

It's not too late to do the right thing: Moral motivations for climate change action

Paul G. Bain

University of Bath, UK

Renata Bongiorno

University of Exeter, UK

Correspondence:

Please direct correspondence to Dr Paul Bain at p.bain@bath.ac.uk.

Conflict of interest

The authors declare no conflicts of interest.

Author copy. To appear in Wiley Interdisciplinary Reviews: Climate Change

Abstract

While it is too late to avert some dangerous consequences of climate change, it is not “all-or-nothing” and our actions can still make a difference. Building on social psychology research showing the importance of seeing one’s group as moral, one reason people act on climate change is to help create a more moral and caring society. Considering climate change action through this lens gives rise to several challenges, including how people respond to moral threats, who has moral standing as advocates, the consequences of promoting a moral cause through “immoral” actions (e.g., breaking the law), and moral “blindspots” where some emitting behaviours are excluded from scrutiny. Reviewing social psychological bases for these issues suggests potential responses to these challenges, including the importance of engaging people with diverse views and backgrounds (e.g., through citizens’ assemblies), advisory personal carbon budgets, and broad-based policies that aim to secure the social wellbeing of communities as well as the protect the environment (e.g., a Green New Deal). Encouragingly, a recent study suggests that many people are more ready than we might assume to accept the types of changes urgently needed.

We cannot avert dangerous climate change. It is already having damaging consequences, which will worsen as global temperatures increase (IPCC, 2018). Even keeping warming to <1.5°C seems a faint hope, requiring major commitments and action within the next decade (IPCC, 2018) at a time when many developed countries are falling short on more moderate existing commitments (<https://climateactiontracker.org/countries/>). The structural barriers sometimes seem insurmountable, with some arguing that addressing climate change requires fundamental reshaping of globally dominant economic and social systems (Klein, 2015; Monbiot, 2017).

Yet recent high-profile public protest movements, especially in Europe (School Strike for Climate, Extinction Rebellion), give cause for hope that the public can pressure governments to enact the broader regulatory and structural changes needed to address climate change. While these movements place a strong emphasis on facing up to the reality of climate change, lessons from decades of climate change advocacy show us that not everyone is convinced or concerned about climate change despite the evidence (e.g., Hornsey, Harris, Bain, & Fielding, 2016; McCright, Dunlap, & Marquart-Pyatt, 2015), and many people are more concerned about other issues (Lorenzoni & Pidgeon, 2006; United Nations, 2018). This reinforces the need to engage people using different approaches – connecting climate change to their other concerns.

One prominent approach to connect climate change to other concerns is to highlight the “co-benefits” of climate action for society. While the economic and health co-benefits are most obvious, here we focus on what might be seen as a more ephemeral co-benefit – creating a more moral and caring (“benevolent”) society (Bain, Hornsey, Bongiorno, & Jeffries, 2012; Bain, Milfont, Kashima, & et al., 2016). This co-benefit is more important than it might seem, but gives rise to particular challenges for addressing climate change for which we discuss possible solutions.

In focusing on morality co-benefits, our emphasis is on psychological factors, not the philosophical case for considering climate change as a moral issue. Our approach complements reviews focusing on other moral considerations in climate change (e.g., Gardiner, 2006; Markowitz & Shariff, 2012), but emphasises people’s beliefs about the morality of themselves and the groups they belong to – moral self- and ingroup-stereotypes – and their links to climate change action.

Addressing climate change to create a more moral and caring society

Social psychology helps explain motivations to create a more moral and caring society. People are particularly concerned that their groups have high moral standing (Leach & Brambilla, 2014; Leach, Ellemers, & Barreto, 2007). Yet many people believe that society is becoming *less* moral and caring over time (Bain, Kroonenberg, & Kashima, 2015; Kashima et al., 2009; Kashima et al., 2011). These people are especially concerned with addressing this decline, supporting actions and policies intended to restore community bonds (unless they believe society is incapable of changing; Kashima et al., 2009). Accordingly, the desire to create a more moral and caring society motivates action across diverse social and political issues (Bain, Hornsey, Bongiorno, Kashima, & Crimston, 2013).

