

In pursuit of third generation human rights with fourth generation technologies

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Human history proves that technologies:

- a) have considerable potential to be purposefully deployed in pursuit of human rights and;
- b) for that purpose may be more effective than paper law.

My paper explores the extent to which the emergence of a range of new technologies gives rise to a plausible legal argument that states have a duty to employ such technologies in pursuit of human rights. To answer this question, I discuss three sub-questions:

- 1. the implications of the existence of different classes of human rights;
- 2. the importance of emerging technologies that engage with those classes of rights in different ways;
- 3. the 'regulatory tilt' of regulatory environments, which typically simultaneously incentivize (e.g. patent law) and constrain (e.g. precaution, competing rights) the deployment of such technologies.

1. First, second and third generation human rights

I examine the distinction between 'first', 'second' and 'third generation' human rights, and focus on second and third generation human rights. Unlike first generation rights instructing states to keep out of citizens' lives, these rights implore states to act so as to ensure that citizens can lead a certain type of life relative to a base-line informed by notions of an economic, cultural, social and equitable nature.

Such rights thereby revolve around the use and distribution of scarce and finite economic and natural resources, and translate into concepts such as sustainability and inter-generational equity.

Their conception as 'rights' is highly problematic, however, in light of the finite nature of the resources at issue, and the apparent unavoidability of irreversible consequences of human life for future generations.

2. First, second, third and fourth generation technologies

I distinguish between first, second, third and fourth generation technologies. The essence of fourth generation technologies, simply put, is that they defy notions of

irreversibility and the finite nature of natural resources (nanotechnology, biotechnology, synthetic biology, climate engineering etc). Obligations to act flowing from second and third generation human rights may therefore be triggered as a result of:

- a) a duty to avert catastrophic breaches of second and third generation human rights (i.e. “states of emergency” resulting from climate change, food scarcity, pandemics, etc.), in combination with;
- b) the availability of new technological options (fourth generation technologies) to address such challenges.

3. *The Regulatory Environment: exploring ‘regulatory tilt’*

A duty to deploy fourth generation technologies to secure compliance with human rights must be compatible with existing regulatory environments. Typically, these simultaneously incentivize (e.g. in the form of patent law) and constrain (e.g. the precautionary principle) such action. I explore important elements that define the European regulatory environment, including in particular precaution and proportionality. Although precaution has received more than its fair share of academic attention over the past decades, a new question is whether the principle is sufficiently plastic so as to imply a duty of regulators to *consider* (research) or even to *deploy* fourth generation technologies in pursuit of compliance with human rights obligations.