk of harm whose mitigation triggers the state duties of protection, as well as an assessment of existing measures addressing such risks. In that sense, a violation of positive rights will typically take place when no measures whatsoever have been adopted,[142] or when the adopted measures are deemed insufficient to protect citizens from the risk in question.[143]

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[140] Barak (n 9) 422–5.
[141] Alexy (n 8) 4.
[142] On the judicial review of legislative omissions, see Barak (n 9) 429–34.
[143] As will be discussed in this section, the specific standard employed to ascertain a violation of positive rights may vary across jurisdictions. For example, the German Constitutional Court will declare a violation of positive rights 'if no precautionary measures whatsoever have been taken, or if the adopted provisions and measures prove to be manifestly unsuitable or completely inadequate for achieving the required protection goal, or if the provisions and measures fall significantly short of the protection goal'. *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 152. On the other hand, the

In constitutional climate cases, the interpretation of positive rights faces some difficulties stemming from the legal nature of climate change. These difficulties arise in relation to both elements of the prototypical analysis of positive rights, namely the identification of risks of harm to constitutional rights, and the judicial review of existing climate legislation.[144] In this section, I will discuss three climate cases concerning positive rights in Norway,[145] Germany,[146] and South Korea.[147] These cases reveal different ways of framing positive obligations to protect individuals from climate impacts. Furthermore, they shed light on the complexities involved in the determination of when positive rights are violated due to state's inaction or insufficient action with respect to climate change.

a) Positive rights vis-à-vis oil production in Norway

In December 2020, the Norwegian Supreme Court decided an action of judicial review against the government's decision to award oil production licenses in Norway's continental shelf.[148] The plaintiffs argued that the licenses amounted to a violation of their constitutional rights to life (art. 93), to private and family life (art. 102), and to a healthy environment (art. 112).[149] Following the

Korean Constitutional Court, through the so-called 'principle of prohibition of underprotection', will declare violations of positive rights when the adopted measures lack the minimum characteristics necessary to protect the rights of claimants given the nature of the risk in question. *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6) 34.

[144] According to Alexy, this kind of discretion is peculiar to positive rights, as it reflects their alternative or disjunctive structure. See Alexy (n 8) 16. As has been suggested by Barak, the discretion granted to the legislator in relation to its fulfilment of duties of protection is typically wide, heightening the weight of judicial deference to the legislator's judgments in this regard. See Barak (n 9) 431–2.

[145] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34).

[146] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6).

[147] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6).

[148] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34). A detailed analysis of the judgment can be found in Hellner and Epstein (n 90) 212–6.

[149] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34) para 3.

structure of the ruling, I will discuss the court's findings in relation to art. 112 before exploring the application of arts. 93 and 102 of the Constitution in this case.

i) The 'Right' to a healthy environment

Art. 112 of the Norwegian Constitution enshrines the right of every person 'to an environment that is conducive to health and to a natural environment whose productivity and diversity are maintained.'[150] In the case at hand, the plaintiffs argued that this provision conferred rights on individuals against actions with a detrimental impact on the natural environment.[151] Yet, after considering the wording and history of the provision, the Supreme Court concluded that art. 112 was to be interpreted as a 'safety valve',[152] only employed by courts to squash legislation when it amounts to a gross neglect of the state's duties to protect the environment.

Furthermore, the court raised three interpretation issues that were relevant for the application of this provision in the context of decisions concerning GHG emissions.[153] First, the court found that art. 112 did include the protection of the climate as part of its scope in relation to the environment.[154] Second, the court argued that, in relation to decisions concerning GHG emissions, the assessment of constitutional validity could not consider the decision in isolation, but as part of an overall policy response of the state. Yet, this could not be understood as allowing plaintiffs to challenge entire policy directions by contesting the validity of individual measures.[155]

[150] ibid 86.
[151] ibid 22.
[152] ibid 142.
[153] ibid 146.
[154] ibid 147.
[155] ibid 148.

A third issue concerned the potential effects of GHG emissions outside of Norway. This was a relevant consideration in the case, given that the vast majority of emissions stemming from oil production take place during its combustion (around 95%), which in the case of Norwegian oil typically takes place abroad.[156] The court concluded that art. 112 could be applied in relation to emissions taking place abroad but over which the Norwegian authorities have influence. This meant that claimants could challenge government polluting activities which led to emissions abroad, but which caused harm in Norway.[157] With these interpretative clarifications in mind, the Supreme Court proceeded to assess the validity of the oil production licenses under art. 112 of the Constitution.

The court concluded that the government had not violated art. 112, given that Norway had specific climate measures and targets for the reduction of *domestic* GHG emissions in place.[158] Furthermore, the court rejected any consideration of the GHG emissions generated from the combustion of Norwegian petroleum after export, arguing that the state is only responsible for domestic emissions under international agreements.[159] Finally, the court adduced that potential emissions from the oil licenses would not occur 'for a long time yet'.[160] Overall, the court concluded that the state had not incurred in serious negligence under art. 112 subsection 3, so as to merit the invalidation of the petroleum licenses.

ii) The rights to life, and to private and family life

[156] ibid 149.
[157] ibid.
[158] ibid 163.
[159] ibid 159.
[160] ibid 163.

The court further considered the validity of the oil production licenses in light of the claimants' rights to life and to private family life enshrined in articles 93 and 102 of the Norwegian Constitution respectively.[161] With regards to the right to life, the court affirmed that governments have a positive duty to prevent risks of 'real and immediate' losses of life from hazardous activities, following established case law of the European Court of Human Rights.[162] Nevertheless, the amount of GHG emissions that would result from the oil licenses was 'uncertain', and their potential impact on the climate would only be 'discernible in the more distant future'.[163] The court concluded that although climate change 'may lead to loss of human lives' in Norway,[164] the oil licenses did not give rise to 'real and immediate' risk of loss of life for Norwegian citizens.[165] The court thus found no violation of the right to life of the claimants.[166]

Similarly, the court found no violation of the right to private and family life in this case.[167] In reaching this conclusion, the court considered the scope granted to this right in cases concerning environmental harm in the jurisprudence of the European Court of Human Rights. The court argued that there was no 'direct and immediate' link between the effects of potential future GHG emissions stemming from the oil licenses and the applicants' home or family life.[168] In other words, the court found no risk of climate harm that engaged the rights of the claimants and triggered the state obligation to mitigate it.

[161] The court conducted a unified analysis of these constitutional rights and their equivalents under articles 2 and 8 of the European Convention on Human Rights. See ibid 164–78.
[162] ibid 166.
[163] ibid 168.
[164] ibid 167.
[165] ibid 168.
[166] ibid.
[167] ibid 176.
[168] ibid 170–1.

iii) The notion of risk to constitutional rights in the context of climate change

The Norwegian case shows that the risks posed by climate change can be elusive in the context of adjudication, especially when courts are looking for a 'real and immediate' risk as in this case. This results from the legal nature of climate change, particularly its spatiality and temporality, which adds layers of complexity to the analysis of the legal consequences of climate change that standards of adjudication often fail to capture.

On the one hand, the spatiality of climate change creates a sense of remoteness and disconnection that challenges the mere visibility of the risks posed by it.[169] This is because the operation of GHG emissions in space transcends the territorial boundaries of the operation of the law. In the case at hand, for example, the court faced difficulties to determine whether the potential emissions from combustion of Norwegian oil abroad - accounting for 95 percent of emissions from petroleum production -[170] should be considered in the determination of whether the oil licenses violated the rights of the claimants. This was an important consideration, given that emissions generated abroad from commodities produced domestically could have a foreseeable impact on Norwegian citizens. In that sense, capturing the effects of such emissions would require the court to provisionally look beyond its jurisdiction - to consider the GHG emissions from combustion abroad - and then project the impacts that emissions abroad would have inside Norway. Such analysis, although logically sound to understand the full effects of the oil licenses on the rights of the claimants, seemed to contradict the Supreme Court's assumptions

[169] Dale Jamieson, 'Ethics, Public Policy, and Global Warming' (1992) 17 Science, Technology, & Human Values 139, 149.
[170] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34) para 155.

concerning the responsibility of states within national borders - assumptions that traditionally leave aside what occurs beyond borders.

On the other hand, the temporality of climate change seems to have played an important role in the Supreme Court's evaluation of the risks of harm to constitutional rights. Indeed, the court stated that the negative consequences from potential emissions derived from the disputed oil licenses would not only be 'discernible in the more distant future',[171] and repeatedly underscored the lack of an *immediate*[172] risk to support its decision. This suggests that the court deemed any risk of harm as beyond the temporal scope of constitutional adjudication. In other words, the risks posed by climate change and potentially exacerbated by the petroleum licenses were out of reach for the traditional standard of adjudication employed in rights-based cases.

Overall, this case constitutes another example of how the legal nature of climate change is often not fully captured by existing doctrines in constitutional adjudication. For example, although the court recognised that emissions generated abroad could still affect Norway's climate, it declined to consider them on the basis that each state bears responsibility for emissions originating within its own territory. Even though the court's argument reflects a principle of territorial sovereignty, it simply fails to capture the measurable negative consequences that emissions from combustion abroad have on Norwegian citizens. Thus, the heuristics employed by the court did not accommodate the complexities associated with the transboundary impacts of GHG emissions, whose consideration was required in this case.

[171] ibid 168.
[172] ibid 166–71.

The temporality of GHG emissions was also not fully captured by the Supreme Court in this case. Although the *physical* effects of emissions from these oil licenses may only become evident in the distant future, the *legal* implications are immediate—once emissions occur, their effects are *irreversible*.[173] This means that, although remote in time, the impacts from a given amount of GHG emissions may be considered at the present time, as they can only be corrected by preventing the source of pollution in the first place. As noted in chapters 1 and 4, this is something that constitutional courts have acknowledged repeatedly as a means of bridging the gap between the review of state actions in the present and the impacts of such decisions in the future. The Norwegian Supreme Court did not consider the irreversibility of emissions in its assessment of the impacts of the oil licenses for the rights of the claimants - even though it had mentioned it in its characterisation of the 'climate challenges' at the beginning of the judgment.[174]

The Norwegian Supreme Court's judgment illustrates a lack of both epistemic and doctrinal humility in its approach to the risks posed by climate change. Epistemic humility would have required the court to acknowledge the transboundary nature of emissions. Instead, the court adhered rigidly to traditional territorial assumptions, thereby overlooking the measurable and foreseeable harm that such emissions could cause to Norwegian citizens. Similarly, doctrinal humility would have encouraged the court to adapt its standards of adjudication to reflect the temporal and irreversible nature of climate harms, rather than dismissing them as falling outside

[173] As described above, this was one of the arguments provided by the German Constitutional Court to consider the *intertemporal effects* of the emission allowances set out by the Climate Protection Act on future freedom. See *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 185–7.
[174] *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 34) para 51.

the scope of judicial review focused on 'immediate' risks. By failing to account for the transboundary and future-oriented nature of GHG emissions, the court's reasoning constrained the potential of constitutional rights adjudication to address the systemic and far-reaching impacts of climate change.

b) Positive rights in Neubauer

As anticipated above, the plaintiffs' main claim in *Neubauer* was that the legislator had failed to to protect the claimants' rights from climate change by adopting sufficient measures to reduce GHG emissions. Consequently, the German Constitutional Court reviewed the case through a positive rights lens, in addition to the analysis of negative rights discussed above. In particular, the court studied a potential violation of the state's duties of protection with respect to the right to life and physical integrity (art. 2(2))[175] and the right to property (art. 14(1)).[176]

i) Duties of protection in relation to the right to life and physical integrity

The court began by noting that, in addition to affording protection against state interferences - in its negative dimension - the right to life and physical integrity imposes a duty on the state to actively protect individuals against unlawful interferences by others.[177] In the context of climate change, this means that the state is obliged to mitigate climate risks through measures limiting anthropogenic GHG emissions, and to implement adaptation measures to alleviate climate

[175] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) paras 143–70.
[176] ibid 171–2.
[177] ibid 144–5, 148.

impacts that are no longer preventable.[178] In line with the distinction set out in section 2 above, the court distinguished between negative and positive rights in order to lay out the standard of review it would employ in the case at hand. According to the court, the essential difference between positive and negative rights is that, while negative rights prohibit certain forms of state conduct, duties of protection stemming from positive rights are essentially unspecified, meaning that it is up to the legislator to decide how the risks are to be dealt with.[179] For this purpose, the legislator enjoys a margin of appreciation that limits the intensity of judicial review. Nevertheless, the court made it clear that it was within its authority to declare violations of the duties of protection in the following scenarios: i) if no measures have been taken, ii) if the measures are 'manifestly unsuitable or completely inadequate' to protect the claimants' rights, or iii) if the measures 'fall significantly short of the protection goal'.[180]

The court considered the measures adopted by the German legislator through the KSG against the scenarios described above and concluded that there was no violation of the duties of protection arising from the right to life and physical integrity.[181] The court provided three reasons to support its conclusion. Firstly, according to the court, a *manifestly unsuitable* strategy would be one that does not envisage a transition towards carbon neutrality.[182] This is because, as things stand, the only way to halt climate change is by stopping GHG emissions at some point.[183] Given that the KSG contained a commitment towards carbon neutrality by 2050 and a series of

[178] ibid 149–50.
[179] ibid 152.
[180] ibid.
[181] ibid 153.
[182] ibid 155.
[183] ibid.

measures aimed at achieving it, the court concluded that the KSG was not *manifestly unsuitable* to protect the rights of the claimants from climate change.[184]

Secondly, the court argued that a *completely inadequate* strategy would be one that 'allow climate change to simply run its course', thus only resorting to adaptation measures to protect the claimants from climate change.[185] Conversely, the KSG was primarily aimed at stopping climate change by reaching net-zero and was thus deemed adequate by the court.[186]

Thirdly, it was not evident that the measures adopted thus far fell significantly short of the protection of the claimants,[187] as the state was abiding by the long-term temperature goals of the Paris Agreement.[188] Moreover, the negative consequences of climate change could be further alleviated in the future through adaptation measures that supplement its mitigation efforts,[189] or by future adjustments of existing targets.[190] In sum, the court found no violation of duties of protection arising from the right to life and physical integrity in this case.

ii) Duties of protection in relation to the right to property

The court utilised the same standard of review to decide on the potential violation of the duties of protection arising from the right to property as the one employed with respect to the right to life and physical integrity.[191] That is to say, the court examined whether the measures adopted by

[184] ibid 155–6.
[185] ibid 157.
[186] ibid.
[187] ibid 158.
[188] ibid 159–65.
[189] ibid 166–8.
[190] ibid 169–70.
[191] ibid 171–2.

the legislator to alleviate the risk of climate-related harm were manifestly unsuitable, completely inadequate, or fell significantly short of the protection goal.[192]

The court recognised that climate change can cause damage to property, such as agricultural land and real estate.[193] Nevertheless, following a similar rationale to that provided in relation to the right to life and physical integrity, the court found that there was no 'foreseeable' risk of affectation to property located in Germany that would not be kept within constitutional limits through the protective measures of the KSG.[194] Thus, the court found no violation of the right to property.

iii) The complex task of reviewing climate legislation

The fact that the German Constitutional Court interpreted both negative and positive rights in *Neubauer* allows us to clearly identify significant differences between the enforcement of either type of rights in constitutional climate cases. Perhaps the most striking example of such differences concerns the standard of review employed in each case, that is to say, the method employed to evaluate whether a constitutional right has been violated. As described above, the standard of review in the case of negative rights was governed by the logic of interference and justification - operationalised by the principle of proportionality.[195] Conversely, the enforcement of positive rights consisted in the identification of a risk of harm - in this case stemming from climate change - and a qualitative assessment of existing measures to prevent such harm

[192] ibid 172.
[193] ibid 171.
[194] ibid 172.
[195] ibid 192–4.

following a series of heuristics - whether the measures are manifestly unsuitable, completely inadequate, or fall significantly short of the protection goal.

