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REPLY

Reply to Second comment on ‘The climate mitigation gap: education and government recommendations miss the most effective individual actions’

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Abstract
In their comment piece, Laycock and Lam (Environ. Res. Lett. 13 068001) focused on the importance for reducing emissions of actions beyond individual choices and overconsumption, and raise the issue of family planning as a human right. Here we respond that both individual and collective actions, in private and professional life, are important to reducing emissions to near zero in the next few decades. While we do not argue that individual actions will be sufficient to achieve this profound transformation, we believe that they can be helpful towards this goal, and also note from our own observations that we see personal, professional, and collective actions as often mutually reinforcing rather than contradictory. Regarding overconsumption, we reiterate that our study was designed to illustrate the decisive role that consumption patterns play in driving greenhouse gas emissions, based on the understanding that wealthy, high-carbon individuals are responsible for a disproportionately large share of emissions. Regarding the ethics of family planning, we fully agree with Laycock and Lam (and international agreements) that family planning is a private decision. We give examples of our careful public communication around this issue to provide this context and thank them for the opportunity to do so.

In their comment piece, Laycock and Lam provide insight into the discussion of high-impact climate actions, especially concerning the effect of communicating about family size. Here we respond to their thoughts on the scope of our research, including (1) the importance of actions beyond the private individual level, (2) the importance of overconsumption to an individual’s emissions and (3) the ethics of communications pertaining to the planning of family size.

1. Beyond private, individual actions
First, Laycock and Lam critique our failure to mention professional or communal actions while dwelling on personal and private actions. While our explicit focus for this paper was on providing evidence for individuals in high-emitting, industrialized countries looking for ways to reduce their own personal emissions, we recognize the importance of broader changes. Our aim was to complement already-abundant research and policy attention focused on climate actions at the level of the city (e.g. Bulkeley and Castán Broto 2013), region (e.g. Under2 Coalition 2018), nation (e.g. UNFCCC 2015), sector (e.g. Pacala and Socolow 2004, Pachauri et al 2014), and private actors (e.g. Science Based Targets 2018), as well as across sectors at regional to national scales (e.g. We Are Still In 2018). As we note in our FAQs (Wynes and Nicholas 2017a), the motivation for our work came from requests from high school students and other members of the general public for information quantifying the climate impacts of their personal choices, which we showed in our analysis was lacking in two common authoritative sources of such information, namely high school science textbooks and government recommendations.
We fully agree that both individual and collective actions, in both private and professional life, are important to reduce emissions to near zero in the next few decades. This is a profound transformation, and we do not argue that individual actions will be sufficient to achieve it. However, individual actions are helpful, and indeed can build into broader private and professional campaigns. Since publishing the paper, we have heard from individuals who are looking for ways to implement high-impact actions in schools, workplaces, and communities—for example, making plant-rich foods the norm in cafeterias, or changing workplace travel policies to support travel-free meetings or lower-carbon travel options. It seems that many readers are also interested in professional or collective action and we applaud efforts in these areas.

We also agree that select individuals (e.g. company CEOs, national or university presidents, NGO leaders etc.) may have far greater individual potential for emissions reductions in their professional capacity through achieving large-scale policy change than in their personal lives. We believe that each person working towards climate mitigation must assess for her or himself where their efforts can be best spent, but from our own observations, we see personal, professional, and collective actions as often mutually reinforcing rather than contradictory.

We agree that quantifying the emissions reductions from civic and professional actions would be interesting and worthwhile, but we were unable to find published literature that did so to include in our study of existing studies. We hope other researchers expand on this work by developing methods to quantify and rank the climate emissions impact of these various actions.

2. Role of overconsumption

Second, Laycock and Lam suggest that communications on family size would benefit from greater recognition of the role of overconsumption. We fully agree with their statement that ‘consumption patterns play a decisive role’ in driving greenhouse gas emissions. In our paper we mention consumption six separate times—and three of our four high-impact actions (living car free, avoiding air travel and eating a plant-based diet) are essentially ways to avoid the most common and significant forms of overconsumption driving climate change.

