Ethical Assessment of the Long-Term Damages of Climate Change

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Economic assessment of the long-term damages of climate change risks bias in three ways:

1. Values represented monetarily reflect today's preferences, and there is no reason to think that these adequately represent actual losses to future people.
2. Over long time spans, the standard practice of discounting future values lacks justification.
3. To the extent that economic assessment discounts suffering and death, it misrepresents their moral importance, unjustly discriminating against future people.

Rights-Based Approaches would like to avoid trade-offs of harms and benefits by crafting policies that consistently respect universal human rights.

"Climate change over the next century is *likely* to adversely affect hundreds of millions of people through increased coastal flooding, reductions in water supplies, increased malnutrition and increased health impacts." -IPCC 2007 Synthesis Report, p. 65

It is too late avoid violating rights—hence too late to avoid trade-offs.

The applicable ethical principle is minimization of harm.

By what measures can we assess the distant future harms of climate change?

A crude but serviceable suggestion is casualty count—with no discounting.

Total casualty count is likely to be in the billions.

The average American is by a lifetime of participation in our greenhouse-gas-intensive economy responsible for (within fairly wide error bars) about two of the human casualties of climate change.

—John Nolt, "How Harmful Are the Average American's Greenhouse Gas Emissions?" *Ethics, Policy and Environment* 14, 1, March 2011, pp. 3-10.

More nuanced measures of value that might be used to assess the future harm of climate change:

Objective lists of human values

Brad Hooker

Substantive freedoms

Amartya Sen and Martha Nussbaum

Human Development Index

Jörg Chet Tremmel, *A Theory of Intergenerational Justice*

Non-anthropocentric Value Assessment—the assessment of harm and benefit to non-human living things, as opposed to their value for us.

This is the only sort of value assessment applicable to a post-human world.

Non-anthropocentric values have slowly gained ground in public affairs:

- Animal welfare legislation
- Endangered Species Act

Some non-anthropocentric value principles:

- Like suffering matters equally, regardless of the species of the sufferer.
- Biodiversity is a measure of non-anthropocentric value.

But non-anthropocentric values are often incomparable with anthropocentric values.

Two harms are ***incomparable*** if neither is worse than or equal to the other.

This complicates aggregation and hence decision-making, but is not fatal

There are mathematical methods for aggregating values, some pairs of which are incomparable.

Erik Carlson, "Extensive Measurement with Incomparability," *Journal of Mathematical Psychology* 52 (2008) 250–259.

Three “metrics” of the harm of climate change:

- Human deaths
- Suffering
- Biodiversity loss

There is no common measure for all three.

Degrees of damage comprise, not three separate linear scales, but a rich, partially ordered network of possibly non-numerical values.

Incomparability may be limited to a specific range of values.

Carlson has characterized a generalized notion of (non-numerical) addition for such arrays of values—and hence shown how to aggregate them.

Such aggregation techniques do not always or even usually produce unambiguous decisions. But they narrow the options and are rational and non-arbitrary.

They may be useful for the ethical assessment of the long-term effects of climate change.