

# Developing a Discourse for the Ethics of Environmental Enhancement

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Since environmental decline shows no sign of slowing down and an ecological catastrophe must increasingly be feared, new regulatory approaches are now considered or even employed that radically improve on the environmental performance of the current regulatory regime. Emerging technologies (e.g. biotechnology, nanotechnology, bio-banking or geo-engineering) are actively pursued with the aim of conserving and restoring the natural environment through environmental enhancement.

For example, in the context of serious climate risks and the likely limits of emissions reductions and adaptation at short term, intentional, large scale interventions in natural systems in order to reduce climate change risks are seriously being considered. The potential of 'climate engineering' or 'geo-engineering' is diverse and include capturing the leading greenhouse gas out of the atmosphere (e.g. ambient air capture and ocean fertilization) and 'Solar radiation management' to increase the reflective albedo of the earth to compensate climate change (e.g. stratospheric aerosol injection and marine cloud brightening). The example of geo-engineering as well as other forms of environmental enhancement has been controversial for a number of reasons. Perhaps the most widespread of these is the concern that deployment of these technologies is 'unnatural' and would reduce the incentives and political willpower for the preferred responses of preventive environmental policy and law.

However, usually the debate on the use of these new technologies is couched in terms of risk regulation while a clear explicit discourse on the different ethical issues at stake is missing. In contrast, the debate on cognitive enhancement as an integrated, developmental approach to the remediation of neurocognitive and social-cognitive deficits is much more grounded in ethical theory. Although positions differ greatly here, the discourse can roughly be divided into three groups of thoughts ('human rights', 'dignitarians' and 'utilitarians'). From a regulatory perspective, structuring the debate on ethics like this is not just an interesting philosophical exercise. It allows regulators to debate on the 'hard cases' and to ensure legitimacy ('doing the right thing for the right reasons') and accountability for their policies on the issue and abstain from arbitrary decision-making (making policy that is unpredictable and unreasonable).

This paper seeks to structure the ethical debate on environmental enhancement by defining some core concept. First, an attempt to define the concept of environmental enhancement itself is needed. Furthermore, it is crucial to acquire a grasp of the terms 'restoration' (an objective that can be found in every environmental treaty without a clear definition) '(un)naturalness' and 'human intervention'. Only when we have a deeper understanding of these qualifications we can start a debate on different ethical positions with regard to environmental enhancement.