

Timing for this talk is perfect.

- I am currently teach **PHI 336** Environmental Ethics, a core requirement in our Environmental and Sustainability Studies program
 - **Current unit**, Sustainability: the Concept and its Critique
- So I'll frame my brief comments with **reference to some work** are doing in that class right now
 - But I'll **draw out some conclusions** in a way **distinct** from that of my class that I think I especially relevant to this discussion

I'd like to start by quoting from one of the most important documents on sustainability this century, i.e., the **second encyclical of Pope Francis titled Laudato Si'**, On Care for Our Common Home, published in 2015.

- Given our subject, i.e., emerging technologies, I'll particularly **focus** on the manner in which **genetically modified organisms (GMOs)**, particularly **GM cereals are treated** in the Encyclical.
 - The idea of sustainability: fundamentally a development concept
 - **Weak** concept
 - A. Three pillars concept
 - Economy
 - Environment
 - Society
 - B. Sustainability: the intersectional concern
 - 3 circle Venn diagram
 - A v B: Admits of a substitutability or interchangeability (**fungibility**) among pillars
 - Social product (emerging tech) can replace, substitute, or positively augment an natural process
 - **Strong** concept
 - ecological-economic framework
 - many of the most **fundamental services** provided by nature **cannot be replaced** by services produced by humans or man-made capital (Gudmussion et. al., 34-5).
- GM Cereals in Encyclical
 - “In many places, following the introduction of these crops (GM cereals), productive land is concentrated in the hands of a few owners due to “the progressive disappearance of small producers, who, as a consequence of the loss of the exploited lands, are obliged to withdraw from direct production”.[113] The most vulnerable of these become temporary labourers, and many rural workers end up moving to poverty-stricken urban areas. The expansion of these crops has the effect of destroying the complex network of ecosystems, diminishing the diversity of production and affecting regional economies, now and

in the future. In various countries, we see an expansion of oligopolies for the production of cereals and other products needed for their cultivation. This dependency would be aggravated were the production of infertile seeds to be considered; the effect would be to force farmers to purchase them from larger producers” (Laudato Si’, #135).

- Lesson:
 - Concerns of the adverse health effects to the individual consumer subordinated to the impact of the technology to the human economies, the social body, and the ecosystem.
 - The household of human kind
 - Subordinate to the household of nature (Kingdom of God)
- Continuing with the Encyclical, one can see in the document
 - at once, both
 - wonder at the awesome power of our technology
 - "Science is the best tool by which we can listen to the cry of the earth" (Encyclical Summary, 1)
 - trepidation at the unwise use of this power
 - "Yet it must also be recognized that nuclear energy, biotechnology, information technology, knowledge of our DNA, and many other abilities which we have acquired, have given us tremendous power. More precisely, they have given those with the knowledge, and especially the economic resources to use them, an impressive dominance over the whole of humanity and the entire world. Never has humanity had such power over itself, yet nothing ensures that it will be used wisely, particularly when we consider how it is currently being used" (Laudato Si’, #104)

Some 60 years earlier, the German philosopher, **Martin Heidegger**, would write in his influential essay, *The Question Concerning Technology*, that:

- "Everywhere we remain unfree and chained to technology, whether we passionately affirm or deny it. But we are delivered over to it in the worst possible way when we regard it as something neutral... " (FT, 4).

So my first point is simply to suggest questions concerning emerging technologies

- ought not to be considered as something neutral
- especially in the manner that these technologies **instrumentalize nature, i.e., recreate nature as artifact**, for certain anthropocentric ends.

Following this thought, I'd like to conclude with a reference to the philosopher **Hans Jonas** and his work, *The Imperative of Responsibility* (1979)

- Two basic premises underlie the book as a whole.

- **First** premise, "that our **collective technological practice constitutes a new kind of human action**," new in regards to
 - method,
 - magnitude of its enterprises,
 - scope of impact, and
 - cumulative propagation of its effect.
 - His is a work that considers the Anthropocene before the idea of the Anthropocene was cool.
 - Insight (not special to Jonas)
 - Our technological practices emanates from a fundamental **reconceptualization of knowledge** inaugurated by Francis Bacon
 - **Knowledge is power**
- **Second** premise, consequent of the novelty of human action, **our dealings with the non-human world can no longer be considered ethically neutral**.
- The basic argument in *The Imperative of Responsibility* is this:
 - **Our predictive knowledge** cannot span the consequences of our **technical knowledge**.
 - Thus with the transformation of human action consequent to the reconceptualization of knowledge as power, all previous ethics fails.
 - Thus his work **advances a new of ethics** (an ethics of futurity, he calls it)
 - Importantly, this ethic proceeds from the recognition of the altered state of human action which our technologies have obtained for us.
- There is **an ominous side of the Baconian ideal** that I feel necessary to reiterate, following Jonas's lead
 - **1979**: "we live in an **apocalyptic situation**, that is, under the threat of a universal catastrophe if we let things take their present course" (140).
 - "The **danger of disaster** attending the Baconian ideal of power over nature through scientific technology **arises not so much from any shortcomings of its performance as from the magnitude of its success**" (*Ibid.*)
- The manner by which we conceive, design, implement and assess emerging technologies demands **recognition of two considerations**:
 - **First**, the integrated social, economic, and environmental dynamic at play in the application of these technologies
 - **There are some things technologies cannot do and should not do**
 - Second, the solutions to our most pressing social, economic and environmental problems we are confronted with today may not reside in **the very habits of thinking which have produced these very problems**.