Neubauer also illustrates the ways in which the legal nature of climate change adds complexity to different elements of the standards of review of both positive and negative rights. For example, the temporality of climate change posed difficulties for the delimitation of an *interference* with negative rights, which the court sorted by developing a novel standard of adjudication - the *advanced interference-like effect* -[196] that integrated such temporality into an intertemporal understanding of constitutional rights.

The interpretation of positive rights in the context of climate change also faces some difficulties concerning the identification of a risk of harm to constitutional rights and the judicial review of climate legislation. In relation to the former, the court in *Neubauer* swiftly established that climate change posed considerable risks to constitutional rights, thus giving rise to a state obligation to protect its citizens from it, regardless of its actual contribution to global warming.[197] In this sense, the identification of climate change as a source of sufficient risk to constitutional rights was not contentious in *Neubauer*. Yet, it was a key element of contention in the Norwegian case above.

A more complex analysis in *Neubauer* concerned the judicial review of existing legislation to determine whether it was sufficient to discharge the duties of protection of the state vis-à-vis climate change. Such an assessment required a delimitation of the scope of discretion of the

[196] ibid 183–4.
[197] ibid 147–9.

legislator and a series of minimum elements necessary to protect the rights of the claimants from climate change. Even though the court deemed the existing measures sufficient in this case, it is worth noting that the court provided some indications of what is considered necessary to protect the rights of citizens from climate change. For example, the court affirmed that pursuing carbon neutrality is required, as reaching a point of net-zero emissions is the only way to stop global warming.[198] In consequence, a climate strategy that simply sought to alleviate the impacts of climate change through adaptation measures alone would be deemed incompatible with the state duties of protection under the Constitution.[199] Similarly, the court found that the state is obliged to plan its climate action around the temperature goals of the Paris Agreement,[200] meaning that any strategy envisaging a global warming scenario of more than 2ºC would be considered incompatible with the protection of human life and health from climate change.[201]

The identification of a series of key elements necessary for a constitutionally compatible climate plan in *Neubauer* suggests that constitutional courts are narrowing down the leeway of the political branches in the face of climate change. Drawing on scientific reports and international consensus, courts are defining a series of positive actions that states must take to protect constitutional rights from climate change. A case in South Korea constitutes another example in this direction.

c) Positive obligations in the face of climate change in South Korea

[198] ibid 155.
[199] ibid 157.
[200] ibid 163.
[201] Yet, the court rejected the contention of the claimants to the effect that limiting global warming to 1.5ºC was necessary to protect their rights. See ibid 158–63.

In August 2024, the Korean Constitutional Court decided a series of constitutional complaints filed by a group of young individuals against, among others,[202] the Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis of 2021.[203] The claimants argued that the GHG emissions reduction target set out in art. 8(1) (35% by 2030 under 2018 levels) and later increased by means of a presidential decree (to 40% under the same reference levels)[204] were insufficient to discharge the state's obligation to the protect their rights from the threat of climate change. In particular, the claimants grounded their case in a violation of their rights to life (art. 34), to the pursuit of happiness (art. 10), and to a healthy and pleasant environment (art. 35) as protected by the Korean Constitution.[205] Even though the plaintiffs grounded their claim in the violation of multiple rights, the court argued that the constitutional right most closely related to the risks posed by climate change was the right to a healthy environment. Hence, it decided to subsume potential affectations of other rights under a single analysis of the right to a healthy environment.[206]

The court started its analysis by affirming that the right to a healthy environment comprises both a right against interferences from the state as well as a right to demand positive

[202] The judgment of the court decided three different complaints that were merged throughout the proceedings. These complaints challenged different norms, some of which had been revised in the court of the lawsuit. Therefore, in this section I will discuss the court's reasoning with respect to the Framework Act of 2021, which occupies the lion's share of the judgment. More information on this case can be found in 'Do-Hyun Kim et al. v. South Korea' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/kim-yujin-et-al-v-south-korea/> accessed 20 September 2024.

[203] Act No. 18469, September 24, 2021. Available at: <https://elaw.klri.re.kr/eng_mobile/viewer.do?hseq=59958&type=part&key=39#:~:text=The%20purpose%20of%20this%20Act,and%20to%20foster%2C%20promote%2C%20and> accessed 20 September 2024

[204] See Enforcement Decree of the Framework Act on Carbon Neutrality and Green Growth for coping with Climate Crisis. Presidential Decree No. 32557, Mar. 25, 2022.

[205] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6) 1412–3.

[206] ibid 1417–8.

environmental measures from the state, even when violations of rights are caused by third parties.[207] Given the risks that climate change poses on the environment, the state has a constitutional duty to adopt protective measures through mitigation and adaptation measures.[208]

According to the court, the determination of the specific protective measures necessary to discharge its constitutional obligation corresponds to the political branches.[209] Yet, the constitutional court will conduct a limited review of existing measures to ensure that the state has adopted at least the minimum appropriate measures to protect fundamental rights, following the 'principle of prohibition of underprotection'.[210] This means that the right to a healthy environment will be violated in the absence of protective legislation, or when the legislation is deemed significantly insufficient.[211]

The court studied a potential violation of the claimants' rights with respect to three elements of the challenged provisions separately: i) The GHG emissions reduction target by 2030, ii) The method for setting GHG emissions reduction targets from 2031 to 2049, iii) The regulations in case of failure to achieve interim targets.

i) The 2030 emissions reduction target

As indicated above, the Framework Act of 2021 (art. 8(1)) included a minimum emissions reduction target of 35% under 2018 levels by 2030, while a posterior presidential decree had

[207] ibid 1418–9. This positive dimension of the fundamental rights in Korea flows from article 10 of the Constitution, which obliges the state to 'confirm and guarantee the fundamental and inviolable human rights of individuals'.
[208] ibid.
[209] ibid 1419.
[210] ibid.
[211] ibid.

raised such target to 40%. The claimants argued that such targets fell significantly short of South Korea's contribution to global GHG emissions, thus failing to reflect the principle of 'common but differentiated responsibilities and respective capabilities' and considerations of equity between countries under the Paris Agreement.[212]

The court argued that, in the absence of international consensus concerning the objective method to define each country's equitable contribution to tackling climate change under the Paris Agreement, the political branches enjoy discretion to establish domestic targets.[213] Such discretion was particularly necessary given the number of factors to be considered to determine the country's mid-term emissions reduction target, such as the country's industrial development, the speed of technological development, and the feasibility of cross-sectoral mitigation measures.[214] The court suggested that existing emissions reduction target for 2030 should be understood as an intermediate goal in the gradual and continuous pathway towards carbon neutrality by 2050.[215] Thus, the court upheld the validity of the target as a necessary measure to protect the right to a healthy environment from climate change.[216]

ii) The method for setting GHG emissions reduction targets from 2031 to 2049

Art. 8 paragraph 4 of the 2021 Framework Act stipulates that the government shall modify or reset the mid- to long-term emissions reduction targets and annual targets every five years according to a series of factors enlisted in paragraph 5. Yet, it does not provide any quantitative

[212] ibid 1424.
[213] ibid 1425–6.
[214] ibid 1426.
[215] ibid 1427.
[216] ibid.

indication for the emissions reduction pathway between the mid-term target described above and the point of carbon neutrality by 2050 - i.e. between 2031 and 2049.[217] The plaintiffs claimed that the absence of a clear trajectory until the point of net-zero emissions risks transferring the burden of climate mitigation onto the future, thus violating their rights.

The court found that the absence of quantitative criteria for setting the specific reduction targets between 2031 and 2049 did not secure a gradual and continuous reduction of GHG emissions until the point of carbon neutrality.[218] Instead, it risked transferring an excessive burden to the future, as governments will be likely to prioritise short-term considerations in setting annual reduction targets every five years. Overall, this could create a vicious cycle in which the burden of mitigation gets postponed onto the future, making it more difficult to achieve the long-term goal of carbon neutrality by 2050.[219] The court concluded that the existing method for setting future emissions reduction targets until the point of carbon neutrality did not meet the minimum threshold necessary to be considered a protective measure, thus violating the rights of the claimants.[220]

The court ordered the legislator to improve the existing legislation before February 28 of 2026, by establishing quantitative emissions reduction targets for the period 2031-2049.[221] In the

[217] ibid.
[218] ibid 1427–8.
[219] ibid 1428–9.
[220] ibid 1429.
[221] ibid 1242–3.

meantime, instead of declaring the unconstitutionality of article 8(1) of the Framework Act, the court ordered its provisional application until the new legislation is enacted.[222]

iii) Regulations in case of failure to achieve interim targets

Finally, the court considered a potential violation of rights stemming from the lack of a formal mechanism to ensure that, in case of failure to achieve emissions reduction targets, the unachieved portion would be added to subsequent targets.[223] In the view of the claimants, a formal mechanism to that end was necessary to ensure that the country's cumulative emissions until the point of net zero do not exceed its fair share under the Paris Agreement.[224]

The court considered the continuous review and implementation mechanisms of the Framework Act, as well as the country's emissions trading system, and concluded that existing procedures were effective to achieve the long-term goals.[225] A formal mechanism to account for unachieved portions of targets was thus not necessary for the court as a minimum protective measure.[226]

The Korean Constitutional Court judgment underscores the importance of humility as a guiding principle in constitutional adjudication of climate cases, aligning closely with the broader argument of this thesis. The court's approach demonstrates epistemic humility by acknowledging the limitations of judicial capacity to define equitable climate responsibilities absent international

[222] ibid.
[223] ibid 1429.
[224] ibid 1430.
[225] ibid 1430–1.
[226] ibid 1431.

consensus. It exercises doctrinal humility by employing the principle of the prohibition of underprotection to assess whether legislative measures meet constitutional thresholds, without overstepping into prescriptive policy-making. Finally, the judgment reflects institutional humility by balancing the need for judicial intervention - evidenced in its order to improve legislation on interim targets - with deference to the legislature's role in devising long-term climate strategies. This measured approach exemplifies how courts can navigate the legal complexities of climate change while fostering collaborative governance and principled action.

d) Narrowing state discretion to address climate change

The constitutional judgments discussed in this section highlight the intricate task of balancing the discretion of political branches in addressing climate change with the constitutional mandate to protect fundamental rights. Climate change's polycentricity, temporality, and spatiality demand significant legislative leeway, as it requires balancing competing interests, planning long-term strategies, coordinating internationally, and addressing sectoral complexities across agriculture, energy, and more. This underscores the necessity of granting discretion to the legislator to determine appropriate measures.[227] At the same time, the severe and irreversible impacts of climate change - floods, heatwaves, and rising sea levels - call for rigorous judicial scrutiny to prevent grave risks to constitutional rights. Courts are thus tasked with navigating these competing imperatives: granting sufficient discretion to political branches while ensuring robust protection of rights.

[227] Alexy (n 8) 15–6.

To achieve this balance, courts have distinguished between the goals of climate action and the means to achieve them. [228] Courts typically insist on clear targets, such as carbon neutrality and intermediate reduction goals, while allowing legislatures discretion in selecting specific policies. This reflects the disjunctive structure of positive rights,[229] mandating protection without prescribing precise methods. In the context of climate change, this has been understood by some courts as implying that tackling global warming is mandatory, although the political branches retain wide discretion with respect to the means through which states pursue climate action.

Notably courts have often broken down the overarching aim of tackling climate change - the goals of climate legislation - into specific elements that are constitutionally imperative to protect positive constitutional rights from it.[230] These include achieving carbon neutrality[231] in line with carbon budgets,[232] and establishing equitable and gradual reduction pathways to prevent burden-shifting to future generations,[233] ensuring accountability through measurable targets.

The European Court of Human Rights recently exemplified this approach to minimum guidelines for states in *Verein Klimaseniorinnen Schweiz and Others v. Switzerland*.[234] This

[228] This distinction partly reflects Alexy's categorisation of legislative discretion with respect to positive rights, which he splits into *means-selecting discretion*, *end-setting discretion*, and *discretion in balancing*. See ibid 15–7.
[229] As stated by the Brazilian Supreme Court, 'there is no legally valid option to simply omitting to combat climate change'. See *ADPF-708 04-07-2022* Roberto Barroso (Supremo Tribunal Federal (Brazilian Supreme Court)) [17].
[230] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 6) 1425–31; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 6) paras 154–8, 171–2.
[231] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 6) 27; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 6) para 155.
[232] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20 Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]* (n 6) para 156.
[233] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409. (Constitutional Court of Korea)* (n 6) 47–9.
[234] *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 6) paras 541–54.

judgment marks the first time the court has interpreted the scope of states' positive obligations under Article 8 of the ECHR - right to private and family life - in relation to the risks posed by climate change. The court found that contracting states to the ECHR need to adopt legislation aimed at halting climate change by reducing their GHG emissions.[235] Moreover, the court drew a clear distinction between a reduced margin of appreciation of states with regard to the setting of goals and objectives to tackle climate change, and a wider margin concerning 'operational choices and policies' to meet such objectives.[236]

The court also deconstructed the states' general obligation to tackle climate change under art. 8 into a list of minimum elements for climate legislation to stay within the reduced margin of appreciation mentioned above. The list of minimum guidelines is worth citing at length:

> 550. When assessing whether a State has remained within its margin of appreciation (see paragraph 543 above), the Court will examine whether the competent domestic authorities, be it at the legislative, executive or judicial level, have had due regard to the need to:
>
> (a) adopt general measures specifying a target timeline for achieving carbon neutrality and the overall remaining carbon budget for the same time frame, or another equivalent method of quantification of future GHG emissions, in line with the overarching goal for national and/or global climate-change mitigation commitments;
>
> (b) set out intermediate GHG emissions reduction targets and pathways (by sector or other relevant methodologies) that are deemed capable, in principle, of meeting the overall national GHG reduction goals within the relevant time frames undertaken in national policies;
>
> (c) provide evidence showing whether they have duly complied, or are in the process of complying, with the relevant GHG reduction targets (see sub- paragraphs (a)-(b) above);
>
> (d) keep the relevant GHG reduction targets updated with due diligence, and based on the best available evidence; and
>
> (e) act in good time and in an appropriate and consistent manner when devising and implementing the relevant legislation and measures.[237]

[235] ibid 546.
[236] ibid 543.
[237] ibid 550.