This includes climate change. The belief that addressing climate change will create a more moral and caring society was a consistent motivator of climate change action around the world, including for those unconvinced or unconcerned about climate change and for the political left/right (Bain et al., 2012; Bain et al., 2016). Communicating these morality co-benefits were equally or more motivating of climate change action as conveying the reality of climate change (Bain et al., 2012; Bernauer & McGrath, 2016). This was particularly so for “environmental citizenship” – actions intended to place pressure on governments to enact structural and regulatory changes, such as voting, petitions, joining/donating to environmental groups, and writing to politicians/newspapers.

The importance of creating a more moral and caring society is consistent with the societal changes some environmentalists claim are necessary to address climate change. As examples, Jackson (2017) and Monbiot (2017) argue that we need to redefine our notions of prosperity and the good life away from individual (material) gain towards contributing positively to our community.

Challenges to creating a more moral society through climate change action

Focusing on the morality co-benefits of climate action raises some challenges, and perhaps paradoxes, that need consideration. We first outline these challenges, then propose potential ways to meet them.

Responding to a moral threat

When people are told that socially prevalent and accepted lifestyles are harmful due to their environmental impact (e.g., eating meat, plane travel, car ownership), this can pose a threat to their sense of their group as moral. Two responses to moral threats are typical (Gausel, Leach, Vignoles, & Brown, 2012). One is to focus on *repairing* the damage ingroup actions have caused. The other is *defensiveness* to avoid or conceal the moral failure. Defensiveness can take many forms, but for climate change it could include undermining the moral credentials of “accusers” by highlighting their own moral failings and hypocrisy (e.g., that activists drive cars and fly), or describing them “fascistic” in trying to control people’s lives (Griffin, 2019, April 19).

The decision to repair or defend is related to its perceived emotional consequences (Gausel et al., 2012; Gausel, Vignoles, & Leach, 2015). Gausel et al. (2012) demonstrated that if people believe they will be rejected due to their group’s moral failure, their feeling of rejection leads to defensiveness. However, people are more likely to act to repair the harm when they feel shame as a result of accepting a genuine failure in their group’s behaviour.

Moral standing

Advocates for a cause are expected to act in ways consistent with that cause. Although environmentalists act in more pro-environmental ways (Dono, Webb, & Richardson, 2010), a lack of viable green options for transportation, housing, and food makes it difficult for many people to adopt completely sustainable lifestyles. In focusing on morality, this implies that almost everyone in developed societies falls morally short by engaging in environmentally damaging activities. This raises a potential paradox – how can someone credibly ask others to act morally when they are falling short themselves?

If moral purity is required for moral standing, then children can be excellent advocates. Relative to adults who are seen as “moral agents” (having capacities to perform moral actions), children are seen more as recipients of moral actions (“moral patients”) and thus less open to moral criticism of their own actions (H. M. Gray, Gray, & Wegner, 2007; K. Gray & Wegner, 2009). This may be part of the power of the school strike for climate. Yet we cannot leave it to children to make the case – adults also need to show moral agency.

We should challenge the idea that being an advocate requires moral purity, because actually being *less* morally pure in the past but changing behaviour can lend credibility when advocating change (Attari, Krantz, & Weber, 2019). As people are more open to constructive criticism from ingroup members (Hornsey & Imani, 2004), those who have had high emissions lifestyles are more likely to be able to influence those “like them” to adopt more sustainable practices. But this means advocates may need to challenge their own conceptions of moral purity – can they overcome scepticism about commitments made by those they believe are most at fault?

