

Institution: University of Oxford		
Unit of Assessment: 30 - Philosophy		
Title of case study: The ethics of climate change: philosophy and international policy		
Period when the underpinning research was undertaken: October 2000 to September 2014		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): John Broome	Role(s) (e.g. job title): White's Professor of Moral Philosophy	Period(s) employed by submitting HEI: 1/10/2000 to 30/09/2014
Period when the claimed impact occurred: 1 August 2013 – 31 July 2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact (indicative maximum 100 words)		
<p>Broome drew upon his research, on the concept of responding to climate change using policies that require no sacrifice and the ethical foundations of economics, in his role as an author of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. He was the principal author of several sections of the report, and helped to draft two of its highly influential Summaries for Policymakers. He was involved in negotiating with government delegations to produce versions of the summaries that were officially endorsed by virtually all the world's governments. Moreover, this report had and continues to have a major impact on governments' climate policies. It formed the scientific basis of the Paris Agreement reached in 2015, and continues to guide governments' policies under the Agreement.</p>		
2. Underpinning research (indicative maximum 500 words)		
<p>Broome's seminal book <i>Weighing Lives</i> (R1) was the culmination of decades of research into the value of human life. It considers how we should approach decisions that require people's lives to be weighed against one another or against other goods. These include decisions that may lengthen or shorten people's lives, and decisions that affect the world's future population – the number of lives that will be lived in the future. It is a book of moral philosophy, but it draws on formal methods from economics to develop a theoretical basis for making these decisions. Climate policy is a prime example of a decision problem where lives are weighed, since climate change will kill many people and will also affect the future population. Broome applies his work on weighing lives to climate change in Chapters 9 and 10 of <i>Climate Matters</i> (R4), in 'Climate change: life and death' (R6) and elsewhere.</p> <p>Much of Broome's research has probed the ethical foundations of economics. Some of his arguments are summarized in his 'Why economics needs ethical theory' (R3). In the context of climate change, the view that ethics underlies economics is explicitly adopted by the highly influential <i>Stern Review of the Economics of Climate Change</i>, for which Broome wrote a paper (R2). However, William Nordhaus and Martin Weitzman, in their published reviews of the <i>Stern Review</i>, denied that economics depends on ethics. Their opinion is shared by many economists. Broome responded to their reviews by showing how ethical assumptions always underlie the economics of policy, even when the economists do not notice them. To draw public attention to this central feature of the economics of climate change, he placed an article, 'The ethics of climate change' in the popular magazine <i>Scientific American</i>, and followed it up with a fuller argument in chapter 6 of his book <i>Climate Matters</i> (R4).</p> <p>More recently, Broome has been propagating a new view about how the international community should respond to climate change. For decades, the United Nations process has</p>		

appealed to the world's governments and their people to sacrifice some of their wellbeing for the sake of improving the lives of future people. This appeal has failed. The behaviour of governments has shown that they will not demand sacrifices from their people. Broome reminds us that the economic theory of externalities demonstrates that sacrifice is not necessary: climate change can be mitigated in a way that demands no sacrifice from anyone. Broome argues that the international political process should now aim for a solution to climate change that does not demand sacrifices. This argument appears in chapter 3 of *Climate Matters* (R4) and in Broome's Tanner Lecture (R5) and is more thoroughly developed in several subsequent papers.

Broome's widely-read book *Climate Matters* (R4) draws together his work on these three aspects of climate change and many others too.

3. References to the research (indicative maximum of six references)

- R1. [Authored Book] Broome, John. *Weighing Lives*, Oxford University Press, 2004. DOI: [10.1093/019924376X.001.0001](https://doi.org/10.1093/019924376X.001.0001)
- R2. [Chapter] Broome, John. 'Valuing policies in response to climate change: some ethical issues', contribution to the work of *The Stern Review of the Economics of Climate Change*, Nicholas Stern, Cambridge University Press, 2007. https://webarchive.nationalarchives.gov.uk/20120704151732/http://www.hm-treasury.gov.uk/d/stern_review_supporting_technical_material_john_broome_261006.pdf and reprinted in *Global Justice*, eds Tom Campbell, Christian Barry and Holly Lawford-Smith, Ashgate Publishing, 2012 <https://doi.org/10.4324/9781315254210>
- R3. [Chapter] Broome, John. 'Why economics needs ethical theory', in *Arguments for a Better World: Essays in Honor of Amartya Sen. Volume 1*, edited by Kaushik Basu and Ravi Kanbur, Oxford University Press, 2008, pp. 7– 14. DOI: [10.1093/acprof:oso/9780199239115.003.0002](https://doi.org/10.1093/acprof:oso/9780199239115.003.0002)
- R4. [Authored Book, available on request] Broome, John. *Climate Matters: Ethics in a Warming World*, W. W. Norton & Co, 2012. ISBN: 9780393063363
- R5. [Chapter, available on request] Broome, John. 'The public and private morality of climate change', *The Tanner Lectures on Human Values: Volume 32*, (2013), pp. 3–20. ISBN: 9781607812616.
- R6. [Chapter, available on request] Broome, John. 'Climate change: life and death', in *Climate Change and Justice*, edited by Jeremy Moss, Cambridge University Press, 2015, pp. 184–200. ISBN: 9781107093751.