The elements identified by the court coincide with those established by the constitutional courts of Germany and South Korea above, suggesting that courts are consistently narrowing down the scope of discretion of the state to address climate change through a specification of what a suitable and sufficient climate strategy must contain. Once again, it is worth noting that courts are setting out guidelines of what it means to protect fundamental rights from climate change without prescribing the means through which it should be done. States thus retain significant room for manoeuvre with respect to the exact elements of their climate strategy.

The judicial efforts to delineate the scope of state discretion in addressing climate change underscore the importance of humility as a guiding principle in constitutional adjudication. Epistemic humility compels courts to engage with the complexities of climate governance, acknowledging the scientific, economic, and socio-political uncertainties inherent in tackling climate change. This includes recognising that climate mitigation and adaptation involve multifaceted trade-offs that courts cannot fully resolve but must nonetheless consider in their reasoning.

Doctrinal humility encourages courts to navigate the limits of established frameworks while adapting constitutional standards to the legal nature of climate change. This is evident in how courts distinguish between mandating overarching goals - such as carbon neutrality - and respecting the political branches' discretion to select appropriate means of implementation. By doing so, courts establish principled baselines that ensure rights protection without overstepping into policymaking.

Institutional humility further prompts courts to balance rigorous judicial oversight with respect for the political branches' capacity to address climate change. The judgments discussed above exemplify this approach by setting clear guidelines for minimum state obligations while leaving the choice of means to legislators. This interplay of oversight and consideration for the role of the political branches reflects a humble judicial posture, one that seeks to uphold constitutional frameworks without undermining effective climate governance.

5. Rights as Ancillary Tools to Inform other Constitutional Doctrines

So far in this chapter, I have discussed the differences between negative and positive rights in terms of their application in constitutional climate cases. I have illustrated the standards of review employed by constitutional courts with respect to each type of right, as well as the ways in which the legal nature of climate change adds layers of complexities to the legal debates concerning each of them. Yet, the constitutional climate cases studied in this research reveal a third use of rights, not as direct grounds for the judicial review of climate action, but as ancillary elements that guide the interpretation of other constitutional norms.[238] In this fashion, rights primarily accentuate the gravity of climate change, thus underscoring the need for stricter scrutiny of climate-related actions of the political branches.[239] Two constitutional climate cases illustrate this third use of rights.

[238] This use of rights in climate cases was also identified in Peel and Osofsky (n 1) 41, 55, 58–60.

[239] A similar use of rights has been suggested by Warnock and Preston in the context of statutory interpretation in common law systems. Specifically, the authors suggest that fundamental rights should be used in conjunction with the principle of legality to interpret legislation in a 'climate-protective way'. See Ceri Warnock and Brian J Preston, 'Climate Change, Fundamental Rights, and Statutory Interpretation' (2023) 35 Journal of Environmental Law 47, 47.

a) Constitutional rights and the separation powers in Brazil

In 2022, the Brazilian Supreme Court decided a 'direct action of unconstitutionality for omission' (ADPF) filed by four political parties against the decision of the Bolsonaro government to make the National Fund on Climate Change inoperative. The plaintiffs argued that the decision to withhold the resources of fund constituted a violation of the constitutional obligations of the state to protect the environment (art. 225) and to abide by human rights treaties (art. 5, para. 2).[240]

In its judgment, the Supreme Court asserted that climate change is a constitutional matter,[241] meaning that it is imperative for the executive to tackle climate change and not simply a question of political convenience.[242] The court interpreted the constitutional right to a healthy environment in conjunction with international treaties on climate change and the principle of separation of powers, and concluded that the executive has a constitutional duty to give operation to the National Climate Fund and to allocate those resources to pursue climate action.[243] The court thus declared an unconstitutional omission on the side of the executive and ordered it to fully allocate the resources of the fund and to avoid the contingency of revenues forming part of it.[244]

The Brazilian case illustrates the indirect use of constitutional rights, in conjunction of other constitutional norms, to review the conduct of the political branches with respect to climate change. In this particular case, the risks posed by climate change to constitutional rights gave it

[240] *ADPF-708. 04-07-2022.* (n 229) para 1.
[241] ibid 16.
[242] ibid 17.
[243] ibid 27–8.
[244] ibid 36.

constitutional relevance, meaning that the climate-related actions of the state were subject to higher scrutiny. In other words, constitutional rights informed the scope and intensity of judicial review of, in this case, the government's management of the Climate Fund.

b) The modification of the Ethanol fuel content in Mexico

In 2019, the Mexican Supreme Court decided an action of judicial review against the decision of the Mexican Energy Regulatory Commission to increase the maximum ethanol percentage in gasoline. The plaintiff claimed that such decision had been made unilaterally by the commission, thus in contradiction with existing legislation and posing risks to constitutional rights by increasing GHG emissions in the country.[245]

The Supreme Court squashed the norms adopted by the regulatory commission. In its reasoning, the court found that the percentage of ethanol in gasoline could have detrimental effects on the protection of the environment and the fight against climate change.[246] In particular, the higher volume of ethanol in gasoline would lead to higher emissions of tropospheric ozone, one of the greenhouse gases with the highest contribution to climate change.[247] The court argued that Mexico's international commitments to tackle climate change should have been considered by the commission and balanced against the economic considerations behind the challenged regulation.[248] Given that the regulatory commission had adopted such norms unilaterally and without considering their potential impact on Mexico's fight against climate change, the court

[245] *Amparo en Revisión 610/2019* Alberto Pérez Dayán (Suprema Corte de Justicia de la Nación (Mexican Supreme Court)) 17.
[246] ibid 61.
[247] ibid 76.
[248] ibid 81.

found the norms unconstitutional and ordered the commission to adopt new regulations within 180 days of the judgment.[249]

The Mexican case further exemplifies the use of constitutional rights as arguments in favour of more rigorous judicial scrutiny of climate-related actions of the state. In this case, the Supreme Court assessed the challenged regulations in light of its potential impacts on Mexico's efforts to tackle climate change. In that sense, constitutional rights served as a bridge between the regulations at hand and Mexico's international treaties with respect to climate change. Together, these elements led the court to conclude that the unilateral amendment of the regulations grounded in purely economic concerns was unconstitutional, given the detrimental effects that such norms could have on the environment.

The cases discussed in this section are useful to understand instances in which constitutional rights play a secondary role in constitutional climate cases. Given that rights are not employed as primary grounds of action in these last set of cases, the extent to which the legal nature of climate change adds layers of complexity to the resolution of such cases is even more contextual than in the cases explored in sections 3 and 4. That is to say, the standards of review in cases where rights are used as ancillary tools of interpretation are less structured than in cases where rights serve as primary grounds of action - either as positive or negative rights. Nevertheless, in these cases, constitutional rights allow climate change to be pigeonholed as a subject of constitutional significance. This means that climate change can be considered as a problem that should guide the exercise of public power due to its potential impacts for

[249] ibid 82–87.

constitutional rights. This leads constitutional courts to apply more intense scrutiny to state conduct, implying that the political branches should align their actions with the pursuit of climate mitigation, as suggested by the cases from Mexico and Brazil.

6. Conclusion

This chapter has explored the intricate role of constitutional rights in adjudicating climate cases, emphasising the challenges posed by the legal nature of climate change. The analysis reveals that the adjudication of climate-related rights claims is far from uniform, with courts around the world adopting distinct approaches to addressing positive and negative rights in this context. While some courts have limited their review to ensuring state action does not interfere with constitutional rights, others have ventured into specifying the protective obligations that states must fulfil to mitigate the risks posed by climate change.

The chapter underscores the importance of differentiating between negative and positive rights, as this distinction shapes judicial reasoning, standards of review, and the scope of state duties. Negative rights claims focus primarily on preventing state interference with rights, but they often face difficulties related to causation and attribution in the climate context. The limitations of this approach are evident in cases like Mathur, where claims seeking to challenge the sufficiency of climate action found little traction under a negative rights framework of rights against interferences.[250]

[250] Alexy (n 12) 166–8.

Conversely, the adjudication of positive rights invites courts to assess whether states are fulfilling their duty to protect citizens from the risks of climate change. This often involves evaluating the sufficiency or adequacy of legislative measures, as illustrated by judgments from Germany and South Korea. These judgments suggests that some constitutional courts have started to set clear boundaries on state discretion with respect to climate change by identifying a series of essential elements that climate legislation should contain in order to protect constitutional rights from climate change. Such constitutionally mandated elements include carbon neutrality goals and measures to distribute the burden of mitigation equitably over time.[251] However, these judgments also reflect a recognition of the need for legislative discretion in addressing the complexities of climate change.

Humility emerges as a guiding principle in the adjudication of rights-based climate cases. In a nutshell, epistemic humility encourages courts to acknowledge the limits of their knowledge and engage with scientific, economic, and social uncertainties inherent in climate governance. Doctrinal humility compels courts to adapt existing legal frameworks to the novel challenges of climate change, as seen in the development of intertemporal rights in *Neubauer*.[252] Institutional humility prompts courts to balance rigorous judicial oversight with respect for the role of the political branches, ensuring that their interventions support rather than undermine effective climate governance.

[251] *Verein KlimaSeniorinnen Schweiz and Others v. Switzerland (application no. 53600/20), (ECHR, 09 April 2024)* (n 6) para 550.
[252] *BvR 2656/18/1*, *BvR 78/20/1*, *BvR 96/20/1*, *BvR 288/20* (n 6) paras 122, 183.

Chapter 6. Constitutional Remedies in Climate Cases

1. Introduction

The last theme of constitutional adjudication explored in the context of climate cases in this dissertation concerns remedies, understood as the measures by which constitutional courts respond to infringements of constitutional norms.[1] Drawing on existing cases, this chapter will show that when constitutional courts reach a conclusion that constitutional norms have been violated in a climate case, the legal nature of climate change complicates the choice of appropriate remedies to redress such infringements, for two main reasons.[2]

First, I argue that the legal nature of climate change undermines the effectiveness of judicial remedies in constitutional adjudication, particularly in rights-based cases. The magnitude and irreversible character of climate change makes it impossible for courts to redress existing climate-related injuries, even by ordering an immediate halt to all polluting activities in a country.[3] In this sense, the idea of eliminating the source of the harm, even for a small number of individuals, is simply out of bounds in climate cases. At the same time, the polycentricity, temporality, and spatiality of climate change significantly restrict court's ability to even prevent

[1] Kent Roach, *Remedies for Human Rights Violations: A Two-Track Approach to Supra-National and National Law* (Cambridge University Press 2021) 11–2.

[2] This issue has been recently explored separately by Keller et al in the context of the European Court of Human Rights, and by Roach with regards to climate cases against governments before domestic and supranational courts. See Helen Keller, Corina Heri and Réka Piskóty, 'Something Ventured, Nothing Gained?—Remedies before the ECtHR and Their Potential for Climate Change Cases' (2022) 22 Human Rights Law Review 1; Kent Roach, 'Judicial Remedies for Climate Change' (2021) 17 Journal of Law & Equality 105.

[3] *Juliana v United States, 947 F3d 1159 (9th Cir 2020)* 1171; César Rodríguez-Garavito, 'Litigating the Climate Emergency: The Global Rise of Human Rights–Based Litigation for Climate Action' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 37–8.

the further worsening of climate conditions and its resulting affectations of individual rights.[4] Doing so requires comprehensive long-term plans that are beyond the institutional capacity of constitutional courts to develop and implement.

Second, the polycentricity and cross-sectoral nature of climate change heightens the risks of unintended consequences from prescriptive judicial remedies in climate cases. Addressing climate change presents multiple trade-offs that undermine courts' ability to spur political action without compromising other legitimate constitutional interests - e.g. energy security, social equity, economic growth.[5] Although the risks of misplaced judicial interventions are also present in other domains,[6] they are particularly significant in climate cases due to the interconnectedness and scale of climate change. Courts are bound to reflect this 'uncomfortable reality'[7] in their remedial strategies, otherwise potentially adopting remedies that are purely symbolic and lack practical impact, as suggested by the existing remedial record analysed in section 2.

In line with this thesis' approach to humility, I argue that the legal nature of climate change calls for a balanced approach to remedies, emphasizing remedial humility and limiting the use of prescriptive remedies to pursue long-term climate action without compromising other legitimate constitutional goals. This means that courts may establish the contours and goals of legitimate

[4] *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 3) 1170.
[5] Philip Barrett and others, 'Modeling the U.S. Climate Agenda: Macro-Climate Trade-Offs and Considerations' (2021) 2021 IMF Working Papers 1; Cristina Peñasco, Laura Díaz Anadón and Elena Verdolini, 'Systematic Review of the Outcomes and Trade-Offs of Ten Types of Decarbonization Policy Instruments' (2021) 11 Nature Climate Change 257; Jing-Yu Liu and others, 'Identifying Trade-Offs and Co-Benefits of Climate Policies in China to Align Policies with SDGs and Achieve the 2 °C Goal' (2019) 14 Environmental Research Letters 1.
[6] Rosalind Dixon, *Responsive Judicial Review: Democracy and Dysfunction in the Modern Age* (Oxford University Press 2023) ch 6.
[7] Mike Hulme, *Why We Disagree about Climate Change: Understanding Controversy, Inaction and Opportunity* (Cambridge University Press 2009) 332.

climate action without determining the means to address it. At the same time, courts should avoid piecemeal orders focused on specific sources of GHG emissions or detailed mandates that could create reverse burdens of inertia[8], potentially hindering long-term climate action.

A clarificatory remark is necessary at this point. Remedies are different from the themes explored in chapters 2-5 because they are typically given less consideration in judicial reasoning. Remedies are more influenced by considerations of practicality and pragmatism, as they are focused on providing effective solutions rather than meeting abstract legal concepts - like justiciability or standing.[9] The inherent instrumental value of remedies[10] may seem at odds with the intent of this dissertation to provide an internal account[11] of constitutional adjudication with respect to climate change, instead of an external, instrumental account that views adjudication primarily as a tool to pursue climate ambition and government accountability.[12]

[8] These risks are discussed in detail in Dixon (n 6) 181–203.
[9] Richard H Fallon Jr, 'Constitutional Remedies: In One Era and out the Other' (2023) 136 Harvard Law Review 1300, 1301; Roach, *Remedies for Human Rights Violations: A Two-Track Approach to Supra-National and National Law* (n 1) 2; Daryl J Levinson, 'Rights Essentialism and Remedial Equilibration' (1999) 99 Columbia Law Review 857, 857–8.
[10] Levinson (n 9) 858.
[11] Terry Hutchinson and Nigel Duncan, 'Defining and Describing What We Do: Doctrinal Legal Research' (2012) 17 Deakin Law Review 83, 114; Christopher McCrudden, 'Legal Research and the Social Sciences' (2006) 122 Law Quarterly Review 632, 633–5.
[12] Examples include, Rodríguez-Garavito (n 3) 15; Jacqueline Peel and Rebekkah Markey-Towler, 'Recipe for Success?: Lessons for Strategic Climate Litigation from the Sharma , Neubauer , and Shell Cases' (2021) 22 German law journal 1484; Joana Setzer and Lisa C Vanhala, 'Climate Change Litigation: A Review of Research on Courts and Litigants in Climate Governance' (2019) 10 WIREs Climate Change e580; Ben Batros and Tessa Khan, 'Thinking Strategically about Climate Litigation' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2023); Navraj Singh Ghaleigh, '"Six Honest Serving-Men": Climate Change Litigation as Legal Mobilization and the Utility of Typologies' (2010) 1 Climate law 31; Kim Bouwer and Joana Setzer, 'Climate Litigation as Climate Activism: What Works?' (2020) <https://www.thebritishacademy.ac.uk/documents/2701/Climate-Litigation-as-Climate-Activism-What-Works_lnBlsWN.pdf> accessed 16 October 2024; Jacqueline Peel and Hari M Osofsky, 'Climate Change Litigation' (2020) 16 Annual Review of Law and Social Science 21.