Engaging in “immoral” actions for a moral cause

We use laws to enforce moral behavior, so breaking laws to promote a more moral society might seem oxymoronic. Protests involve actions considered immoral in everyday life – we punish people for blocking roads or not attending school. Accordingly, a non-violent

Extinction Rebellion climate change protest in London, UK, in April 2019 resulted in 1130 arrests and 69 charges (Metropolitan Police, 2019, April 25). In protestors' defense, a moral conviction is a clear reason to confront group norms (Hornsey, Majkut, Terry, & McKimmie, 2003), and civil disobedience can be a response to *authorities* who have failed to act morally (Tausch et al., 2011). Non-violent demonstrations of anger towards authority can actually be motivated by a desire for problem-solving (Weber, 2004), and their moral legitimacy is increased when they have high public support and positive responses from those in power (as happened in the UK; edie, 2019, April 24).

However, public concern about protestors breaking the law is linked to a legitimate fear. If engagement with authorities does not lead to desired changes, anger can turn into contempt. Contempt can lead to dehumanization and moral exclusion (Becker & Tausch, 2015), placing its targets outside the realm of moral concern and this provides a basis for more extreme or violent actions (Staub, 1990). Those who have failed our moral standards are seen as least worthy of moral concern (e.g., criminals; Crimston, Bain, Hornsey, & Bastian, 2016; Crimston, Hornsey, Bain, & Bastian, 2018). Thus, acting in ways that give greater credence to being labeled immoral (e.g., protestors being violent) is unlikely to generate wider support for the urgent changes needed.

Moral assumptions and “blindspots”

Some environmentalists may have assumptions about the morality of some behaviours that lead them to dismiss effective solutions – moral “blindspots”. An example is having fewer children, referred to as “...*the great unmentionable of the campaign for more environmentally friendly lifestyles*” (Williams, 2010, p. R222). Wynes and Nicholas (2017) identified that, for an average US citizen, not having a child has an annual impact on emissions at least 40 times greater than avoiding a transatlantic flight, not using cars, using green energy, or a vegan diet, but both academic and popular responses have strongly implied

that this strategy is less morally acceptable than others. In academia, it was claimed to overlook proper attention to human rights (Pedersen & Lam, 2018), and claimed that public resistance based on conceptions of the good life were justified for “...*good reason*: high-impact lifestyle choices require ongoing commitment to forego benefits that *society generally sees as desirable*” (Stern & Wolske, 2017; p. 2, italics added). In the popular press, having fewer children to address climate change has been described as “...*a socially and morally bankrupt argument*” (cited in Brown, 2018, August 4), and having children defended as a “*profoundly human act*” (Taylor, 2019, February 27).

There are legitimate moral considerations for any emissions-reduction strategy policy (e.g., implementation through incentives or coercion), but this is less relevant to people’s personal decisions. Until personal carbon emissions are drastically reduced, each extra child requires food, clothing, shelter, and other resources/activities that increases carbon emissions, especially in industrialised countries. A decision to not have a child avoids carbon emissions for that child and any descendants, and reducing birth rates could account for 16-29% in reductions of global emissions by 2050 (O’Neill et al., 2010), although the extent of this reduction is disputed (Bradshaw & Brook, 2014).

But if the collective norm for environmentalists is to morally defend some high-emitting activities (e.g., having children), we should not be surprised when people apply similar defences to others (e.g., owning a car or flying). As a personal decision, choosing whether or not to have a child or a car is influenced by many considerations, of which carbon impact can be one (Wynes & Nicholas, 2018), and the choice not to have a child is one some people are already making (Hunt, 2019, March 12). If we are asking people to make dramatic changes in their personal lives, we should give them the information and agency to make decisions and be cautious about imposing our own moral views on those decisions.

This illustrates a broader point that people's visions of a moral society vary. For example, those on the political left (who tend to hold more pro-environmental values; Caprara et al., 2017) tend to give more moral consideration to fairness and avoiding harm, and less to obeying authority and being loyal to their group than those on the political right (Haidt, 2007). Moreover, instantiations of moral principles vary widely across contexts and cultures (Shweder, 1994), so the vision of the moral society we want to create through addressing climate change should respect and integrate diverse community conceptions of morality.

Addressing these challenges

How can we address these challenges for creating a more moral and caring society through climate change action? Here we offer some (non-exhaustive and non-exclusive) suggestions. We acknowledge that these are biased towards democratic contexts, and several are already being considered/implemented in some places.