4. Details of the impact (indicative maximum 750 words)

Impact of philosophical expertise on the Intergovernmental Panel on Climate Change (IPCC)

The Intergovernmental Panel on Climate Change (IPCC) is an organisation within the United Nations family. Its members are the governments of almost every country in the world. It holds a Nobel Peace Prize. It is not an academic body, so its activities and potential impact lie outside academia; the IPCC express the international community's awareness of climate change. Broome was a Lead Author of its 2014 report, known as 'AR5'.

IPCC reports are written cooperatively, so Broome's contributions are pervasive. He was solely responsible for nearly all of sections 3.4 to 3.6.1 of Working Group 3 (E12, E1 pp. 220-8). These sections are guided by his research: starting from basic principles, they set out the ethical foundations that underlie valuations in economics, including cost-benefit analysis. Some of Broome's particular research is reflected in Box 3.3 (E1 p. 226) on the value of human life, and Box 3.4 (E1 p. 227) on the idea of responding to climate change using policies that require no sacrifice. Dr Ravendra Pachauri, Chair of the IPCC, wrote:

Whenever I discuss the AR5 and its Synthesis Report . . . it is with great pride that I mention to my audience that the AR5 had the enormous benefit of a distinguished philosopher [Professor John Broome] being part of the Core Writing Team. Also, that your active involvement in that process kept all of us honest and focused on larger issues rather than narrow scientific triviality. (E5)

Broome also contributed to the Summary for Policymakers of Working Group 3, which is explicitly agreed by governments, and widely used by policymakers and others. This work included three days of intense negotiations with government delegates (E2, pp. 4-5; E3); the intensity of this negotiation shows the importance the governments attached to the text. Among Broome's achievements was that all governments have now agreed that 'many areas of climate policymaking involve value judgements and ethical considerations' (E1, p. 5). Previously, some governments had refused to recognise that climate change has ethical aspects. Furthermore, all governments have now also agreed that in economic valuations 'distributional weights, which take account of the different values of money to different people, should be applied to monetary measures of benefits and harms' (E1, p. 5). This marks a radical shift in the methods of decision making to be adopted by governments.

Broome was also an author of the IPCC's Synthesis Report. Broome was able to carry through into section 3.1 (E4, pp. 76-7) much of the material on ethics from the Summary for Policymakers of Working Group 3. He also participated in organising and drafting all the text, as well as negotiating it with government delegates.

Influenced the 2015 Paris Agreement and subsequent policies of governments

The IPCC works in cooperation with the United Nations Framework Convention on Climate Change (UNFCCC). The IPCC's AR5 was timed to provide the scientific basis of discussions at the UNFCCC's 2015 meeting in Paris. Christiana Figueres, the UNFCCC's Executive Secretary, noted that 'AR5 will inform UNFCCC negotiations by providing objective evidence and options for pathways forward' (E2, p. 4). UN Secretary-General Ban Ki-Moon said:

This report gives a major push . . . to success at Paris next year. . . Science has spoken. There is no ambiguity in their message. Leaders must act. (E6)

The government of the UK published in September 2014 a 'vision document' setting out its ambition for the Paris meeting. (E7) This document quotes the AR5 frequently. The UK Parliament held a debate on the AR5 on 20 November 2014 (E8). Closing the debate, Amber Rudd, then Parliamentary Under-Secretary for Energy and Climate change, said:

The IPCC's fifth assessment report provides an unparalleled assessment of the latest climate science. There is no comparable process in terms of scope, rigour, transparency or level of Government engagement. . . Following the IPCC's report . . . there is no doubt that we need to take action. . . In the UK, we are taking action. (E8, column 172WH-173WH)

