Caution in Defining the Public for Legitimate Geoengineering Governance

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Abstract: Although I believe that Gardiner and Fragnière are right to claim that geoengineering governance demands participatory structures, I think more caution is needed. First, the public to be considered because it is affected must be differentiated depending on the geoengineering technique at issue and on the severity of its impact. Second, to avoid undermining democratic legitimacy, ethical conditions of legitimacy must be carefully assessed. Even though future generations and nature are very likely to be affected by geoengineering, their representation is not as unproblematic as it might seem at first sight.

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Caution in Defining the Public for Legitimate Geoengineering Governance

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Gardiner and Fragnière propose that geoengineering should be governed by robust structures of participation, incorporating ethical conditions of legitimacy. I fully agree with this suggestion, but I think it is important to be somewhat more cautious when defining the public for whom geoengineering should be administered. I argue for caution in two respects. First, I believe that the public to be considered must be differentiated according to the various risks and negative impacts of the various geoengineering techniques. Second, although I agree that geoengineering strongly concerns future generations and nature, serious legitimacy issues arise when they are included in the relevant public.

Let me first explain why I fully agree with Gardiner and Fragnière that geoengineering governance demands participatory structures. To be acceptable, the negative side effects of geoengineering must be in proportion to the gains geoengineering delivers and their impacts and risks distributed fairly. Distributing risks and burdens from climate measures fairly requires principles of justice. I believe that these principles vary depending on the area of climate action (Wallimann-Helmer, 2016, Wallimann-Helmer, 2018a). Regarding mitigation, this means heavier cuts in emissions for heavier emitters. When adaptation to climate change is considered, this is mainly a question of the fair distribution of the burdens of finance and assistance. In case of geoengineering governance, the risks accompanying researching and depleting geoengineering are at issue. Unfortunately, due to technical, security, and efficiency reasons, a distribution of these risks in accordance with principles of justice is not possible (Krütli, Törnblom, Wallimann-Helmer, & Stauffacher, 2015).

Since a just distribution of risks from geoengineering is not possible, I believe that participatory governance becomes key (Schuppert & Wallimann-Helmer, 2014; Wallimann-Helmer, 2018b). This is for two reasons. First, if the distribution of risks cannot be just, it must at least be legitimate. It can become legitimate if those affected by these risks have a fair opportunity to participate in the decisions about their distribution. Second, in many cases a distribution of risks is legitimized only when those facing potential negative impacts are compensated. Compensation here means making good the worse situation those exposed to risks now face. Sometimes this can be done financially. However, loss of quality of life, damage to cultural heritage, and similar negative impacts cannot be appropriately compensated simply by paying money. What is needed in addition is something only those facing the additional risks can decide (Huggel, Wallimann-Helmer, Stone, & Cramer, 2016; Wallimann-Helmer, 2015b).

Therefore, geoengineering governance demands the participatory involvement of those affected. This definition of the public to be involved in geoengineering governance is quite different from the one suggested in the 1st and 2nd Tollgate Principles. These propose that geoengineering should be governed 'on behalf of the global, intergenerational and ecological public (…)'. This formulation assumes that the potential negative impacts of geoengineering are always concern the whole global community, in their long-term effects always future generations, and always the non-human environment. In principle, this is correct. However, this definition does not reflect the differences between the negative impacts of the various geoengineering techniques.

Although Gardiner and Fragnière limit their considerations to one geoengineering technique, stratospheric sulphate injection, the tone of the principles is more general and seems to cover geoengineering in general. However, as the authors mention in a footnote, the techniques that count as geoengineering are quite diverse and most probably the negative side effects of these techniques will also vary. Enhancing the albedo of the earth by painting roofs

white has different side effects from stratospheric sulphate injection. They also extend differently in geography, and their long-term and ecological negative effects will differ as well. Consequently, the public to be considered varies with the technique, because different techniques affect different individuals and communities (Honegger et al., 2017). Hence, if the 1st and 2nd Tollgate Principles are to be applied to geoengineering in general the public to be considered must be defined differently.

This claim is supported by another consideration. Gardiner and Fragnière convincingly argue that geoengineering governance must live up to ethical principles of legitimacy. They seem to believe that this implies appropriate representation of all those entities potentially affected by the negative impacts. That is, all who may be affected have to be involved in participatory geoengineering governance. However, since geoengineering's public is defined as global, intergenerational, and ecological, they risk running into serious legitimacy issues, at least from a democratic perspective. The least problematic is the claim that, in the case of stratospheric sulphate injection, the public must be global. This is legitimate because the risks stemming from this geoengineering technique very likely extend to the entire globe. But as soon as a diversity of geoengineering techniques is considered, participatory governance can only be legitimate if it takes into account these differences as well.

Intergenerational and ecological representation present more problematic legitimacy issues. Although many proposals exist for representing future generations, they all necessarily rely on those currently living to elect and represent future generations. The future generations to be represented can neither choose who represents them, nor can they make their representatives accountable. However, both are necessary conditions of legitimate representation in democratic schemes of governance (Rehfeld, 2006). The same holds for the claim that geoengineering's public must include the ecological. Nature and animals can neither elect those representing them, nor can they make their representatives accountable. Furthermore, certain moral beliefs are a precondition to ensuring that this function of

representation is appropriately fulfilled. In my view, such a scheme of representation undermines a basic principle of representative democracy: that all members of the people can become representatives of part of the people, irrespective of their values, if their constituency votes them into the representative institution (Wallimann-Helmer, 2015a).

To sum up, although I believe that Gardiner and Fragnière are right to claim that geoengineering governance demands participatory structures, I think more caution is needed. First, the public to be considered because is affected must be differentiated depending on the technique at issue and on the severity of its impact. Second, to avoid undermining democratic legitimacy, ethical conditions of legitimacy must be carefully assessed. Although future generations and nature are very likely to be affected by geoengineering, their representation is not as unproblematic as it might seem at first sight.

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