Engage positively with people unconvinced about climate change

It may be tempting for advocates to ignore or ostracise those who doubt climate change, but moral threat research shows that rejection motivates stronger defensiveness and resistance. Instead, emphasise that climate change is a collective failure that all in society have contributed to – in religious terms, we are all sinners but we can work towards redemption. This can broaden moral standing, reduce accusations of moral hypocrisy and the need for moral purity, and would reduce the burden on children to hold society to account.

Citizens' assemblies

Citizen's assemblies empower a group reflecting a wide cross-section of society to learn about social issues to develop broadly acceptable solutions and policies. Collective decision making allows new norms to emerge because proposed solutions can come to be seen as valid and effective (Bongiorno, McGarty, Kurz, Haslam, & Sibley, 2016). Interacting

with people from different backgrounds also helps overcome moral blindspots and provides a prosocial outlet for addressing moral threat. The process also demonstrates a shared concern and openness to others, modelling a more cohesive and caring community.

How these assemblies are framed and led is important to their success. For example, Extinction Rebellion propose a citizens' assembly focused on "climate and ecological justice" (<https://rebellion.earth/the-truth/demands/>). While this focus on "justice" appeals to the political left, it can alienate the political right (Whitmarsh & Corner, 2017). Ecological justice is important, but given the urgent need for widespread support and action, a framing emphasising "protecting our communities" may be more effective in engaging both the left and right.

Advisory personal carbon budgets

An advisory personal carbon budget provides people with agency and choice in how they reduce their emissions. It does not substitute for broader regulation and structural changes needed to address climate change, but helps those who want to do the right thing make reductions and trade-offs consistent with their differing circumstances. Using a budget target consistent with their country's emission commitments, it allows people to calculate the emissions of major types of activities (and ideally their lower-carbon alternatives) to assist their decision-making. For example, substituting public transport for car travel is easier for city-dwellers than country-dwellers, but the latter could use their budget to identify offsets in areas less critical to them. It would focus on assisting major decisions with the greatest emissions impacts (e.g., transport and food for Europeans; Dubois et al., 2019), e.g., the emissions of buying a new electric vehicle every 5 years for the next decade compared to keeping their existing petrol car for that period. It could be adjusted periodically in line with new commitments and technologies.

This idea overlaps with carbon footprints, but there are differences. First, its focus is on informing future decisions, whereas carbon footprints usually focus on quantifying past behaviour. This difference opens new options for emissions reductions that can overcome blindspots. For example, knowing the carbon emissions of having children is useful for future decisions, but not once children exist (common online carbon footprint calculators do not include emissions from having children). By expanding the possible areas for emissions reductions it partially addresses the issue that what we choose to measure can render other things invisible (Paterson & Stripple, 2010).

This approach also differs from government-enforced personal carbon allowances, involving sanctions or trading, which have received varied public support and low political support (Corner, 2012, April 30; Jagers, Löfgren, & Stripple, 2010). Exceeding the advisory budget is not subject to formal sanctions, nor can unused budget be traded to others. Instead, promotion of these budgets would emphasize their role in being a good moral citizen contributing to a more moral society, and being under the budget could informally serve as a basis for pride or praise, as well as develop broader social norms about acceptable levels of emissions.

Continued commitment to non-violent action

Both those protesting for change and those in power can reduce the chance of non-violent protest escalating into more extreme actions and undermining moral bases for change. For activists, non-violent approaches are effective (Ackerman & DuVall, 2000), but more extensive immoral actions will undermine public support from those wanting a more moral society. Authorities can also help reduce the likelihood of escalation through genuine engagement, reducing the chance of anger transforming into contempt. One way is to deliver on expressed commitments (e.g., meeting/exceeding emissions targets) and implement viable policies to achieve future targets. Another is to not *just* delegate policy development to

citizen assemblies. Invitations for the powerless to develop programs can be a tactic of the powerful to stall change by shifting the policy-making burden (King, 2010/1968; pp. 143-147). Governments should act now where they can, e.g., implementing industrial emissions policies.

