A historical painting depicting a man and a woman in 17th-century attire. The man, on the left, is wearing a dark robe and has a large, ornate feathered hat. He is looking down at a balance scale and some coins on a table. The woman, on the right, is wearing a red robe and a white lace cap. She is looking towards the man. The background features a large open book, a lit candle, and various scientific and mathematical instruments like a quadrant and a telescope.

Analysis of IR

PS 1599 | Week 3: Technology and Sustainability

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Administration

- Office hours + meetings
- Emails
- COVID
- Website
- Question?

What did we talk about last time?

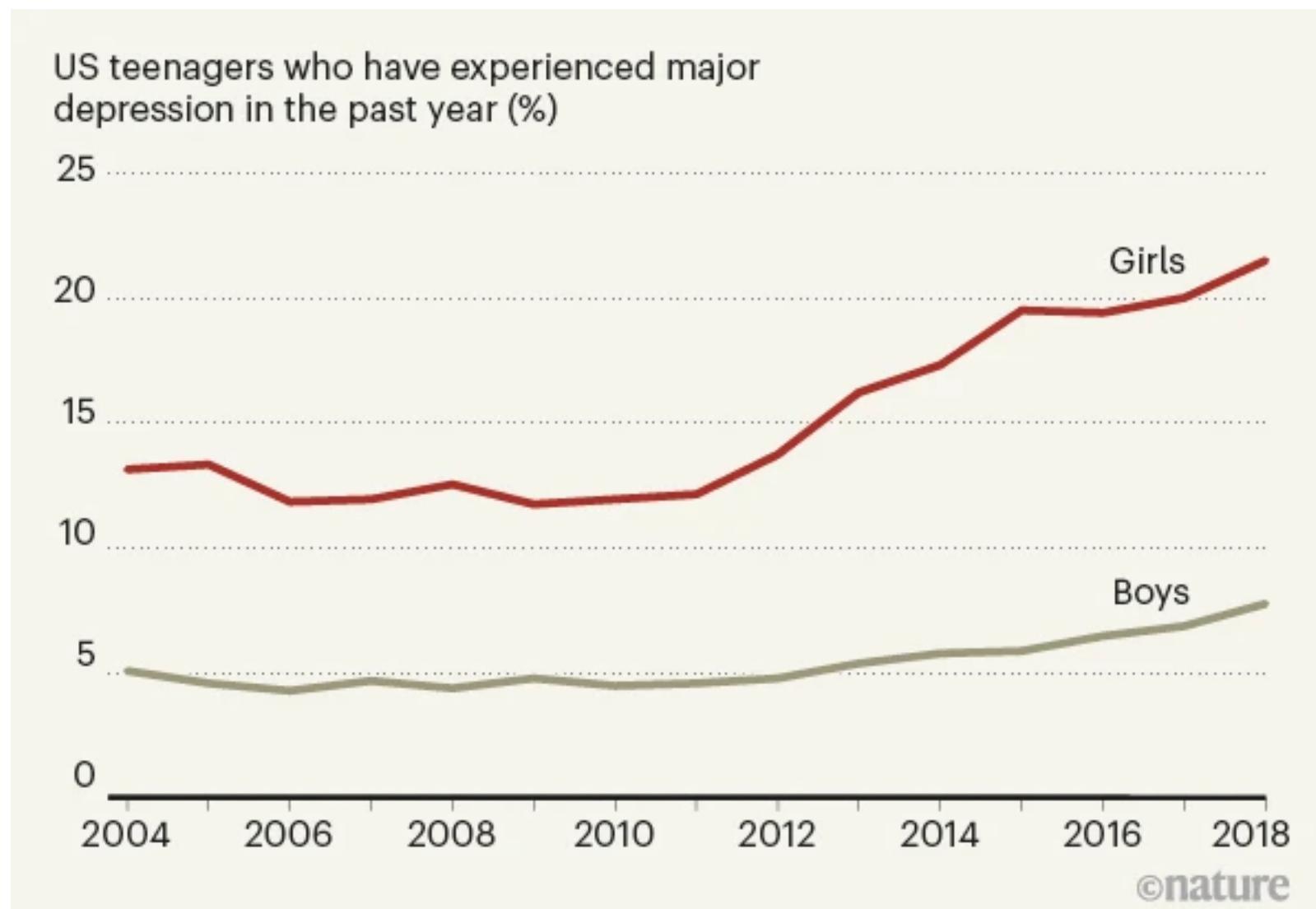
**Sustainable
development**

- So far, my argument: development is just
 - Increases welfare...
 - esp. among the poor (in long-run)
- Since dev → tech: innovation is also just
- But is this still true?

What are some of the negative
side effects of tech?

