

1. Title: Uncovering Causal Pathways of Polarization of Climate Change Attitudes towards Climate Policy: The Role of Government and Public Trust

2. List of Applicants

Applicant: Lourens Waldorp, Associate Professor, Psychological Methods, FMG, University of Amsterdam. waldorp@uva.nl

Applicant: Vítor V. Vasconcelos, Assistant Professor, Computational Science, FNWI, University of Amsterdam. v.v.vasconcelos@uva.nl

Collaborator: Sara Constantino, Assistant Professor of Environmental Social Sciences, Doerr School of Sustainability, Stanford University.

3. Societal Relevance (194/200 words): Climate change mitigation demands transformational policies that require broad societal backing, including those **stimulating the energy transition**; however, polarization among elites and recent manifestations of affective polarization among the public hinder the deployment of such policies [1,2]. This project investigates **how government interventions, personal experiences, and media coverage** of climate events **causally influence** polarization, which is crucial for designing **effective climate policies** and communication strategies.

We will specifically examine factors such as perceived government efficacy and trust impact support for **energy-transition related climate policies**, including **renewable energy adoption and energy subsidies**. Uncovering these mechanisms helps policymakers and communicators develop interventions that reduce polarization, enhance trust, and foster social cohesion (e.g., [3]), facilitating the **implementation of the necessary energy transition and climate actions**. This contributes directly to achieving **SDG 7 (affordable and Clean Energy)**, **SDG 13 (Climate Action)**, and **SDG 16 (Peace, Justice, and Strong Institutions)** by promoting inclusive governance and resilient energy policy frameworks, essential for sustainable prosperity [4]. We will leverage our networks to cooperate with policymakers (e.g., *Sociaal Cultureel Planbureau*, *PBL*, and Ministry of General Affairs), and we will organize a workshop at IAS to bring them together and disseminate our findings.

4. Scientific Relevance (187/200 words): Current research has focused on the political elite [5], issue-based, and affective polarization [6], but a knowledge gap remains regarding how **government interventions** and **media communication** contribute to public opinion formation and polarization regarding climate policy. Previous studies have identified personal values, political ideology, and trust in government as central to climate policy support [7]. We build on these findings to uncover the **causal relationships** between these factors and climate policy support.

Employing advanced **causal discovery algorithms**, particularly variations of the Fast Causal Inference (FCI) method [8], we will analyze an extensive longitudinal dataset (N>20,000, 5 waves) to dissect the causal pathways through which government interventions, specifically after large disasters, and media communication affect polarization in climate change attitudes and support for the energy transition. We analyze the impact of government interventions and the role of media separately and in combination, leveraging invariant causal relations among events [9]. We will clarify whether weather and media events contribute to **enduring polarization or short-term shifts in public opinion**.

We contribute to environmental psychology, political science, and computational science with new models of public opinion formation and long-term behavioral change.

5. Contribution to the aims and success indicators of ENLENS (280/300 words): This project addresses how societal divisions and information dissemination impact the **support for sustainability policies**, particularly those related to the energy transition. Uncovering the causal mechanisms driving polarization contributes to

developing strategies that promote social cohesion, public acceptance, and **effective climate action**, aligning closely with the ENLENS objective of interdisciplinarity and societal impact.

A. The long-term goal of this project is to gain insight into the mechanisms of finding **support for sustainable activities and energy transition policies in society**. After the proposed project, we have three natural follow-ups: (i) Since the data we have currently is from the US, we will design a similar **study for the Netherlands**.

(ii) We want to **involve more stakeholders**, like the city council, energy companies, and national policymakers. (iii) Apply for larger grants to ensure continuity (e.g., Horizon Europe, NWO).

B. In this project we bring together several institutes at the UvA, all, in one way or another, involved in sustainability: Seven, Polder, Institute for Advanced Study, Psychological Methods Lab, and Computational Science Lab, strengthening interdisciplinary cooperation on sustainable prosperity and the energy transition.

C1. Collaboration with external stakeholders: We will use the project's results to connect with ongoing partnerships with the *Sociaal Cultureel Planbureau* and the Ministry of General Affairs and relevant stakeholders in energy policy. The project will serve as a stepping stone to larger collaborations and future applications for NWO/NWA grants.

C2. Links with education: We will incorporate case study and methodology into the new MSc Complex Systems and Policy, specifically in the "Complex Systems" course and/or "Model-based decision-making."

C3. Dissemination: We will disseminate findings through high-impact peer-reviewed journals and international conferences, and we will organize an interdisciplinary workshop at IAS.

6. Budget:

Faculty of Science (FNWI) budget: €15,000. **Justification:** Research assistant (support data processing, causal discovery analyses, and preparation of dissemination materials), Research Visit (collaboration with Dr. Constantino at Stanford University and extend internationalization with research visit of the UvA's PhD to the US), open access publications.

Faculty of Social and Behavioural Sciences (FMG) budget: €15,000. **Justification:** Research assistant (data interpretation, model validation, and integration of psychological methods), Workshop organization (with policymakers, academics, and other stakeholders, speaker fees, travel expenses, materials, catering), Teaching buyout.

References

1. Iyengar, S., et. al. (2019). *Annual Review of Political Science*, 22, 129–146.
2. Hartevelt, E. (2021). *Electoral Studies*, 71, 102332.
3. Chambon, M., et al. (2023). *British Journal of Social Psychology*, 62(1), 302--321.
4. Klein, E. (2020). *Why We're Polarized*. Simon & Schuster.
5. Wilson, A. E., et al. (2020). *Current Opinion in Behavioral Sciences*, 34, 223--228.
6. Vasconcelos, V. V., et al. (2021). *Proceedings of the National Academy of Sciences*, 118(50), e2102153118.
7. Drews, S., & van den Bergh, J. C. J. M. (2016). *Climate Policy*, 16(7), 855–876.
8. Spirtes, P., et al. (2000). *Causation, Prediction, and Search* (2nd ed.). MIT Press.
9. Waldorp, L., et al. (2024). *British Journal of Mathematical and Statistical Psychology*, 2(1), 1-38.