Integrate environmental, economic and social outcomes.

To garner the greatest public support, climate change policies should explicitly address social and economic outcomes to deliver valued co-benefits to society. This is a central promise, and challenge, of policies such as a “Green New Deal”. For example, in transitioning away from coal-based energy or eating meat, there should be economic and social initiatives for people in those industries who fear for their livelihoods and communities. Addressing climate change can provide opportunities to address longstanding social issues such as inequality or poverty (Klein, 2015; Zhenmin & Espinosa, 2019), enhancing its moral standing.

However, there is a psychological “catch”. Our recent work (Bain et al., under review) shows that people in both developed and developing countries see a tension between environmental and social sustainability – more attention to climate change and other environmental issues means *less* attention to achieving social benefits such as reducing inequality or improving education. Overcoming this belief could be a key challenge in gaining widespread support for integrative policies – either by convincing people that sustainable environmental and social outcomes are not really in tension, or demonstrating how these trade-offs can be minimised.

Are people ready to act?

Until low/no-emissions technologies are widely available, we need to consume less carbon intensive products and activities. This means making reductions in activities many already enjoy (e.g., owning cars and flying). People’s resistance to reducing these activities

may be a major hurdle to action, but some evidence suggests there may be greater support than might be assumed. In a US sample, most people supported reducing consumption (Markowitz & Bowerman, 2012). Moreover, cross-cultural research in 27 countries across six continents has identified that many people had moderate ideals for their lives, e.g., although a minority wanted to be completely happy and free, most people's ideals included sadness and restrictions on freedom (Hornsey et al., 2018). This suggests that many people are psychologically prepared for living in a world with limits.

Having moderate material aspirations suggests that people are open to alternative conceptions of prosperity or “the good life” that are not centred around material excess. Knowing that people are motivated to create a more moral and caring society – one conception of the “good life” – is consistent with the type of societal shift some argue is necessary to address climate change (Jackson, 2017; Monbiot, 2017). This involves moving towards a community-centred society where prosperity is found in relations with others, and where status and wellbeing are derived from our skills and efforts to contribute positively to those communities.

Political and economic structures have their own inertia and imperatives that resist rapid change, leading to our reservations about whether action will be widespread and quick enough to minimise the dangerous outcomes of climate change. However, psychologically at least, many people seem prepared to make the adjustments needed to address climate change, especially if it contributes to a more moral and caring society. The public may be closer to widespread action than we might assume.

References

- Ackerman, P., & DuVall, J. (2000). *A force more powerful: A century of nonviolent conflict*. New York, NY: Palgrave.
- Attari, S. Z., Krantz, D. H., & Weber, E. U. (2019). Climate change communicators' carbon footprints affect their audience's policy support. *Climatic Change*. doi:10.1007/s10584-019-02463-0
- Bain, P. G., Hornsey, M. J., Bongiorno, R., & Jeffries, C. (2012). Promoting pro-environmental action in climate change deniers. *Nature Climate Change*, 2(8), 600-603. doi:10.1038/NCLIMATE1532
- Bain, P. G., Hornsey, M. J., Bongiorno, R., Kashima, Y., & Crimston, D. (2013). Collective futures: How projections about the future of society are related to actions and attitudes supporting social change. *Personality and Social Psychology Bulletin*, 39(4), 523-539. doi:10.1177/0146167213478200
- Bain, P. G., Kroonenberg, P. M., Johansson, L.-O., Crimston, C. R., Milfont, T. L., Kurz, T., . . . Park, J. (under review). What do the Sustainable Development Goals mean to people around the world?
- Bain, P. G., Kroonenberg, P. M., & Kashima, Y. (2015). Cultural beliefs about societal change: A three-mode principal component analysis in China, Australia, and Japan. *Journal of Cross Cultural Psychology*, 46(5), 635-651.
- Bain, P. G., Milfont, T. L., Kashima, Y., & et al. (2016). Co-benefits of addressing climate change can motivate action around the world. *Nature Climate Change*, 6, 154-157. doi:10.1038/NCLIMATE2814
- Becker, J. C., & Tausch, N. (2015). A dynamic model of engagement in normative and non-normative collective action: Psychological antecedents, consequences, and barriers.