Nonetheless, my analysis around remedies does not focus primarily or exclusively on the effectiveness of specific remedies to reach 'the most environmentally beneficial outcomes' in terms of regulatory changes, climate resilience, or GHG emissions reductions.[13] It does not identify the most ambitious remedies possible without raising separation of powers concerns or undermining the democratic legitimacy of courts, as has been the trend in legal scholarship so far.[14] Instead, the analysis presented in this chapter assumes that an appropriate judicial remedy is one that upholds the role of constitutional courts[15] in the governance of climate change without compromising the ability of the political branches to develop long-term frameworks to transition towards carbon neutrality. In other words, my analysis balances the practical aspects of remedies with the constraints on courts remedial discretion stemming from their limited institutional capacity and their role within the *trias politica*.

This chapter is structured as follows. Section 2 provides an overview of the remedial record in constitutional climate cases. To do so, it will discuss the wide range of remedies adopted so far, as well as the available data on their practical implementation. Section 3 examines the specific challenges stemming from the legal nature of climate change for the choice of remedies in constitutional adjudication. It will discuss the limited ability of courts to redress climate-related harms in light of the legal nature of climate change, as well as the trade-offs between competing interests present in climate governance. Section 4 provides an account of remedial humility and

[13] As suggested by Peel and Osofsky, this is often what litigators expect of courts. Peel and Osofsky (n 12) 33.
[14] See, for example, Samuel Buckberry Joyce, 'Climate Injunctions: The Power of Courts to Award Structural Relief against Federal Agencies Note' (2023) 42 Stanford Environmental Law Journal 241; Jina J Kim, 'Leave No One behind: Realizing Environmental Justice through Climate Litigation Remedies' (2021) 48 Ecology Law Quarterly 409; Kent Roach (n 2).
[15] Fallon (n 9) 1308.

the limited use of prescriptive remedies consistent with such humility. Finally, section 5 concludes.

2. The Remedial Record in Constitutional Climate Cases

Constitutional courts have followed a wide variety of remedial strategies in climate cases. The following table provides a brief description of the remedies adopted in cases where courts have at least partially found for the claimants, as well as the available data concerning the subsequent implementation of such remedies. The information contained in the table aims to help the reader navigate the formal and practical aspects of remedies in climate cases. In other words, it integrates judicial orders and their material impacts in specific cases.

The exceptional inclusion of a table in this chapter responds to the necessity to incorporate practical information related to the implementation of judicial remedies in constitutional climate cases. While much of this dissertation focuses on judicial reasoning, this additional, more practical, information is critical for understanding the impact of judicial remedies. The table thus provides an integrated perspective of both the legal nature of remedies and their practical outcomes, offering a broader understanding of the challenges associated with the enforcement of judicial orders, one that could not be achieved simply by looking at the text of the judgment in each case.

Table 1. Remedies in constitutional climate cases

Case Name	Court	Judicial orders	Legal nature of remedies	Practical aspects of implementation

Asghar Leghari vs Federation of Pakistan[16]	Lahore High Court (Pakistan)	In its judgment, court ordered the Pakistani government to implement its National Climate Change Policy and action plans, appointing a Climate Change Commission with representatives of the government to oversee compliance.[17] In a subsequent judicial order, the court constituted a Standing Committee on Climate Change to act as a link between the court and the executive.[18]	Structural injunction	In 2018, the Climate Change Commission created in 2015 reported that two thirds of the priority actions it recommended had been implemented. Nevertheless, there is no specific information concerning what those actions entailed. Subsequent scholarly accounts question the practical significance of the court's decision.[19] The plaintiff himself doubts the real impacts of the ruling.[20]
Do-Hyun Kim et al. v. South Korea[21]	Constitutional Court (South Korea)	The court directed the South Korean government to revise its national carbon reduction targets to include specific quantitative goals for 2031-2049. The existing targets would remain valid until	Suspended declaration of invalidity	The government has not implemented the decision yet. The deadline is still pending.

[16] More information on the case can be found in: 'Leghari v. Federation of Pakistan' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/ashgar-leghari-v-federation-of-pakistan/> accessed 18 October 2024.
[17] *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 04/09/2015* (Lahore High Court) [7–8]; *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 14/09/2015* (Lahore High Court) [11–2].
[18] *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 25/01/2018* (Lahore High Court).
[19] R Henry Weaver and Douglas A Kysar, 'Courting Disaster: Climate Change and the Adjudication of Catastrophe' (2017) 93 The Notre Dame Law Review 295, 343–4; Birsha Ohdedar, 'Climate Change Litigation in India and Pakistan: Analyzing Opportunities and Challenges' in Ivano Alogna, Christine Bakker and Jean-Pierre Gauci (eds), *Climate Change Litigation: Global Perspectives* (Brill | Nijhoff 2021) 122; Waqqas Ahmad Mir, 'From Shehla Zia to Asghar Leghari: Pronouncing Unwritten Rights Is More Complex than a Celebratory Tale' in Jolene Lin and Douglas A Kysar (eds), *Climate Change Litigation in the Asia Pacific* (Cambridge University Press 2020); Waqqas Ahmad Mir, 'Pakistan: A Good Story That Can Go Awry If Shortcomings Remain Unacknowledged' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 392–3.
[20] Isabella Kaminski, '"The Exoticised Narrative Takes Away from the Truth": Leghari Nine Years On' (*The Wave*, 3 April 2024) <https://www.the-wave.net/leghari-pakistan-nine-years-on/> accessed 21 October 2024.
[21] More information on the case can be found in: 'Do-Hyun Kim et al. v. South Korea' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/kim-yujin-et-al-v-south-korea/> accessed 20 September 2024.

		new ones are enacted, with a deadline set for no later than February 28, 2026.[22]		
Future Generations v Ministry of Environment[23]	Supreme Court (Colombia)	The court recognized the Colombian Amazon as an entity with autonomous rights and ordered the government to create action plans to halt deforestation and address climate change within 5 months of the judgment. It also required regional and local governments to develop action plans to curb deforestation and promote climate adaptation.[24]	Structural injunction	According to the latest update by the NGO who supported the case, neither the national nor the local governments have implemented the decision.[25] Furthermore, government plans to curb deforestation through law enforcement have been criticised for violating human rights of farmers and local communities.[26]
Mendoza Bohórquez et al v Department of Arauca et al[27]	Constitutional Court (Colombia)	The court ordered local authorities to assess and address the essential needs of displaced individuals, ensuring access to food, water, housing, and medical care. Authorities must conduct a risk assessment and mitigation plan to determine the conditions for the plaintiffs' safe return, or provide alternative housing options. The court also ordered the legislator to develop a legal framework to address forced	Structural Injunction	There is no information available concerning the implementation of the decision.

[22] *2020 Heonma 389, etc 29/08/2024 Public Notice 335, 1409* (Constitutional Court of Korea) 1442–3.

[23] More information on the case can be found in: 'Future Generations v. Ministry of the Environment and Others' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/future-generation-v-ministry-environment-others/> accessed 18 October 2024.

[24] *Sentencia STC4360-2018* [2018] Luis Armando Tolosa Villabona (Corte Suprema de Justicia de Colombia (Colombian Supreme Court of Justice)) 45–50.

[25] Dejusticia, 'Gobierno está incumpliendo las órdenes de la Corte Suprema sobre la protección de la Amazonía colombiana' (*Dejusticia*, 5 April 2019) <https://www.dejusticia.org/gobierno-esta-incumpliendo-las-ordenes-de-la-corte-suprema-sobre-la-proteccion-de-la-amazonia-colombiana/> accessed 22 October 2024; Dejusticia, '¿Qué le hace falta al Gobierno para implementar la sentencia contra el cambio climático y la deforestación?' (*Dejusticia*, 2 December 2020) <https://www.dejusticia.org/que-le-hace-falta-al-gobierno-para-implementar-la-sentencia-contra-el-cambio-climatico-y-la-deforestacion/> accessed 22 October 2024.

[26] 'Campaña Artemisa en Serranía de La Macarena no puede atropellar los derechos del campesinado' (*Dejusticia*, 26 February 2020) <https://www.dejusticia.org/campana-artemisa-en-serrania-de-la-macarena-no-puede-atropellar-los-derechos-de-campesinos/> accessed 22 October 2024.

[27] More information on the case can be found in: 'José Noé Mendoza Bohórquez et al. v. Department of Arauca et al. (Climate-Induced Migration as Forced Displacement)' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/jose-noe-mendoza-bohorquez-et-al-v-department-of-arauca-et-al-climate-induced-migration-as-forced-displacement/> accessed 30 October 2024.

		displacement due to environmental factors, ensuring comprehensive protections and support for affected populations.[28]		
Modification of Ethanol fuel regulations[29]	Supreme Court (Mexico)	The court ordered the Mexican government to revise its ethanol fuel regulations. The existing regulations would remain valid until new ones are enacted, with a deadline for the revised regulations set within 180 days of the decision.[30]	Suspended declaration of invalidity	The decision was implemented by the Energy Regulatory Commission eight months after the decision, thus exceeding the six months deadline set by the Supreme Court.[31]
Neubauer, et al. v. Germany[32]	Federal Constitutional Court (Germany)	The court directed the German government to revise the Climate Protection Act to include specific emissions reduction goals for 2031-2049. The existing targets would remain valid until new ones are enacted, with a deadline for the revised goals set for no later than December 31, 2022.[33]	Suspended declaration of invalidity	Three months after the ruling,[34] the German parliament amended its Climate Change Act in 2021, setting more ambitious emissions reduction targets. The new targets include a 65% reduction by 2030 (up from 55%) and climate neutrality by 2045 (previously 2050).[35]

[28] *Sentencia T-123/24* (Corte Constitucional de Colombia (Colombian Constitutional Court)) 68–70.

[29] More information on the case can be found in: 'Ruling on Modification to Ethanol Fuel Rule' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/ruling-on-modification-to-ethanol-fuel-rule/> accessed 18 October 2024.

[30] *Amparo en Revisión 610/2019* Alberto Pérez Dayán (Suprema Corte de Justicia de la Nación (Mexican Supreme Court)) 83–7.

[31] 'Ciudadano vs. Comisión Reguladora de Energía Por Aumento Del Porcentaje de Etanol En Las Gasolinas En México' (*Plataforma de litigio climático para Latinoamérica y el Caribe*) <https://litigioclimatico.com/es/ficha/ciudadano-vs-comision-reguladora-de-energia-por-aumento-del-porcentaje-de-etanol-en-las> accessed 22 October 2024.

[32] More information on the case can be found in: 'Neubauer, et al. v. Germany' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/neubauer-et-al-v-germany/> accessed 18 October 2024.

[33] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* [2021] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]) [266–8].

[34] The unexpected expediency in the decision's implementation has been attributed by some commentators to preexisting plans to align German policies with EU law, as well as the government's interest in presenting itself as a climate champion ahead of national elections. See Isabella Kaminski, '"A Very Bureaucratic Approach to the Most Existential Threat of the Century": Neubauer and the German Climate Case Three Years On' (*The Wave*, 2 October 2024) <https://www.the-wave.net/neubauer-german-climate-case-three-years-on/> accessed 22 October 2024.

[35] 'Climate Change Act: Climate Neutrality by 2045.' (*Die Bundesregierung informiert | Startseite*, 25 June 2021) <https://www.bundesregierung.de/breg-de/schwerpunkte/klimaschutz/climate-change-act-2021-1936846> accessed 22 October 2024.

PSB et al v Brazil (on climate fund)[36]	Federal Supreme Court (Brazil)	The court mandated the Brazilian government to reactivate the Climate Fund, ensuring that the allocated funds were used for their intended purpose of addressing climate change.[37]	Injunction	The new government of President Luiz Inacio Lula da Silva reactivated the Climate Fund in August 2023 (13 months after the decision).[38] The resources of the Fund were subsequently raised in 2024.[39]
Shrestha v Nepal[40]	Supreme Court (Nepal)	The court ordered the Nepalese government to draft and implement comprehensive climate policies 'as soon as possible'. In the meantime, the court ordered the implementation of existing government plans to address climate change.[41]	Structural injunction	Nepal's government passed the Environment Protection Act and Forests Act in 2019.[42] Yet, the government is still reluctant to adopt a Climate Change Law as requested by the decision.[43]
Spain v Catalonia[44]	Constitutional Court (Spain)	The court declared certain provisions of the Catalan government's climate law unconstitutional.[45]	Declaration of invalidity	The decision was implemented automatically.

[36] More information on the case can be found in: 'PSB et al. v. Brazil (on Climate Fund)' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/psb-et-al-v-federal-union/> accessed 18 October 2024.
[37] *ADPF-708 04-07-2022* Roberto Barroso (Supremo Tribunal Federal (Brazilian Supreme Court)) [36–7].
[38] 'MMA e BNDES Relançam Fundo Clima Com Aporte de R$ 10 Bilhões' (*Ministério do Meio Ambiente e Mudança do Clima*) <https://www.gov.br/mma/pt-br/mma-e-bndes-relancam-fundo-clima-com-aporte-de-r-10-bilhoes> accessed 22 October 2024; 'BNDES e MMA Relançam Fundo Clima Ampliado e Com Novas Áreas de Atuação' (*BNDES*) <https://agenciadenoticias.bndes.gov.br/detalhe/noticia/BNDES-e-MMA-relancam-Fundo-Clima-ampliado-e-com-novas-areas-de-atuacao/> accessed 22 October 2024.
[39] 'Federal Government Signs Contract for BRL 10.4 Billion from the Climate Fund' (*Presidência da República/gov.br*, 4 March 2024) <https://www.gov.br/planalto/en/latest-news/2024/04/federal-government-signs-contract-for-brl-10-4-billion-from-the-climate-fund> accessed 22 October 2024.
[40] More information on the case can be found in: 'Shrestha v. Office of the Prime Minister et Al.' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/shrestha-v-office-of-the-prime-minister-et-al/> accessed 18 October 2024.
[41] *Shrestha v The Office of the Prime Minister & Ors NKP, Part 61, Vol 3* (Supreme Court (Nepal)) [6–7].
[42] 'Shrestha v. Prime Minister' (*CLX - Climate Law Accelerator Toolkit NYU School of Law*) <https://clxtoolkit.com/casebook/shrestha-v-prime-minister/> accessed 22 October 2024.
[43] Ritesh Panthee, 'Nepal Needs a Dedicated Climate Law' (*Nepal Live Today*, 30 April 2024) <https://www.nepallivetoday.com/2024/04/30/nepal-needs-a-dedicated-climate-law/> accessed 22 October 2024.
[44] This decision is unfortunately not reported in climate litigation databases or English-speaking media outlets. Nevertheless, the full text of the decision can be found in 'BOE-A-2019-10915 Pleno. Sentencia 87/2019, de 20 de Junio de 2019. Recurso de Inconstitucionalidad 5334-2017.' (*Agencia Estatal Boletín Oficial del Estado*) <https://www.boe.es/diario_boe/txt.php?id=BOE-A-2019-10915> accessed 18 October 2024.
[45] *STC 87/2019* (Tribunal Constitucional de España (Spanish Constitutional Court)) 100–1.