They cite a critique that our study ‘…obscures the single most salient fact about individual carbon emissions, namely that wealthy people produce way more’ (Roberts 2017). We are very much aware of this, and it is why we focused our analysis on highly industrialized countries where the majority of the world’s wealthy high emitters live (as we note in the first paragraph of the introduction that these high-carbon individuals are responsible for nearly 50% of emissions (Gore 2015)). These individuals have the ability to maintain a very high quality of life while drastically decreasing personal emissions.

While consumption is critical to determining emissions, we also note in our paper that the number of people acts as a multiplier of emissions resulting from consumption patterns (see also Waggoner and Ausubel (2002)). The magnitude of the action, ‘have one fewer child’ is highly dependent on how much and how quickly society chooses to decarbonize (which is related to society’s consumption levels today and will depend in the future on how much and how quickly society chooses to decarbonize and/or reduce consumption). While we focused on high-emitting, high-income, developed countries in our study, for completeness, we included all countries studied in the supplement, which indeed shows how consumption patterns determine per-capita emissions (e.g. 9441 tons total carbon legacy for a US child, vs. 56 in Bangladesh (Murtough and Schlax 2009)).

3. Ethics of family planning

This relates to a final suggestion from Laycock and Lam, who recommend that communicators recognize the extent to which they understand family planning to be a human right. We do not by any means wish for our results to be used as justification to infringe on anyone’s rights to family planning (a right specified in the Sustainable Development Goals adopted by all nations, as we noted in our reply to van Busschuyse and Branstedt (Wynes and Nicholas 2018)).

We agree that family planning can be a sensitive ethical issue. For individuals currently considering having a child, recognizing that family size affects the climate can be one of many factors informing a complex and highly personal decision. We present our research as additional information to inform a personal choice, and not as a prescription. We thank the authors for the chance to clarify our position on this sensitive topic.

We share Lam and Laycock’s belief that scientists have a responsibility to communicate their work responsibly. We believe in making academic research widely available to both researchers and the public, one reason we chose to publish in an open-access journal. While always maintaining accuracy, we believe it is appropriate to tailor communications differently for an audience of our fellow scientists in a peer-reviewed paper, and in our communications to the general public. For readers of Environmental Research Letters, we assume familiarity with the relevant literature and background assumptions cited in our references (one of these being that the population materially affects greenhouse gas emissions).

In our public communications, including two press releases (Lund University 2017, Wynes and Nicholas...
an FAQ (Wynes and Nicholas 2017a), magazine articles (Nicholas 2017), and numerous radio, television, and print interviews (e.g. Baggaley 2017, Meuse 2017, Whitley 2017), we have consistently provided context for interpreting our results as Lam and Laycock request. Despite our best efforts at nuanced and accurate communication, there were some media reports that interpreted our findings in ways we did not intend. But we believe we were clear about our own ethical stances when communicating with the media. For example,

‘I knew this would be a sensitive topic to bring up. Certainly it’s not my place as a scientist to dictate choices for other people. But it is my place to do the analysis and report it fairly.’ (Nicholas as quoted in Whitley 2017.)

‘Having a child is an enormous decision in every respect—personally, professionally, financially. Our research shows it is also by far the most crucial choice we make in terms of the climate. When accounting for the cumulative impact of future descendants at current emission rates, each additional child in a developed country represents a carbon legacy of a stunning 58.6 tons per year. Put simply, in countries with high emissions rates, adding more people adds a lot more carbon to the atmosphere—and their children will add more still. This means that decarbonizing society overall could hugely reduce the climate impact of an additional child—making it up to 17 times less… Enabling kids to grow up in a safe climate is a huge incentive to reduce overall national emissions to sustainable levels, and has motivated some parents to reduce their household emissions as well. Meanwhile, recognizing that family size affects the climate can be one factor informing a complex and highly personal decision.’ (Nicholas 2017.)

‘Wynes acknowledges that how many babies to have is a very personal decision. His research isn’t meant to guide national policies or to pressure people into having smaller families, he says. But it could give people more information to consider when they’re deciding how many children they want.’ (Baggaley 2017.)

‘For me personally, the climate is very important…I want to leave a healthy atmosphere for future generations,’ he says. ‘It’s something I’m going to be cognizant of, but not everyone is in the same place.’ (Wynes as quoted in Baggaley 2017.)

We see our research as informative and distinct from policy-making (especially regarding choices involving family size). But we do hope that it has generated discussions like this one—discussions that may be difficult but necessary as we navigate towards a future with near zero emissions.

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