European Review of Social Psychology, 26, 43-92.

doi:10.1080/10463283.2015.1094265

Bernauer, T., & McGrath, L. F. (2016). Simple reframing unlikely to boost public support for climate policy. *Nature Climate Change*, 6, 680-683.

Bongiorno, R., McGarty, C., Kurz, T., Haslam, S. A., & Sibley, C. G. (2016). Mobilizing cause supporters through group-based interaction. *Journal of Applied Social Psychology*, 46, 203-215. doi:10.1111/jasp.12337

Bradshaw, C. J. A., & Brook, B. W. (2014). Human population reduction is not a quick fix for environmental problems. *Proceedings of the National Academy of Science*, 111, 16610-16615.

Brown, J. (2018, August 4). Why climate activists can't agree if we should be having fewer children. *The Independent*. Retrieved from www.independent.co.uk/environment/children-carbon-footprint-environment-climate-change-adoption-birth-pregnancy-a8469886.html

Caprara, G. V., Vecchione, M., Schwartz, S. H., Schoen, H., Bain, P. G., Silvester, J., . . . Vondráková, E. (2017). Basic values, ideological self-placement, and voting: A cross-cultural study. *Cross-Cultural Research*, 51(4), 388-411.

Corner, A. (2012, April 30). Personal carbon allowances - a 'big idea that never took off'. Retrieved from www.theguardian.com/sustainable-business/personal-carbon-allowances-budgets

Crimston, D., Bain, P. G., Hornsey, M. J., & Bastian, B. (2016). Moral expansiveness: Examining variability in the extension of the moral world. *Journal of Personality and Social Psychology*, 111(4), 636-653. doi:10.1037/pspp0000086

- Crimston, D., Hornsey, M. J., Bain, P. G., & Bastian, B. (2018). Toward a psychology of moral expansiveness. *Current Directions in Psychological Science*, 27(1), 14-19.
doi:10.1177/0963721417730888
- Dono, J., Webb, J., & Richardson, B. (2010). The relationship between environmental activism, pro-environmental behaviour and social identity. *Journal of Environmental Psychology*, 30, 178-186. doi:10.1016/j.jenvp.2009.11.006
- Dubois, G., Sovacool, B., Aall, C., Nilsson, M., Barbier, C., Herrmann, A., . . . Sauerborn, R. (2019). It starts at home? Climate policies targeting household consumption and behavioral decisions are key to low-carbon futures. *Energy Research & Social Science*, 52, 144-158.
- edie. (2019, April 24). How have key MPs responded to Greta Thunberg and the climate protests? Retrieved from www.edie.net/news/11/How-have-key-MPs-responded-to-Greta-Thunberg-and-the-climate-protests/
- Gardiner, S. M. (2006). A perfect moral storm: Climate change, intergenerational ethics and the problem of moral corruption. *Environmental Values*, 15(397-413).
- Gausel, N., Leach, C. W., Vignoles, V. L., & Brown, R. (2012). Defend or repair? Explaining responses to in-group moral failure by disentangling feelings of shame, rejection, and inferiority. *Journal of Personality and Social Psychology*, 102(5), 941-960.
doi:10.1037/a0027233
- Gausel, N., Vignoles, V. L., & Leach, C. W. (2015). Resolving the paradox of shame: Differentiating among specific appraisal-feeling combinations explains pro-social and self-defensive motivation. *Motivation and Emotion*, 40(1), 118-139.
doi:10.1007/s11031-015-9513-y
- Gray, H. M., Gray, K., & Wegner, D. M. (2007). Dimensions of mind perception. *Science*, 315, 619.