Vanderstock v Victoria[46]	High Court (Australia)	The court declared the electric vehicle tax adopted by the government of Victoria unconstitutional.[47]	Declaration of invalidity	The decision was implemented automatically. The state of Victoria has developed a plan to pay citizens back the money collected with the tax declared unconstitutional.[48]
Workers Union of Somarco et al v. Chile[49]	Supreme Court (Chile)	The court ordered the Chilean government authorities to implement a plan for the reinsertion into the labour market of workers affected by the decarbonization process, consulting them in that process.[50]	Structural injunction	In 2022, the plaintiffs asked the court for an order requiring the government to report on the decision's implementation. Yet, there is no additional information available regarding the outcome or follow-up of this request.[51]

Table 1 reveals a complex picture in terms of the legal nature of the remedies adopted, as well as the practical aspects of their implementation. The nature of the remedies ranges from traditional declarations of invalidity to ambitious structural injunctions with continued supervision by courts. Simple declarations of invalidity are employed in the jurisdictional disputes discussed in Chapter

[46] More information on the case can be found in: 'Vanderstock and Anor vs the State of Victoria' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/vanderstock-anor-vs-the-state-of-victoria/> accessed 18 October 2024.
[47] *Vanderstock v Victoria [2023] HCA 30* (High Court of Australia) [199].
[48] Australian Associated Press, 'Electric Vehicle Owners to Be Repaid Millions Charged under Victoria's Invalid Road Tax' *The Guardian* (29 November 2023) <https://www.theguardian.com/environment/2023/nov/29/electric-vehicle-ev-tax-victoria-invalid-repaid> accessed 21 October 2024.
[49] More information on the case can be found in: 'Company Workers Union of Maritima & Commercial Somarco Limited and Others v Ministry of Energy' (*Climate Change Litigation*) <https://climatecasechart.com/non-us-case/company-workers-union-of-maritima-commercial-somarco-limited-and-others-with-ministry-of-energy/> accessed 18 October 2024.
[50] *Sentencia Rol No 25530-2021* (Corte Suprema de Chile (Chilean Supreme Court)) 7–8.
[51] María Antonia Tigre and others, 'LITIGIO POR LA TRANSICIÓN JUSTA EN AMÉRICA LATINA: UNA CATEGORIZACIÓN INICIAL DE LOS CASOS DE LITIGIO CLIMÁTICO EN MEDIO DE LA TRANSICIÓN ENERGÉTICA' (Sabin Center for Climate Change Law - Columbia Law School - Columbia Climate School 2023) 24.

2 - i.e. the decisions from Spain[52] and Australia.[53] More sophisticated remedies were employed in the rights-based cases explored in Chapter 5. There, we find a mix of suspended declarations of invalidity - typically classified as weak remedies in public law scholarship[54] and sometimes criticised for that reason -[55] and structural injunctions - considered a particularly strong remedy.[56]

From a formal stance, one could arguably expect so-called strong remedies to have clearer catalytic effects in terms of triggering political action than their 'weaker' alternatives. Yet, a more complicated picture emerges when one considers the practical aspects of implementation in the cases presented in table 1. Although there is limited information available regarding the practical effects of some of the judgments, existing data suggests that stronger remedies do not generally lead to more substantial political action.

Take the *Leghari* case, considered an example of 'success' by many in the climate litigation literature.[57] Despite the ambitious remedies ordered by the court, existing accounts portray an ambivalent picture of the decision's practical effects.[58] In its first two years, the Climate Change Commission (CCC) established by the court reported a 66% rate of implementation of so-called

[52] *STC 87/2019* (n 45).
[53] *Vanderstock v Victoria [2023] HCA 30* (n 47).
[54] Dixon (n 6) 229–231; Po Jen Yap, 'New Democracies and Novel Remedies' (2017) 1 Public law 30, 32.
[55] Robert Leckey, 'The Harms of Remedial Discretion' (2016) 14 International Journal of Constitutional Law 584; Kent Roach, 'Dialogic Remedies' (2019) 17 International Journal of Constitutional Law 860, 865.
[56] Dixon (n 11) 230; Landau has suggested that structural injunctions can be compatible with the rationale of weak-form review. See David Landau, 'Aggressive Weak-Form Remedies' (2013) 5 Constitutional Court Review (Pretoria, South Africa: 2008) 244, 258, 263.
[57] Rodríguez-Garavito (n 3) 22; Jacqueline Peel and Hari M Osofsky, 'A Rights Turn in Climate Change Litigation?' (2018) 7 Transnational Environmental Law 37, 52, 61; Ben Batros and Tessa Khan (n 12) 102; Sam Bookman, 'Catalytic Climate Litigation: Rights and Statutes' (2023) 43 Oxford Journal of Legal Studies 598, 598; Emily Barritt and Boitumelo Sediti, 'The Symbolic Value of Leghari v Federation of Pakistan: Climate Change Adjudication in the Global South' (2019) 30 King's Law Journal 203, 204.
[58] Mir, 'Pakistan: A Good Story That Can Go Awry If Shortcomings Remain Unacknowledged' (n 19); Weaver and Kysar (n 19) 343–4.

priority actions.[59] Unfortunately, there's scarce information regarding what those actions really entailed. Following a suggestion by the chairman of the commission, the court dissolved the CCC in 2018 and instead constituted a standing Committee on Climate Change to act as a link between the court and the executive in the process of implementation of the framework set out by the CCC.[60]

No further action has been taken by the court since, but more recent scholarly accounts and media reports express doubts about the decision's real impacts. They suggest that the judgment lacked practical significance to spur political action, let alone to enhance climate resilience or reduce emissions at any scale.[61] The plaintiff himself casts doubt on the material significance of the decision and the real potential of judicial interventions.[62] Furthermore, he criticises the 'exoticised narrative' in both media and academia that 'takes away from the truth'.[63]

The *Leghari* case may be exceptional for its symbolic value[64] and success in academic circles,[65] but the evident shortfalls in its implementation are not uncommon among climate cases with ambitious judicial remedies. Similar dissatisfaction has been expressed by commentators with respect to other cases where courts have ordered structural injunctions - e.g. those from

[59] *Asghar Leghari v. Pakistan. Case W.P. No. 25501/2015. Order of 25/01/2018.* (n 18) para 19.
[60] ibid 24–5.
[61] Mir, 'Pakistan: A Good Story That Can Go Awry If Shortcomings Remain Unacknowledged' (n 19) 392; Weaver and Kysar (n 19) 344.
[62] Isabella Kaminski (n 20).
[63] ibid.
[64] Barrit and Sediti argue that *Leghari* 'sets the standard for the kind of judgment climate litigation activists are hoping for'. See Barritt and Sediti (n 57) 209.
[65] Peel and Osofsky (n 57) 52, 61; Rodríguez-Garavito (n 3) 22.

Chile,[66] Colombia,[67] and Nepal.[68] Expounding on the reasons behind this limited implementation in each case is naturally beyond the scope of this chapter. As noted by Landau, the effectiveness of judicial remedies 'depends on a number of variables that tend to vary from country to country and even issue by issue – the likely nature of the political response and the strength and cohesiveness of civil society'.[69] Yet, the reality of these cases suggests a complex relationship between the formal strength or ambition of remedies and their practical impacts to address the climate-related injuries established by courts.

The fact that ambitious remedies often fail to achieve their intended outcomes is not a new phenomenon. Scholars have studied the practical limitations of ambitious judicial remedies in public law for decades,[70] particularly in the context of socio-economic rights.[71] But this realisation is so far largely absent in the current academic discourse around climate adjudication in public law, where cases are often labelled as 'successful' regardless of their practical significance or the overall satisfaction of the petitioners whose rights are at stake.[72]

[66] María Antonia Tigre and others (n 51) 24.
[67] Dejusticia, '¿Qué le hace falta al Gobierno para implementar la sentencia contra el cambio climático y la deforestación?' (n 25); Dejusticia, 'Gobierno está incumpliendo las órdenes de la Corte Suprema sobre la protección de la Amazonía colombiana' (n 25).
[68] Ritesh Panthee (n 43).
[69] Landau (n 56) 263.
[70] Some of these limitations were already identified Roscoe Pound in 1917. See Dean Roscoe Pound, 'The Limits of Effective Legal Action' (1917) 3 American Bar Association Journal 55, 65–70.
[71] Examples include Landau (n 56); Dixon (n 6) ch 7; Cesar Rodriguez-Garavito, 'Beyond the Courtroom: The Impact of Judicial Activism on Socioeconomic Rights in Latin America Symposium: Latin American Constitutionalism: Section II: Social and Economic Rights' (2010) 89 Texas Law Review 1669; Kent Roach, 'Remedies and Accountability for Economic and Social Rights' in Malcolm Langford and Katharine G Young (eds), *The Oxford Handbook of Economic and Social Rights* (Oxford University Press); David Landau, 'CHOOSING BETWEEN SIMPLE AND COMPLEX REMEDIES IN SOCIO-ECONOMIC RIGHTS CASES' (2019) 69 The University of Toronto Law Journal 105.
[72] For example, see Rodríguez-Garavito (n 3) 22; Peel and Osofsky (n 57) 52, 63; Barritt and Sediti (n 57); Peel and Markey-Towler (n 12).

To be clear, I do not argue that courts should refrain from adopting strong remedies such as structural injunctions simply because they are likely to face greater obstacles in their implementation. I believe such remedies can be legitimately used to overcome burdens of inertia or legislative blind spots in the face of grave violations of constitutional rights.[73] In that sense, I agree with Rosalind Dixon's interpretation of *Leghari* as a legitimate response to systemic inertia in the response to climate change in Pakistan.[74] Yet, Table 1 suggests that courts and scholars alike should remain cautious of assuming that ambitious remedies will translate into meaningful political action.[75]

The overview of cases presented in Table 1 reveals an ambivalent remedial record in existing climate cases, meaning that ambitious remedies do not generally alleviate climate-related injuries or yield substantial climate action. In my opinion, this reality calls for more nuanced understandings of remedies that balance judicial ambition with realistic expectations of practical implementation. Without them, remedies in constitutional climate cases will mostly remain well-intended efforts leading to unfulfilled promises.[76] In my opinion, the first step towards a nuanced understanding of remedies is to explore the specific challenges to implementation stemming from the legal nature of climate change, as explained in the next section.

3. The Complexities of Remedies resulting from the Legal Nature of Climate Change

[73] Dixon (n 6) 80–7.
[74] ibid 120.
[75] Kent Roach (n 2) 135.
[76] Mir, 'Pakistan: A Good Story That Can Go Awry If Shortcomings Remain Unacknowledged' (n 19) 392.

In addition to their practical implementation challenges - common across various fields of public law as indicated above - remedial decisions in climate cases should account for the specific characteristics of the legal nature of climate change. This legal nature has two main implications for courts' remedial capacity. First, it restricts courts' ability to redress or ameliorate climate-related affectations of rights, due to the irreversible impacts of past GHG emissions,[77] the extent to which emissions result from a wide range of activities essential to modern societies - its polycentricity -[78] and the global nature of climate change.[79] Second, addressing climate change requires wide-ranging and long-term transformations across economic sectors and policy areas. This means that ambitious remedies prescribing climate action give rise to multiple trade-offs[80] that heighten the risks of compromising other legitimate constitutional interests.

a) The limited ability of constitutional courts to address climate-related affectations of rights

Even if we look past the challenges of implementing judicial remedies, the physical reality of climate change restricts the ability of courts to redress or ameliorate climate-related rights affectations through mitigation. No single court can 'solve' climate change.[81] The specific characteristics of climate change that give rise to such restrictions relate to its global nature, the

[77] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33) para 130; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 3) 1170.
[78] Elizabeth Fisher and Eloise Scotford, 'Climate Change Adjudication: The Need to Foster Legal Capacity: An Editorial Comment' (2016) 28 Journal of Environmental Law 1, 3.
[79] Sheila Jasanoff, 'A New Climate for Society' (2010) 27 Theory, Culture & Society 233, 237.
[80] A general overview of the trade-offs present in the governance of climate change at different scales can be found in Asim Zia, 'Synergies and Trade-Offs between Climate Change Adaptation and Mitigation across Multiple Scales of Governance' in Riyanti Djalante and Bernd Siebenhüner (eds), *Adaptiveness: Changing Earth System Governance* (Cambridge University Press 2021).
[81] Fisher and Scotford (n 78) 3.

irreversible impacts of GHG emissions, and the fact that it is caused by a myriad of human activities across sectors at multiple scales.

First, the sources of GHG emissions driving climate change are global and unevenly distributed across the world.[82] Thus, the ability of courts to alleviate climate-related harms is constrained by the fact that a single country's efforts may not suffice to achieve substantial impact.[83] By this I do not mean that governments should not have a constitutional duty to pursue climate mitigation. Indeed, I agree with the German Constitutional Court's understanding that the global nature of climate change may add an 'international dimension' to the constitutional obligation to take climate action, compelling states to engage in international negotiations in addition to adopting domestic mitigation and adaptation measures.[84] Yet, the impact of mitigation-oriented judicial remedies is undeniably limited by a country's share of global emissions. This is exacerbated in developing countries with negligible emissions, meaning that their mitigation efforts are almost inconsequential to the level of exposure of their citizens to the negative consequences of climate change.

