Ethics statement on geoengineering

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It is better to investigate geoengineering openly now rather than risk uninformed action in the future. Geoengineering research should be conducted with transparency and impartiality, with the aim of quantifying risks and impacts. Scientists have a key role in taking part in the public discourse. It should be emphasised that no geoengineering methods offer a complete solution to climate change, and that emissions reduction remains the safest and most desirable option.

The issue of geoengineering raises profound ethical questions as well as scientific ones. It has global implications, and will impact societies, economies and ecosystems, and as a result must be strongly regulated.

In the Oxford Principles (2010) a group of academics attempted to put together a set of guidelines by which geoengineering research should be governed. They are sound, and represent a useful starting point for regulation, but they are also vague. They stress the independent assessment of impacts, which are expanded upon here. The environmental impacts, for example, may be significant. A strong motivation for stopping climate change is to reduce the environmental impact; we must take care that we do not do more damage in geoengineering than we would do otherwise. This is an example of why emissions reduction is a much safer option. Tackling the root cause of the problem is generally preferable to tackling the effects.

The Oxford Principles stress that any application of geoengineering would require a high level of public consent. As scientists we have a responsibility to take a role in informing the public. We must maintain clear and open communication of our work. They do not provide any guidance on how geoengineering schemes should be governed or controlled. They should be fully controllable, and ideally reversible, should the need arise. Different nations (and different factions within nations) will have very different ideas of what constitutes an optimum climate. Therefore any regulatory efforts must be international in their scope and democratic in their organisation.

The UN Convention on Biological Diversity (2010) included a statement on geoengineering, stating that any activities must be 'subject to a thorough prior assessment of the potential impacts on the environment', with the exception of small-scale, controlled experiments which must be 'justified by the need to gather specific scientific data'. Some have interpreted this is as a *de facto* moratorium on geoengineering projects.

Knowing that humanity has behaved in an irrational and scientifically illiterate fashion in bringing about climate change, how are we to expect it to be rational and scientifically literate about geoengineering? Once again, scientists must be fully involved in future discourse. Ignorance has never held humans back from action in the past. This is why I believe it is best to investigate geoengineering methods and their implications. We can develop our understanding and tune regulatory efforts using the results of such investigation. This is a more desirable option than others conducting research 'behind closed doors'. This could lead to a situation where a rogue state or other entity decides to implement a geoengineering scheme on its own, without a proper assessment of risk, or measurable information on the results, or public consent.

All geoengineering research should be performed with the caveat that emissions reduction is the main focus in tackling the problem of climate change. Geoengineering is too risky, too technically and ethically complex, and too inexact in the climate response to constitute a solution in its own right.

References

Said Business School, 2010: The Regulation of Geoengineering. `http://www.sbs.ox.ac.uk/centres/insis/news/Pages/regulation-geoengineering.aspx`, online; accessed 17/11/10.

UN Convention on Biological Diversity, 2010: The Regulation of Geoengineering. `http://www.cbd.int/`, online; accessed 17/11/10.