- Gray, K., & Wegner, D. A. (2009). Moral typecasting: Divergent perceptions of moral agents and moral patients. *Journal of Personality and Social Psychology*, 96(3), 505-520.
- Griffin, A. (2019, April 19). Sky News' Adam Boulton accuses climate protestors of 'fascistic disruption'. Retrieved from www.independent.co.uk/news/uk/home-news/extinction-rebellion-protests-sky-news-adam-boulton-climate-change-london-traffic-a8877921.html
- Haidt, J. (2007). The new synthesis in moral psychology. *Science*, 316, 998-1001.
- Hornsey, M. J., Bain, P. G., Harris, E. A., Lebedeva, N., Kashima, E. S., Guan, Y., . . . Blumen, S. (2018). How much is enough in a perfect world? Cultural variation in ideal levels of happiness, pleasure, freedom, health, self-esteem, longevity, and intelligence. *Psychological Science*, 29(9), 1393-1404.
doi:10.1177/0956797618768058
- Hornsey, M. J., Harris, E. A., Bain, P. G., & Fielding, K. S. (2016). Meta-analyses of the determinants and outcomes of belief in climate change. *Nature Climate Change*, 6, 622-626.
- Hornsey, M. J., & Imani, A. (2004). Criticizing groups from the inside and the outside: An identity perspective on the intergroup sensitivity effect. *Personality and Social Psychology Bulletin*, 30, 365-383.
- Hornsey, M. J., Majkut, L., Terry, D. J., & McKimmie, B. M. (2003). On being loud and proud: Non-conformity and counter-conformity to group norms. *British Journal of Social Psychology*, 42, 319-335.
- Hunt, E. (2019, March 12). BirthStrikers: Meet the women who refuse to have children until climate change ends. *The Guardian*. Retrieved from www.theguardian.com/lifeandstyle/2019/mar/12/birthstrikers-meet-the-women-who-refuse-to-have-children-until-climate-change-ends

- IPCC. (2018). Summary for Policymakers. In V. Masson-Delmotte, P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P. R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, & T. Waterfield (Eds.), *Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*. Geneva, Switzerland: World Meteorological Organization.
- Jackson, T. (2017). *Prosperity without growth: Foundations for the economy of tomorrow*. Oxford, UK: Routledge.
- Jagers, S. C., Löfgren, Å., & Stripple, J. (2010). Attitudes to personal carbon allowances: Political trust, fairness and ideology. *Climate Policy, 10*, 410-431.
- Kashima, Y., Bain, P., Haslam, N., Peters, K., Laham, S., Whelan, J., . . . Fernando, J. (2009). Folk theory of social change. *Asian Journal of Social Psychology, 12*, 227-246.
doi:10.1111/j.1467-839X.2009.01288.x
- Kashima, Y., Shi, J., Tsuchiya, K., Kashima, E., Cheng, S. S., Chao, M. M., & Shin, S.-h. (2011). Globalization and folk theory of social change: How globalization shapes societal perceptions about the past and future. *Journal of Social Issues, 67*(4), 696-715. doi:10.1111/j.1540-4560.2011.01723.x
- King, M. L. J. (2010/1968). *Where do we go from here: Chaos or community?* Boston, MA: Beacon.
- Klein, N. (2015). *This changes everything. Capitalism vs. the climate*. London, UK: Penguin.
- Leach, C. W., & Brambilla, M. (2014). On the importance of being moral: The distinctive role of morality in social judgment. *Social Cognition, 32*, 397-408.
doi:10.1521/soco.2014.32.4.397