Second, climate change is to some degree irreversible - and will be so over hundreds to thousands of years.[85] This means that constitutional courts cannot redress climate-related

[82] Elinor Ostrom, 'Polycentric Systems for Coping with Collective Action and Global Environmental Change' (2010) 20 Global Environmental Change 550, 550; Elizabeth Fisher, Eloise Scotford and Emily Barritt, 'The Legally Disruptive Nature of Climate Change' (2017) 80 The Modern Law Review 173, 178.
[83] As noted by Ostrom, this is main justification for seeking solutions at the international level. See Ostrom (n 82) 550–1.
[84] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33) para 200.
[85] IPCC (ed), 'Summary for Policymakers', *Climate Change 2021 – The Physical Science Basis: Working Group I Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 21; Rodríguez-Garavito (n 3) 37–8.

violations of rights by restoring past climate conditions - or by ordering governments to do so.[86] Neither can they free anyone from the risks posed by climate change for the enjoyment of constitutional rights in the future. As things stand, the only way to *mitigate* climate change - to prevent further damage - is to transition towards carbon neutrality in the second half of this century by stabilising atmospheric concentrations of greenhouse gases.[87] But as Hulme suggests, the main impacts of climate change 'will resist our interventions for at least another generation, if not longer, irrespective of our successes in slowing the growth in global greenhouse gas emissions'.[88] Court's remedial capacity is thus significantly restricted in ecologically precarious times[89] with no prospect of full restoration.[90]

Third, climate change is caused by the cumulative emissions produced by a wide array of human activities integral to contemporary life. In Hulme's words, 'Climate change is everywhere'.[91] This extreme polycentricity[92] complicates judicial responses, as climate change resists elegant, rational solutions.[93] Comprehensive remedies are beyond the capacity of courts due to its global and long-term needs, while targeting specific sources of emissions is inadequate. The complex interplay of factors driving climate change react and adjust in unpredictable ways,[94]

[86] This reality was noted by the Court of Appeals in *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 3) 1170.
[87] IPCC (n 85) 28.
[88] Hulme (n 7) 336.
[89] Elizabeth Fisher, 'Going Backward, Looking Forward: An Essay on How to Think about Law Reform in Ecologically Precarious Times' (2022) 30 NZULR 111, 111.
[90] Kent Roach (n 2) 137.
[91] See Hulme (n 7) 322.
[92] Fisher, Scotford and Barritt (n 82) 178.
[93] ibid 177; Hulme (n 7) 334, 340.
[94] Hulme (n 7) 339.

making prescriptive remedies not only ineffective but potentially counterproductive in the long term.[95]

The constraints associated with the global nature, irreversible character, and polycentricity of climate change have different implications for the capacity of courts to alleviate climate-related affectations through adaptation measures. For example, the global nature of climate change is practically irrelevant since what matters is each country's vulnerability to specific risks - e.g. sea level rise, floods, heatwaves.[96] Yet, the transboundary nature of some of these risks may challenge the effectiveness of specific adaptation measures, as they might require coordination efforts involving multiple countries.

The polycentricity and irreversible character of climate change do nonetheless restrict courts' capacity to provide effective adaptation-oriented remedies. In the case of polycentricity, adaptation measures demand cross-sectoral action[97] and may yield unintended results - or so-called maladaptation.[98] These measures are costly,[99] require balancing of multiple considerations, and demand significant technical and administrative capacity.[100] Think of coastal defences,

[95] Some of the problems of fragmentary approaches to climate change are described by Ostrom (n 82) 554–5. See also Benoit Mayer, 'The Contribution of Urgenda to the Mitigation of Climate Change' (2023) 35 Journal of Environmental Law 167.
[96] Glenn Althor, James EM Watson and Richard A Fuller, 'Global Mismatch between Greenhouse Gas Emissions and the Burden of Climate Change' (2016) 6 Scientific Reports 20281.
[97] Jan McDonald and Phillipa C McCormack, 'Rethinking the Role of Law in Adapting to Climate Change' (2021) 12 WIREs Climate Change 6–11.
[98] Intergovernmental Panel on Climate Change (IPCC) (ed), 'Summary for Policymakers', *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 27 <https://www.cambridge.org/core/product/47A01B0C79829C95E896E3C0ACDE25BC>.
[99] OECD, 'Challenges in Financing Adaptation in Developing Countries', *Scaling Up Adaptation Finance in Developing Countries: Challenges and Opportunities for International Providers* (2023) <https://www.oecd-ilibrary.org/content/component/c19c39cd-en>.
[100] Intergovernmental Panel on Climate Change (IPCC) (n 98) 27–8.

relocation of communities, or green infrastructure.[101] In this sense, adaptation-oriented remedies raise some of the anxieties associated with the judicial enforcement of the positive dimension of socioeconomic rights[102] - such as queue jumping and excessive budgetary burdens.[103] At the same time, the irreversible impacts of climate change cause damages that adaptation measures cannot alleviate. In other words, there are limits to adaptation,[104] which the latest IPCC reports categorise into soft and hard limits.[105] Beyond such limits, courts cannot provide plaintiffs with effective redress.

b) Multiple trade-offs embedded in remedial climate action

The legal nature of climate change does not only undermine the potential effectiveness of judicial remedies in constitutional adjudication. It also exacerbates the risks of unintended consequences from judicial interventions. Addressing climate change - through mitigation and adaptation alike - presents multiple trade-offs that undermine courts' ability to spur political action without compromising other legitimate constitutional interests.

[101] ibid 22.
[102] Marcelo Lozada Gomez, 'Review of César Rodríguez-Garavito, Ed. Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action' (2024) 22 International Journal of Constitutional Law 621, 626.
[103] These issues have been explored at large over the last few decades. Examples include, among others: Kent Roach, 'Polycentricity and Queue Jumping in Public Law Remedies: A Two-Track Response Public Law for the Twenty-First Century' (2016) 66 University of Toronto Law Journal 3; Rosalind Dixon, 'Creating Dialogue about Socioeconomic Rights: Strong-Form versus Weak-Form Judicial Review Revisited' (2007) 5 International Journal of Constitutional Law 391; Jeff King, *Judging Social Rights* (Cambridge University Press 2012); Katharine G Young, 'A Typology of Economic and Social Rights Adjudication: Exploring the Catalytic Function of Judicial Review' (2010) 8 International journal of constitutional law 385.
[104] Intergovernmental Panel on Climate Change (IPCC) (n 98) 26; Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* (Cambridge University Press 2023) 1224.
[105] According to the IPCC, 'Soft limits may change over time as additional adaptation options that are practicable or affordable become available. Hard limits will not change over time as no additional adaptive actions are possible.' Intergovernmental Panel on Climate Change (IPCC) (n 104) 2444.

Trade-offs exists between the need to adopt urgent measures in the short term[106] and the degree of flexibility required to govern climate change dynamically over a long period of time.[107] Although a tension between stability and change lies at the heart of judicial decision making,[108] the need to strike a balance between short- and long-term measures has greater repercussions when choosing remedies in climate cases. Ambitious orders to reduce GHG emissions within a short period of time might lead governments to make inefficient short-term decisions that raise global emissions in the long term. For example, Mayer has argued, after an ex-post analysis of the implementation of the *Urgenda* case in the Netherlands, that short-term measures adopted to abide by the Supreme Court's judgment might actually lead to a net increase in long-term global emissions.[109] To sort this difficulty, remedies may prioritise timely long-term action that affords the political branches flexibility to adjust climate legislation over time. In other words, remedies might underscore the urgency of long-term action, but without imposing short-term limits on climate action that might cause inefficiencies and disruptions leading to counterproductive long-term outcomes.

Another source of trade-offs stems from the systemic and cross-sectoral nature of climate change. Climate change requires wide-ranging measures with potential implications for other legitimate social goals - e.g. energy security, social equity, economic growth. The increasing recognition of these trade-offs has led to the conceptualisation of *just transition litigation*, where

[106] As noted by Chakrabarty, climate change confronts us with 'finite calendars of urgent action'. See Dipesh Chakrabarty, *The Climate of History in a Planetary Age* (University of Chicago Press 2021) 12.
[107] Veerle Heyvaert, 'Governing Intersystemic Systemic Risks: Lessons from Covid and Climate Change' (2022) 85 The Modern Law Review 938, 554.
[108] Timothy Endicott, 'How Judges Make Law' in Elizabeth Fisher, Jeff King and Alison Young (eds), *The Foundations and Future of Public Law: Essays in Honour of Paul Craig* (Oxford University Press 2020) 134.
[109] Mayer (n 95) 172–9.

individuals and communities challenge climate measures that infringe upon their rights, underscoring the need to address the negative side-effects of climate policies.[110]

When climate measures are adopted by means of judicial remedies, courts risk compromising competing goals and creating reverse burdens of inertia that hinder the ability of legislatures to accommodate the trade-offs and externalities of climate action.[111] A case in India illustrates this point. In 2021, the Indian Supreme Court adopted a decision aimed at protecting two endangered bird species, the Great Indian Bustard and the Lesser Florican.[112] Specifically, the court imposed restrictions on the setting up of overhead transmission lines in a territory of 99,000 square kilometres and ordered the government to convert existing lines into underground power lines within one year.[113] Soon after this decision, the Indian Government submitted a petition for modification of the court's judgment, alleging that laying out underground transmission lines was 'technically not possible' and that the area where the restrictions were imposed contained a large portion of the solar and wind energy potential of the country.[114] The latter meant that the court's decision had adverse implications for India's transition away from fossil fuels in accordance with its international commitments under the Paris Agreement and the UNFCCC.[115] In 2024, the Supreme Court modified its judgment after recognising an 'intricate interface' between the conservation of endangered species and the protection of individuals against climate change.[116]

[110] See Annalisa Savaresi and others, 'Conceptualizing Just Transition Litigation' [2024] Nature sustainability.
[111] Dixon (n 6) 185–94.
[112] *MK Ranjitsinh & Ors v Union of India & Ors IA No 85618 of 2020 in Writ Petition (Civil) No 838 of 2019* (Supreme Court of India).
[113] ibid 18.
[114] *MK Ranjitsinh & Ors v Union of India & Ors 2024 INSC 280* (Supreme Court of India) [7].
[115] ibid.
[116] ibid 53.

The court lifted the restrictions on overhead transmission lines and constituted an expert committee in charge of adopting measures to harmonise the protection of the endangered species with the development of renewable energy sources in the country.[117]

Even though the trade-off between biodiversity conservation and climate action in this case did not originate in a case demanding more ambitious climate action, the Supreme Court decision exemplifies the interrelationship between multiple legitimate goals and the risks of misplaced judicial interventions in complex, polycentric issues. In this case, a rigid remedy placing an undue burden on government efforts to decarbonise the country's energy system could only be reversed after three years of the initial decision, leaving behind a significant amount of dissipated administrative and financial resources. Although the risks of misplaced judicial interventions are also present in other domains,[118] they are particularly significant in climate cases due to the interconnectedness and scale of climate change. As noted by Roach, constitutional courts should not 'shy away' from the competing interests that may be compromised when devising remedies in climate cases.[119] Instead, they should consider such risks explicitly and engage in remedial humility to avoid placing excessive burdens on the ability of governments to pursue climate action.

4. Remedial Humility and the Adequate Role of Prescriptive Remedies in Climate Cases

I have argued that the characteristics of the legal nature of climate change limit the ability of constitutional courts to redress climate-related violations of rights through both mitigation and

[117] ibid 62–6.
[118] Dixon (n 6) ch 6.
[119] Kent Roach (n 2) 135.

adaptation measures. At the same time, this legal nature implies that prescriptive remedies face intricate trade-offs that risk compromising other legitimate social goals. Together, these two factors suggest that constitutional courts should prioritise humility in their remedial strategies, limiting prescriptive remedies to the pursuit of long-term guidelines of climate action founded in authoritative sources of scientific consensus, while refraining from ordering ambitious measures in the short-term.

In line with the approach to humility set out in chapter 1, *remedial humility* refers to an approach that instructs constitutional courts to accommodate the limitations of their remedial capacity in climate cases and think hard about the sources of complexity and compromise. In other words, remedial humility requires the determination of remedies in climate cases to consider the reality in which such remedies are to be implemented - the legal nature of climate change - as well as the risks of unintended consequences. A remedially humble approach mitigates the latter risks and acknowledges the limited ability of courts to address climate-related injuries through prescriptive remedies.

Drawing on epistemic humility, remedial humility reflects the idea that pursuing perfect solutions with respect to complex, 'wicked'[120] problems like climate change is asymptotic.[121] It incorporates the legal nature of climate change into the remedial reasoning of constitutional courts by encouraging limited remedies that define the contours of legitimate climate action rather than the specific means of climate governance. Furthermore, remedial humility entails a

[120] Jonathan M Gilligan and Michael P Vandenbergh, 'Beyond Wickedness: Managing Complex Systems and Climate Change' (2020) 73 Vanderbilt Law Review 1777; Richard J Lazarus, 'Super Wicked Problems and Climate Change: Restraining the Present to Liberate the Future' (2009) 94 Cornell Law Review 1153.
[121] Sheila Jasanoff, 'Technologies of Humility' (2007) 450 Nature (London) 33.

component of institutional humility, responding to concerns about the limited judicial capacity of courts,[122] as well as the potential compromises incurred by them, in the context of climate change.[123] Remedial humility encourages different types of remedies with respect to different aspects of climate action. Courts are thus required to distinguish between climate cases focused on mitigation,[124] adaptation,[125] and those challenging climate policies for violating constitutional rights or affecting other legitimate social goals - *just transition cases* as the ones explored in chapter 5.[126]

Being remedially humble in mitigation cases means establishing minimum elements of long-term mitigation strategies while avoiding short-term, piecemeal injunctions that fail to capture the scale and cross-sectoral implications of climate change.[127] It further encourages courts to assess the governments' overall climate ambition[128] and define constitutionally required goals without specifying means to achieve them.[129] This approach is thus consistent with the

[122] Aruna Sathanapally, *Beyond Disagreement: Open Remedies in Human Rights Adjudication* (1st ed., Oxford University Press 2012) 26–8.
[123] Remedial humility share similar rationales and is partially compatible with Sathanapally's proposal of open remedies. See ibid 16.
[124] The majority of cases included in this dissertation are focused on mitigation. Notable examples include *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33); *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 22); *Sentencia STC4360-2018* (n 24).
[125] Perhaps the only cases of this sort to this day are *Leghari* and *Shrestha*. See *Asghar Leghari v. Pakistan. Case W.P. No. 25501/2015. Order of 04/09/2015* (n 17); *Shrestha v. The Office of the Prime Minister & Ors NKP, Part 61, Vol. 3* (n 41). Yet, adaptation-oriented measures were also ordered by the Colombian Supreme Court in *Sentencia STC4360-2018* (n 24).
[126] An example of this third category is the Chilean case included in Table 1 above. See *Sentencia Rol No. 25.530-2021* (n 50).
[127] In this sense, my approach to remedial humility is compatible with Roach's approach to remedial modesty. See Kent Roach (n 2) 109–10.
[128] A set of proposed principles to guide the judicial assessment of governments' mitigation ambition can be found in Sophie Marjanac and Sam Hunter Jones, 'Staying within Atmospheric and Judicial Limits: Core Principles for Assessing Whether State Action on Climate Change Complies with Human Rights' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022).
[129] Kent Roach (n 2) 109.

judgments in cases like *Neubauer*[130] and *Do-Hyun Kim*[131], where courts reviewed mitigation legislation and identified elements inconsistent with constitutionally-required minimums - concerning the distribution of mitigation efforts over time until the point of carbon neutrality,[132] as explored in chapter 5. Although these judgments were facilitated by the existence of climate-specific legislation in Germany and South Korea, remedial humility also allows courts to intervene in cases of legislative blind spots,[133] where the political branches have failed to develop a climate mitigation strategy. In that sense, this approach is also compatible with judicial interventions in cases like *Shrestha v Nepal,*[134] aimed at mobilising the political branches to develop comprehensive long-term responses to climate change in fulfilment of their duties to protect constitutional rights.