The Agreement reached at the 2015 meeting set the programme for international climate policy in future decades. Governments agreed to formulate policies for mitigation (nationally determined contributions, NDCs) and national adaptation plans (NAPs). These policies are strongly influenced by the IPCC. Of 183 NDCs registered, 162 refer to the IPCC, including 29 that refer explicitly to AR5. Of the 18 NAPs registered, 16 refer to the IPCC, including 12 that refer explicitly to AR5. (E9) For example, the NDCs of Laos, South Africa and Japan (dated 2020) say respectively:

The Government of Lao PDR intends to implement policies that support the long term goal of limiting global GHG emissions in line with the objectives of the UNFCCC and the findings of the IPCC's 5th Assessment Report. (E10, p.4)

South Africa's shift from a "deviation from business-as-usual" commitment to a peak, plateau and decline GHG emissions trajectory range in its NDC fully aligns with the IPCC AR5 future global carbon budget. (E11, p. 8)

Japan's INDC [Intended Nationally Determined Contribution] is consistent with the long-term emission pathways up to 2050 to achieve the 2 degrees Celsius goal as presented in the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. (E13)

5. Sources to corroborate the impact (indicative maximum of 10 references)

- E1. Extracts of Report - IPCC, *Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 2014. Full report available at:
https://www.ipcc.ch/site/assets/uploads/2018/02/ipcc_wg3_ar5_full.pdf
- E2. Report of the IPCC document, showing Broome's contribution to its implementation: 'Summary of the twelfth session of Working Group III of the Intergovernmental Panel on Climate Change (IPCC) and the thirty-ninth session of the IPCC: 7-12 April 2014', *Earth Negotiations Bulletin*, 12:597 (2014).
- E3. Summary of Broome's philosophical contributions to the IPCC. 'A philosopher at the IPCC', *The Philosophers' Magazine*, 66 (2014), pp. 10-16. A shorter version is on the blog of the *London Review of Books* (8 May 2014) at:
<http://web.archive.org/web/20190926010547/https://www.lrb.co.uk/blog/2014/may/at-the-ipcc>
- E4. Extract of a synthesis report from the IPCC, used as a guide for busy policymakers: IPCC, *Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change*. Full report available at:
https://www.ipcc.ch/site/assets/uploads/2018/02/SYR_AR5_FINAL_full.pdf
- E5. Corroborating email from Dr. Ravendra Pachauri, Chairman of the Intergovernmental Panel on Climate Change 2002-2015, noting John Broome contributions to the IPCC, 3 March 2017.
- E6. Opening report from UN Secretary General Ban Ki-moon noting importance of IPCC document: 'Opening remarks at launch of Intergovernmental Panel on Climate Change Synthesis Report', 2 November 2014.
<https://www.un.org/sg/en/content/sg/speeches/2014-11-02/opening-remarks-launch-intergovernmental-panel-climate-change>
- E7. Report from HM Government noting influence in UK of IPCC: *Paris 2015: Securing our prosperity through a global climate change agreement*, 2014.
<https://www.gov.uk/government/publications/paris-2015-securing-our-prosperity-through-a-global-climate-change-agreement>
- E8. Record of debate of the IPCC in the UK Parliament: Daily Hansard - Westminster Hall 20 Nov 2014.
<https://publications.parliament.uk/pa/cm201415/cmhansrd/cm141120/halltext/141120h0001.htm>
- E9. List of references to IPCC on NDCs and NAPs registered with UNFCCC (2015-2020) on <https://www4.unfccc.int/sites/NAPC/Pages/national-adaptation-plans.aspx> and <https://www4.unfccc.int/sites/ndcstaging/Pages/All.aspx>
- E10. Report from Lao People's Democratic Republic on their use of IPCC for climate policy, 30 September 2015: *Intended Nationally Determined Contribution*.
<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Lao%20People%27s%20Democratic%20Republic%20First/Lao%20PDR%20First%20NDC.pdf>
- E11. Report of South Africa's Intended Nationally Determined Contribution (INDC), 1 November 2016.
<https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/South%20Africa%20First/South%20Africa.pdf>

E12. Letter from Coordinating Lead Author 30 December 2020 confirming John Broome's contribution to Boxes 3.3 and 3.4 and Sections 3.4 to 3.6.1, apart from some parts of 3.5 of the IPCC.

E13. Report from Japan on the influence of the IPCC on their climate policy: 'Submission of Japan's Nationally Determined Contribution', 31 March 2020.

[https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Japan%20First/SUBMISSION%20OF%20JAPAN'S%20NATIONALLY%20DETERMINED%20CONTRIBUTION%20\(NDC\).PDF](https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Japan%20First/SUBMISSION%20OF%20JAPAN'S%20NATIONALLY%20DETERMINED%20CONTRIBUTION%20(NDC).PDF)