- Leach, C. W., Ellemers, N., & Barreto, M. (2007). Group virtue: The importance of morality (vs. competence and sociability) in the positive evaluation of in-groups. *Journal of Personality and Social Psychology*, 93(2), 234-249. doi:10.1037/0022-3514.93.2.234
- Lorenzoni, I., & Pidgeon, N. F. (2006). Public views on climate change: European and USA perspectives *Climatic Change*, 77, 73-95.
- Markowitz, E. M., & Bowerman, T. (2012). How much is enough? Examining the public's beliefs about consumption. *Analyses of Social Issues and Public Policy*, 12(1), 167-189. doi:10.1111/j.1530-2415.2011.01230.x
- Markowitz, E. M., & Shariff, A. F. (2012). Climate change and moral judgement. *Nature Climate Change*, 2. Retrieved from doi:10.1038/nclimate1378
- McCright, A. M., Dunlap, R. E., & Marquart-Pyatt, S. T. (2015). Political ideology and views about climate change in the European Union. *Environmental Politics*, 25(2), 338-358. doi:10.1080/09644016.2015.1090371
- Metropolitan Police. (2019, April 25). UPDATE: Arrests and further conditions, central London protests. Retrieved from <http://news.met.police.uk/news/update-arrests-and-further-conditions-central-london-protests-366854>
- Monbiot, G. (2017). *Out of the wreckage: A new politics for an age of crisis*. Brooklyn, NY: Verso.
- O'Neill, B. C., Dalton, M., Fuchs, R., Jiang, L., Pachauri, S., & Zigova, K. (2010). Global demographic trends and future carbon emissions. *Proceedings of the National Academy of Science*, 107, 17521-17526.
- Paterson, M., & Stripple, J. (2010). My Space: Governing individuals' carbon emissions. *Environment and Planning D: Society and Space*, 28, 341-362.
- Pedersen, R. L., & Lam, D. P. M. (2018). Second comment on 'The climate mitigation gap: Education and government recommendations miss the most effective individual

- actions'. *Environmental Research Letters*, 13(6), 068001. doi:10.1088/1748-9326/aac9d0
- Shweder, R. A. (1994). Are moral intuitions self-evident truths? (James Q. Wilson's 'The Moral Sense'). *Criminal Justice Ethics*, 13(2), 24-31.
- Staub, E. (1990). Moral exclusion, personal goal theory, and extreme destructiveness. *Journal of Social Issues*, 46, 47-64.
- Stern, P. C., & Wolske, K. S. (2017). Limiting climate change: What's most worth doing? *Environmental Research Letters*, 12(9), 091001. doi:10.1088/1748-9326/aa8467
- Tausch, N., Becker, J. C., Spears, R., Christ, O., Saab, R., Singh, P., & Siddiqui, R. N. (2011). Explaining radical group behavior: Developing emotion and efficacy routes to normative and nonnormative collective action. *Journal of Personality and Social Psychology*. doi:10.1037/a0022728.supp
- Taylor, M. (2019, February 27). Is Alexandria Ocasio-Cortez right to ask if the climate means we should have fewer children? Retrieved from <https://www.theguardian.com/environment/shortcuts/2019/feb/27/is-alexandria-ocasio-cortez-right-to-ask-if-the-climate-means-we-should-have-fewer-children>
- United Nations. (2018). My world: The United Nations global survey for a better world. Retrieved from <http://about.myworld2030.org/>
- Weber, H. (2004). Explorations in the social construction of anger. *Motivation and Emotion*, 28, 197-219. doi:10.1023/B:MOEM.0000032314.29291.d4
- Whitmarsh, L., & Corner, A. (2017). Tools for a new climate conversation: A mixed-methods study of language for public engagement across the political spectrum. *Global Environmental Change*, 42, 122-135. doi:10.1016/j.gloenvcha.2016.12.008
- Williams, N. (2010). The missing climate change policy. *Current Biology*, 20, R221-R222.

Wynes, S., & Nicholas, K. A. (2017). The climate mitigation gap: Education and government recommendations miss the most effective individual actions. *Environmental Research Letters*, *12*, 074024. doi:10.1088/1748-9326/aa7541

Wynes, S., & Nicholas, K. A. (2018). Reply to Second comment on ‘The climate mitigation gap: Education and government recommendations miss the most effective individual actions’. *Environmental Research Letters*, *13*(6), 068002. doi:10.1088/1748-9326/aac9cf

Zhenmin, L., & Espinosa, P. (2019). Tackling climate change to accelerate sustainable development. *Nature Climate Change*, *9*(7), 494-496. doi:10.1038/s41558-019-0519-

4