Remedial humility has similar implications for climate cases revolving around adaptation, especially those concerning national long-term adaptation plans - e.g. *Leghari*[135] and *Shrestha.*[136] Yet, unlike mitigation cases, remedies in adaptation cases may also address the conditions of specific claimants through affirmative measures to prevent, or react to, specific climate-related events - sea level rise, heatwaves, floods.[137] An example of this sort can be found in the recent

[130] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33).
[131] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409 (Constitutional Court of Korea)* (n 32).
[132] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 22) 47–9; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33) paras 142, 183.
[133] An examination of the role of constitutional courts in the context of legislative blind spots can be found in Dixon (n 6) 80–4.
[134] 'Shrestha v. Prime Minister' (n 42).
[135] *Asghar Leghari v. Pakistan. Case W.P. No. 25501/2015. Order of 25/01/2018.* (n 18).
[136] *Shrestha v. The Office of the Prime Minister & Ors NKP, Part 61, Vol. 3* (n 41).
[137] An exploration of the legal debates present in adaptation cases can be found in Michael Burger, Jessica Wentz and Daniel J Metzger, 'Climate Science and Human Rights: Using Attribution Science to Frame Government Mitigation and Adaptation Obligations' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 234–8.

judgment of the Colombian Constitutional Court, where the court ordered local and regional authorities to provide humanitarian assistance to the victims of a river flood in the north-east of the country between 2015 and 2016.[138] In providing adaptation remedies for specific claimants, courts may favour limited remedies requiring governments to address foreseeable risks without specifying the means of implementation. Furthermore, courts should be aware of limits to adaptation[139] and reflect on the implications of their judgments for the allocation of scarce resources with respect to other foreseeable risks associated with climate change.

Finally, remedial humility is also relevant in cases challenging climate action for its unlawful impacts on other constitutional interests - e.g. constitutional rights[140] or the constitutional allocation of powers between national and subnational authorities.[141] In these instances, courts typically define what is 'off-limits' for climate action rather than indicating what is required by it. This is arguably what happened in the case of *Workers Union of Somarco*, where the Chilean Supreme Court determined that the government's coal phase-out plan breached the rights of power plant workers by failing to mitigate the impact of job losses of their livelihoods - see chapter 5.[142] By defining the boundaries of legitimate climate action through negative means, courts may help narrow the permissible range of government interventions to address climate change without hindering the achievement of other constitutional goals. However, court may err in optimising other constitutional goals through exceedingly prescriptive means, hindering government efforts to pursue climate action - as suggested by the decision of the Indian Supreme

[138] *Sentencia T-123/24.* (n 28) 68–70.
[139] Intergovernmental Panel on Climate Change (IPCC) (n 104) 2444.
[140] For example, *Sentencia Rol No. 25.530-2021* (n 50); *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33).
[141] Examples include *Vanderstock v Victoria [2023] HCA 30* (n 47); *STC 87/2019* (n 45).
[142] For example, *Sentencia Rol No. 25.530-2021* (n 50).

Court discussed in the last section.[143] Thus, courts should be cautious of placing excessive and inflexible obstacles to climate action in decisions concerning the protection of other constitutional rights and values.

The approach to remedial humility proposed here is agnostic with respect to the kind of remedies employed by courts in climate cases. It understands that the specific form and intensity of remedies may vary depending on factors like legal culture, institutional context,[144] or existing legal frameworks to address climate change.[145] For example, structural injunctions might be adequate in contexts of defective political processes[146] leading to a lack of climate-specific legislation and where courts have a tradition of interventions in public interest litigation - such as India and Pakistan.[147] At the same time, simple or suspended declarations of invalidity may be appropriate to address deficiencies of existing legislative framework while granting the political branches sufficient time to improve legal frameworks without significant disruption[148] - e.g. cases like *Neubauer*[149] and *Do-Hyun Kim*.[150]

[143] *M.K. Ranjitsinh & Ors v Union of India & Ors. 2024 INSC 280.* (n 114).
[144] As suggested by Sathanapally, evaluations of institutional capacity of courts are always dependent on the demonstrated responsiveness of the political branches. See Sathanapally (n 122) 28.
[145] As noted by Sunstein, judicial humility should be responsive to varying political and institutional conditions. It may thus be appropriate for courts to be increase the intensity of their review in contexts of defective political processes. See Cass R Sunstein, 'From Theory to Practice Order of the Coif Lecture: Response' (1997) 29 Arizona State Law Journal 389, 402. A similar justification for the use of multiple remedies and varying intensity of review can be found in Dixon (n 6) ch 4.
[146] Kent Roach and Geoff Bunlender, 'Mandatory Relief and Supervisory Jurisdiction: When Is It Appropriate, Just and Equitable' (2005) 122 South African Law Journal 325, 345–51.
[147] Birsha Ohdedar (n 19) 108–9; Dixon (n 6) 120.
[148] Jolene Lin, 'Climate Change and the Courts' (2012) 32 Legal Studies 35, 40.
[149] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 33).
[150] *2020 Heonma 389, etc. 29/08/2024 Public Notice 335, 1409.* (n 22).

In sum, remedial humility encourages constitutional courts to establish guidelines of legitimate climate action for the political branches. By focusing on setting long-term guidelines rather than prescribing detailed short-term policies, courts can encourage legislative and executive bodies to meet their constitutional obligations. This approach not only accommodates the complexity and scope of climate change but also addresses the limitations of judicial capacity in enforcing extensive climate strategies. As noted by Sunstein, legal solutions must operate 'in a world with distinctive limitations'.[151] Ultimately, remedial humility seeks to harmonize constitutional demands with practical considerations, acknowledging the need for flexible, context-sensitive remedies.[152] This perspective can guide courts in achieving a balanced role in climate governance, one that upholds constitutional frameworks without constraining the capacity of other branches to develop comprehensive, adaptive responses to climate change.

It is worth noting that I have not provided a justification of remedial humility rooted in concerns associated with the separation of powers or the democratic legitimacy of judicial review despite the natural connection between remedies and these notions.[153] The majority of scholarly accounts of the role of courts with respect to climate change focus heavily on them.[154] I have left these considerations aside because these notions are highly contextual, hence imposing different

[151] Cass R Sunstein, 'On Legal Theory and Legal Practice' (1995) 37 NOMOS: American Society for Political and Legal Philosophy 267, 271.
[152] Sathanapally (n 122) 11.
[153] As noted by Roach, 'Constitutional remedies involve some of the most contested separation of powers issues'. See Roach, 'Polycentricity and Queue Jumping in Public Law Remedies: A Two-Track Response Public Law for the Twenty-First Century' (n 103) 5.
[154] Examples include Laura Burgers, 'Should Judges Make Climate Change Law?' (2020) 9 Transnational Environmental Law 55; Gerry Liston and Paul Kingsley Clark, 'Climate Litigation before International Tribunals: The Six Portuguese Youth v. 33 Governments of Europe Case before the European Court of Human Rights' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 342–3; Rodríguez-Garavito (n 3) 27–8.

limits on the remedial capacity of constitutional courts across jurisdictions. Instead, I have provided an account of how the physical reality of climate change and its governance limit such remedial capacity regardless of domestic understandings of separation of powers or democratic legitimacy of courts. Nevertheless, remedial humility is consistent with the concerns raised by these concepts, as it promotes a limited role of constitutional courts in climate cases in accordance with the legal cultures and institutional contexts where they operate.

5. Conclusion

This chapter has explored the complexities of adopting judicial remedies in constitutional climate cases. The remedial record in existing cases reveals a complicated picture where more ambitious remedies suffer from weaker implementation. While ambitious remedies remain valuable tools for courts, their practical limitations should be acknowledged and incorporated into our narratives of failure and success. Furthermore, I contend that the legal nature of climate change restricts the ability of constitutional courts to redress climate-related harms. The analysis presented in this chapter highlights that the effectiveness of judicial remedies in constitutional climate cases is fundamentally constrained by the global, polycentric, and irreversible nature of climate change. These characteristics underscore the limitations of courts in delivering meaningful redress and facilitating compliance with prescriptive orders.

Prescriptive remedies in climate cases also embody significant trade-offs that reflect the complex interplay between judicial intervention and broader governance objectives. The systemic and cross-sectoral nature of climate nature entails that remedies prescribing ambitious climate action risk compromising other constitutional goals, giving rise to unintended consequences. For

example, rigid judicial orders may constrain the flexibility needed for governments to balance competing constitutional goals, such as economic development, social equity, and energy security. Cases like the Indian Supreme Court's decision concerning overhead transmission lines illustrate how prescriptive remedies, although well-intentioned, can inadvertently hinder essential climate initiatives, such as renewable energy development. These trade-offs emphasize the importance of context-sensitive judicial approaches that account for the interconnected and dynamic nature of climate governance. By carefully weighing these complexities, courts can strive to support constitutional objectives without imposing undue burdens or creating reverse inertia for long-term climate action.

Ultimately, judicial remedies in constitutional climate cases must seek to uphold constitutional mandates in the context of climate change without compromising the ability of the political branches to balance the trade-offs inherent in climate governance. Remedial humility serves as a vital framework to navigate this difficult balance, encouraging courts to define the contours of legitimate climate action while refraining from ordering overly prescriptive measures. This approach not only aligns with the inherent limitations of judicial capacity in climate cases but also recognizes the importance of empowering political and legislative bodies to develop adaptive and comprehensive climate strategies. In embracing this stance, constitutional courts can contribute meaningfully to climate governance by fostering accountability and setting long-term goals of climate action, but without undermining the flexibility necessary for a long-term transformation towards low-carbon futures.

Chapter 7. Pulling the Threads Together: Humble Constitutional Adjudication in the Age of Climate Change

1. Recurring Themes and Claims

In this thesis, I have advanced two distinct but complementary arguments. First, I have argued that the legal nature of climate change, characterised by its *multivalence*, *polycentricity*, *spatiality*, and *temporality*, introduces layers of complexity to the adjudication of constitutional climate disputes. Additionally, this legal nature often prompts courts to reframe or evolve constitutional doctrines of adjudication in climate cases, thus giving rise to a legal transition driven by climate change.[1]

Second, I argued that the legal nature of climate change and its resulting complexity call for humility in the adjudication of constitutional climate disputes, allowing courts to engage with the novel realities and legal questions raised by climate change while recognising the limits of their institutional capacity. Humility can thus be understood as a judicial attitude of conscientious engagement with the legal challenges posed by climate change, instructing courts to adapt existing understandings when necessary to capture the constitutional implications of climate change, and to uphold constitutional frameworks without losing sight of their limited role in climate governance.

[1] L.E. Burgers, *Justitia, the People's Power and Mother Earth: Democratic Legitimacy of Judicial Law-Making in European Private Law Cases on Climate Change*. (Doctoral Thesis Universiteit van Amsterdam 2020) 67 <https://pure.uva.nl/ws/files/52346646/Thesis_complete_.pdf> accessed 15 December 2024; Agnes Hellner and Yaffa Epstein, 'Allocation of Institutional Responsibility for Climate Change Mitigation: Judicial Application of Constitutional Environmental Provisions in the European Climate Cases Arctic Oil, Neubauer, and l'Affaire Du Siècle' (2023) 35 Journal of Environmental Law 207, 209.

To support these arguments, this thesis has examined over 30 constitutional judgments from around 20 jurisdictions, focusing on how courts conceptualise and respond to the challenges posed by the legal nature of climate change within their respective constitutional frameworks. The analysis of these judgments reveals that climate change is a subject of increasing prominence in constitutional adjudication around the world. Furthermore, it shows that the adjudication of constitutional climate disputes is riddled with legal questions and dilemmas[2] with similar contours in multiple jurisdictions. For example: Does climate governance lie primarily within the authority of national or subnational governments?[3] Do courts have clear judicial standards to review the adequacy of climate legislation or is that beyond their purview?[4] Who has standing to hold governments accountable for their climate (in)action?[5] When does state (in)action with respect to climate change violate constitutional rights?[6] What are suitable remedies to redress climate-related rights violations?[7]

[2] Sanja Bogojević, 'Legal Dilemmas of Climate Action' (2023) 35 Journal of Environmental Law 1, 2.

[3] E.g. *STC 87/2019* (Tribunal Constitucional de España (Spanish Constitutional Court)); *References re Greenhouse Gas Pollution Pricing Act, 2021 SCC 11* [2021] CJ Wagner (Supreme Court of Canada); *BvR 1565/21/1, BvR 1566/21/1, BvR 1669/21/1, BvR 1936/21/1, BvR 2574/21/1, BvR 2575/21/1, BvR 2054/21/1, BvR 2055/21/1, BvR 2056/21/1, BvR 2057/21/1, BvR 2058/21/1* [2022] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]).

[4] E.g. *Animal Legal Defense Fund v United States, 404 F Supp 3d 1294 (D Or 2019)* 1301; *Misdzi Yikh v Canada, 2020 FC 1059* Madam Justice McVeigh [72]; *Environnement Jeunesse v Attorney General of Canada 2021 QCCA 1871* [40].

[5] E.g. *Recurso de Queja 11/2022* [2022] Segunda Sala (Suprema Corte de Justicia de la Nación (Mexico) (Mexican Supreme Court)) [34]; *Juliana v United States, 947 F3d 1159 (9th Cir 2020)* 1168–9; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* [2021] First Senate (Bundesverfassungsgericht [BVerfG] [German Federal Constitutional Court]) [108–10].

[6] E.g. *Nature and Youth Norway et al v Ministry of Petroleum and Energy Case no 20-051052SIV-HRET* (Supreme Court of Norway) [157–63, 167–71]; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 5) paras 144–72, 182–266; *2020 Heonma 389, etc 29/08/2024 Public Notice 335, 1409* (Constitutional Court of Korea) 1424–32.

[7] E.g. *Asghar Leghari v Pakistan Case WP No 25501/2015 Order of 04/09/2015* (Lahore High Court); *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1169–73; *La Rose et al v Her Majesty the Queen 2020 FC 1008* [52–5].

Existing judgments further reveal that the adjudication of these legal questions faces difficulties stemming from the legal nature of climate change. For example, climate change's temporality raises doubts about when legislation authorising or promoting GHG emissions may be understood as posing a *present* or *immediate* threat to constitutional rights;[8] its polycentricity complicates the assessment of *suitable* remedies to address climate-related injuries, as effective remedial strategies may require a host of complex policy decisions at multiple scales and across sectors, thus beyond courts' authority to design and implement;[9] its multivalence casts doubts about how climate change should be primarily framed to assess its constitutional implications in adjudication: as a matter of open-ended politics best left to the political branches,[10] as an issue of shared governance between national and subnational governments,[11] or as a direct threat to constitutional rights;[12] and its spatiality raises questions about who is *individually* or *especially* impacted by climate change to have standing in constitutional adjudication,[13] or whether the potential extraterritorial impacts of a country's emissions on people abroad may give rise to a violation of constitutional rights.[14]

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[8] E.g. *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 6) para 168; *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 5) paras 108, 118, 183–7; *Verein KlimaSeniorinnen Schweiz v Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat* [2020] Schweizerisches Bundesgericht (Swiss Supreme Court) 1C_37/2019 [5.3].

[9] E.g. *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) para 57; *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1169–72.

[10] E.g. *Misdzi Yikh v. Canada, 2020 FC 1059* (n 4) paras 19, 77; *Smith v Attorney General [2022] NZHC 1693* [2022] Grice J [146–152].

[11] E.g. SCC, 'Reference Re Greenhouse Gas Pollution Pricing Act' paras 12, 146; *STC 87/2019* (n 3); *Amparo en Revisión 888/2018* [2020] Segunda Sala (Suprema Corte de Justicia de la Nación (Mexican Supreme Court)) 25.

[12] E.g. *Juliana v. United States, 947 F.3d 1159 (9th Cir. 2020)* (n 5) 1174; *Smith v Attorney General [2022] NZHC 1693* (n 10) para 193; *Nature and Youth Norway et al v. Ministry of Petroleum and Energy. Case no. 20-051052SIV-HRET* (n 6) para 168.

[13] E.g. *Animal Legal Defense Fund v. United States, 404 F. Supp. 3d 1294 (D. Or. 2019)* (n 4) 1299–300; *Recurso de Queja 11/2022* (n 5) para 34; *Verein KlimaSeniorinnen Schweiz v. Eidgenössisches Departement für Umwelt, Verkehr, Energie und Kommunikation, Generalsekretariat.* (n 8) para 5.5-6.2.

[14] *BvR 2656/18/1, BvR 78/20/1, BvR 96/20/1, BvR 288/20* (n 5) paras 90, 101, 132, 143, 173–82.

By bringing these and many other intricate legal questions or sticking points to light, this thesis has sought to provide a clear vision of the doctrinal challenges facing constitutional courts in climate disputes, telling a meaningful story[15] of how constitutional law is engaged in thinking about climate change and its governance in adjudication. In a scholarly landscape dominated by 'hopeful'[16] or 'satisfying'[17] stories about courts as champions of climate action in the face of a 'climate emergency',[18] I have strived to offer a different, internal[19] account of the role of constitutional law and constitutional adjudication in climate cases, focusing on doctrinal debates and the judicial reasoning of constitutional courts in relation to them.

In navigating the complexities of climate disputes, the idea of judicial humility emerges as a guiding principle for constitutional courts. A humble approach recognises the need to accommodate the legal nature of climate change into the interpretation of constitutional doctrines of adjudication, while being mindful of the constraints of the judicial role in light of the complexity and scale of climate change. To offer more precise guidance for courts, my approach to humility encompasses three dimensions: *Epistemic*, *Doctrinal*, and *Institutional* humility.

[15] Elizabeth Fisher, 'Telling Meaningful Stories About Climate Change and Public Law' [2024] Journal of Environmental Law eqae028.
[16] Lisa Heinzerling, 'The Rule of Five Guys' (2021) 119 Michigan Law Review 1137, 1139.
[17] Fisher (n 15) 1.
[18] See, e.g., César Rodríguez-Garavito (Ed.), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022); Mary Christina Wood, '"On the Eve of Destruction": Courts Confronting the Climate Emergency' (2022) 97 Indiana law journal 239; Jina J Kim, 'Leave No One behind: Realizing Environmental Justice through Climate Litigation Remedies' (2021) 48 Ecology Law Quarterly 409; Jacqueline Peel and Rebekkah Markey-Towler, 'Recipe for Success?: Lessons for Strategic Climate Litigation from the Sharma , Neubauer , and Shell Cases' (2021) 22 German law journal 1484.
[19] Christopher McCrudden, 'Legal Research and the Social Sciences' (2006) 122 Law Quarterly Review 632, 633; Joseph Raz, 'Why Interpret?' (1996) 9 Ratio juris 349, 358.

Epistemic, doctrinal, and institutional humility each address a distinct yet interrelated aspect of constitutional climate adjudication. Epistemic humility recognises that climate change often requires tailored framings to capture its constitutional implications. Given that such framings often demand consideration of evolving and uncertain scientific evidence, epistemic humility urges courts to acknowledge the limitations of available science and to align scientific insights with constitutional frameworks when reflecting on climate change. Doctrinal humility invites courts to acknowledge the shortcomings of established legal concepts - such as standing requirements, standards to assess a violation of states' duties of protection, or tests to allocate competences between national and subnational governments - to accommodate the constitutional implications of climate change, thus being open to the need to revise or refine them accordingly.

Finally, institutional humility acknowledges the judiciary's limited yet pivotal role in climate governance: while courts can set constitutional boundaries and establish the roadmap for long-term climate governance,[20] they cannot unilaterally 'solve' climate change or even meaningfully redress climate-related injuries for specific claimants.[21] Taken together, these three dimensions of humility allow courts to engage conscientiously with constitutional climate

[20] Sam Bookman, 'Uncertainty and Tension in Constitutional Climate Adjudication (May 21, 2024). German Law Journal (Forthcoming).' 18–20 <https://ssrn.com/abstract=4836405> accessed 11 November 2024.
[21] Elizabeth Fisher and Eloise Scotford, 'Climate Change Adjudication: The Need to Foster Legal Capacity: An Editorial Comment' (2016) 28 Journal of Environmental Law 1, 3; Thomas Groß, 'Why Courts Will Not Stop Global Warming, but Climate Litigation Is Still Useful' [2024] Verfassungsblog <https://verfassungsblog.de/why-courts-will-not-stop-global-warming-but-climate-litigation-is-still-useful/> accessed 7 November 2024.

disputes, thereby promoting reasoned, adaptable, and constitutionally grounded climate adjudication.[22]

By acknowledging these complexities, humble adjudication can instruct courts to adapt constitutional frameworks to the novel realities of climate change while respecting the role of the political branches to navigate the complexities and trade offs of climate governance. For instance, humble courts may tailor remedies to require government plans for long-term action compatible with constitutional rights, without dictating comprehensive policy details or strict emissions pathways that overlook governance realities. In this way, judicial humility fosters deeper constitutional engagement with climate change, understanding that climate governance is ultimately a shared responsibility between courts and the political branches within the housing of constitutional frameworks.[23]

Overall, my approach to humility moves beyond accounts of adjudication of climate disputes, centred around the dichotomy of judicial activism or conservatism,[24] to offer a narrative that prioritises the role of constitutional courts in advancing the long-lasting incorporation of climate change into the 'fabric'[25] of constitutional law theory and practice. In doing so, this thesis does not aim to settle doctrinal debates by providing the key answer to the solution of specific cases. Instead, it stresses the importance of legal cultures and constitutional frameworks, thus

[22] Dieter Grimm, 'Integration by Constitution' (2005) 3 International journal of constitutional law 193, 194.
[23] Jeremy Waldron, *Political Political Theory* (Harvard University Press 2016) 293–4.
[24] E.g. Waqqas Ahmad Mir, 'Pakistan: A Good Story That Can Go Awry If Shortcomings Remain Unacknowledged' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency: How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (Cambridge University Press 2022) 393; Victoria Adelmant, Philip Alston and Matthew Blainey, 'Courts, Climate Action, and Human Rights Lessons from the Friends of the Irish Environment v. Ireland Case' in César Rodríguez-Garavito (ed), *Litigating the Climate Emergency How Human Rights, Courts, and Legal Mobilization Can Bolster Climate Action* (2022) 308–9.
[25] Rt Hon Lord Sales, 'Modern Statutory Interpretation' (2017) 38 Statute Law Review 125, 128.

advocating for courts to adopt context-sensitive approaches that evolve constitutional law while working within 'the parameters of the constitutional imagination' in their respective traditions.[26]

2. Limitations of this Thesis' Findings

This thesis strives to be humble, confident of its contributions and the rigour of its findings, but also conscious of its limitations. One such limitation stems from the doctrinal and comparative approach adopted in this research, focused on judgments from jurisdictions with constitutional frameworks, or so-called 'rule-of-law polities'.[27] While this approach strengthens the internal validity of its findings and facilitates comparison across jurisdictions, it necessarily excludes other legal systems and insights from developments taking place outside constitutional courts, which might offer complementary perspectives on climate-related disputes.

Additionally, the selection of cases, while geographically diverse, is constrained by language availability and accessibility. This means that some relevant judgments, particularly from jurisdictions with less-documented case law, might not have been included in this research. Moreover, my focus on judicial reasoning to study the way constitutional courts navigate the difficulties posed by the legal nature of climate change might overlook additional information, such as the broader political or social contexts in specific jurisdictions, relevant for a deeper understanding of the interplay between law, society, and climate change.

[26] Martin Loughlin, 'The Constitutional Imagination' (2015) 78 Modern law review 1, 19.
[27] Ran Hirschl, *Comparative Matters: The Renaissance of Comparative Constitutional Law* (Oxford University Press 2014) 235.

3. Future Research Directions

The findings of this dissertation reveal both the breadth and complexity of constitutional climate adjudication, underscoring the need for further study in several related areas. Building upon this thesis' insights, future enquiries could aim to deepen scholarly understandings of constitutional adjudication in climate cases, addressing its legal, institutional, and scientific dimensions in a more holistic manner.

Future research could delve into existing doctrinal controversies in constitutional climate cases, building on the challenges identified in this thesis. For example, research could expound upon the extraterritorial effects of a state's greenhouse gas emissions on the constitutional rights of foreign populations. Scholars might conduct comparative analyses of jurisdictions that have taken differing stances on extraterritorial harm, exploring whether and how courts can extend domestic constitutional protections to individuals who are not under their territory's immediate jurisdiction. Similarly, scholars might consider the causal linkages between state action and rights violations associated with specific climate events - floods, wildfires, droughts - illuminating how the judiciary weighs scientific probabilities in establishing responsibility for climate-induced harms.

Furthermore, legal scholars and policymakers could engage more directly with prospective legislative reforms aimed at clarifying or streamlining the doctrinal sticking points revealed by climate cases. For instance, in federal systems, clearer statutory delineations of national and subnational responsibilities around climate change could help avoid jurisdictional disputes. Other examples might include revisiting standing requirements by legislative means -

e.g., allowing for actio popularis or broadening the definition of 'affected parties' in climate-related disputes - or studying the potential implications of constitutional amendments setting clear goals of climate action. By advancing legislative and constitutional reforms, policymakers can reduce uncertainty for judges, strengthen checks on legislative authority, and promote meaningful climate governance that aligns with constitutional values.

Future research agendas may also build upon theories of articulated governance,[28] multi-institutional[29] or collaborative constitutionalism,[30] to examine how courts can best cooperate with legislatures, executives, and independent agencies around climate governance. This includes studying the role of technical commissions (e.g., independent climate agencies) that advise both courts and legislatures, ensuring that judicial engagement with climate disputes benefits from expert insights and remains conscious of complex administrative dynamics and constraints.

Additionally, exploring the needs of multi-level governance - where local, regional, national, and international institutions play a role - could highlight best practices for articulating responsibilities across tiers of government. Comparative studies might focus on how certain federations or confederations manage to assign climate responsibilities coherently, thereby reducing the doctrinal complexity facing courts in jurisdictional disputes.

Finally, scholars from law, climate science, economics, and beyond could collaborate to establish robust methods of integrating best available science into judicial reasoning without

[28] Waldron (n 23) 62–71.
[29] Gabrielle Appleby, Vanessa MacDonnell and Eddie Synot, 'The Pervasive Constitution: The Constitution Outside of the Courts' (2020) 48 Federal Law Review 437.
[30] Aileen Kavanagh, *The Collaborative Constitution* (Cambridge University Press 2023).

overstepping the judiciary's institutional role. This may involve developing guidelines for how courts assess and weigh IPCC findings, the uncertainties of climate models, or evolving climate targets - for example drawing on the approach followed by the German Federal Constitutional Court in *Neubauer*.[31]

Interdisciplinary work could also help delineate where scientific expertise ends and normative, constitutional interpretation begins in adjudicating specific disputes. By clarifying these boundaries, researchers could offer pragmatic frameworks for courts to address climate disputes confidently yet humbly, reinforcing constitutional principles while recognising the multifaceted nature of climate governance.

4. A Humble Path Forward

Climate change pushes the boundaries of our constitutional imagination,[32] confronting courts and constitutional scholars with complex dynamics of time, space, polycentricity, and multivalence, and forcing them to consider their implications for understandings of vertical and horizontal governance, fundamental rights, standing, justiciability, and remedies, among other concept of constitutional theory and practice.

While climate change may be the first problem to present such complex and disruptive dynamics, it is unlikely to be the last. Climate change is here to stay and so are the novel understandings of constitutional adjudication that evolve in response to it. Even beyond climate disputes, the insights gained from these cases - about humility and complexity, evolving doctrines,

[31] *BvR 2656/18/1*, *BvR 78/20/1*, *BvR 96/20/1*, *BvR 288/20* (n 5) paras 236–9.
[32] Loughlin (n 26) 1.

and multi-level governance - hold broader relevance for future realities that similarly challenge the conceptual repertoire of constitutional law.[33]

Constitutional law scholarship is thus presented with an unprecedented opportunity to reflect on the core values and institutions at the foundation of the field in a context where global phenomena increasingly demand constitutional law activity around the world. Confronting climate change through robust, conscious, and context-sensitive adjudication not only helps address the immediate problem; it also prepares us to handle the complex and "wicked" problems yet to come. Issues of emerging technologies, pandemics, or other global threats will likely share many attributes with climate challenges: long timelines, uncertain science, transnational effects, and the need for concerted action across sectors and scales.

The insights presented in this thesis - on both the limitations of established constitutional doctrines and the possibilities for adaptation in climate adjudication - can be extended to other domains where constitutional courts face similarly complex governance dilemmas. By illuminating where existing concepts fall short and how courts might approach the need for adaptation, this dissertation highlights a more general story: one about the role of constitutional courts in the governance of complex problems.

By incorporating the reality of climate change into the system and values of constitutional governance, this thesis has sought to raise awareness about existing challenges facing courts in climate disputes, but also to manage expectations of the limited role of adjudication in the

[33] J Benjamin Hurlbut, Sheila Jasanoff and Krishanu Saha, 'Constitutionalism at the Nexus of Life and Law' (2020) 45 Science, Technology, & Human Values 979, 985.

context of climate change. Furthermore, the contribution of this thesis is set on the firm belief that climate change requires evolution of legal doctrines in response to challenges, rather than emergency breaks in the face of a crisis or 'emergency'.[34] In that sense, I reject the idea that the constitutional edifice needs to be suspended in order to be preserved.[35]

In my view, climate change invites us to adapt and transition, and to develop understandings of constitutional frameworks consistent with a new physical reality characterised by change instead of stability. In this context, this thesis shows that climate change - far from a temporary emergency - represents a permanent reality driving a legal transition in constitutional adjudication, testing the limits of existing doctrines and demanding novel responses. By approaching this transition with humility, courts might uphold constitutional principles and meaningfully engage with complex novel realities without overstepping their role in constitutional governance.

[34] Jocelyn Stacey, 'The Public Law Paradoxes of Climate Emergency Declarations' (2022) 11 Transnational Environmental Law 291.
[35] Martin Loughlin, *Against Constitutionalism* (Harvard University Press 2022) 153–8.

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