- Many potential side effects...
- Three examples:
 - Mental health & social media
 - Economic health & middle class
 - Environmental health & climate change

Mental health: social media



Source: Haidt and Allen (2020)

- Note: much scientific **uncertainty** regarding social media
 - → unclear causal arrow
- Repeated worries: TV, video games, etc.
- Hypothesis that social media can help
- Yet concerns about how...
 - to navigate new ways for social engagement
 - internet's memory

Economic health for middle class?

- “American dream”
- Historically (industrialization):
 - tech **hurts** in the short run...
 - but **helps** in the long run: new jobs
 - Example: from labor/agriculture to services
- But post-industrialization: less clear
 - **Routine jobs** (=middle class) disappear (robots)
 - **“Winner-takes-all”** economy
 - Increase in far right vote share (Gonzales-Rostani)

Environmental health: climate change

- Modern economies depend on modern energy tech
- From human energy to animal (horses) to machines (steam)
- New services: electricity, transportation fuel, etc.
- Essential to allow industrialization

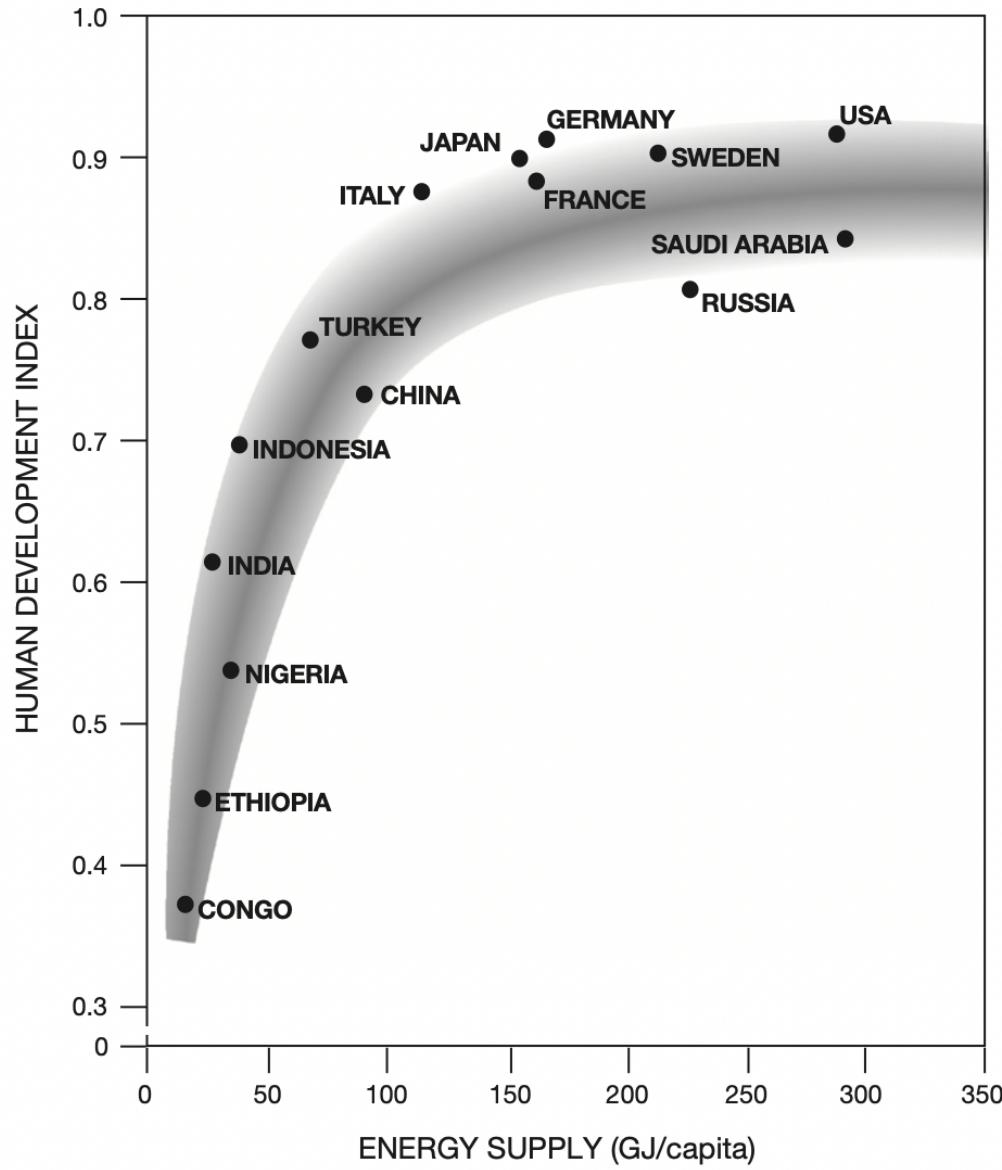
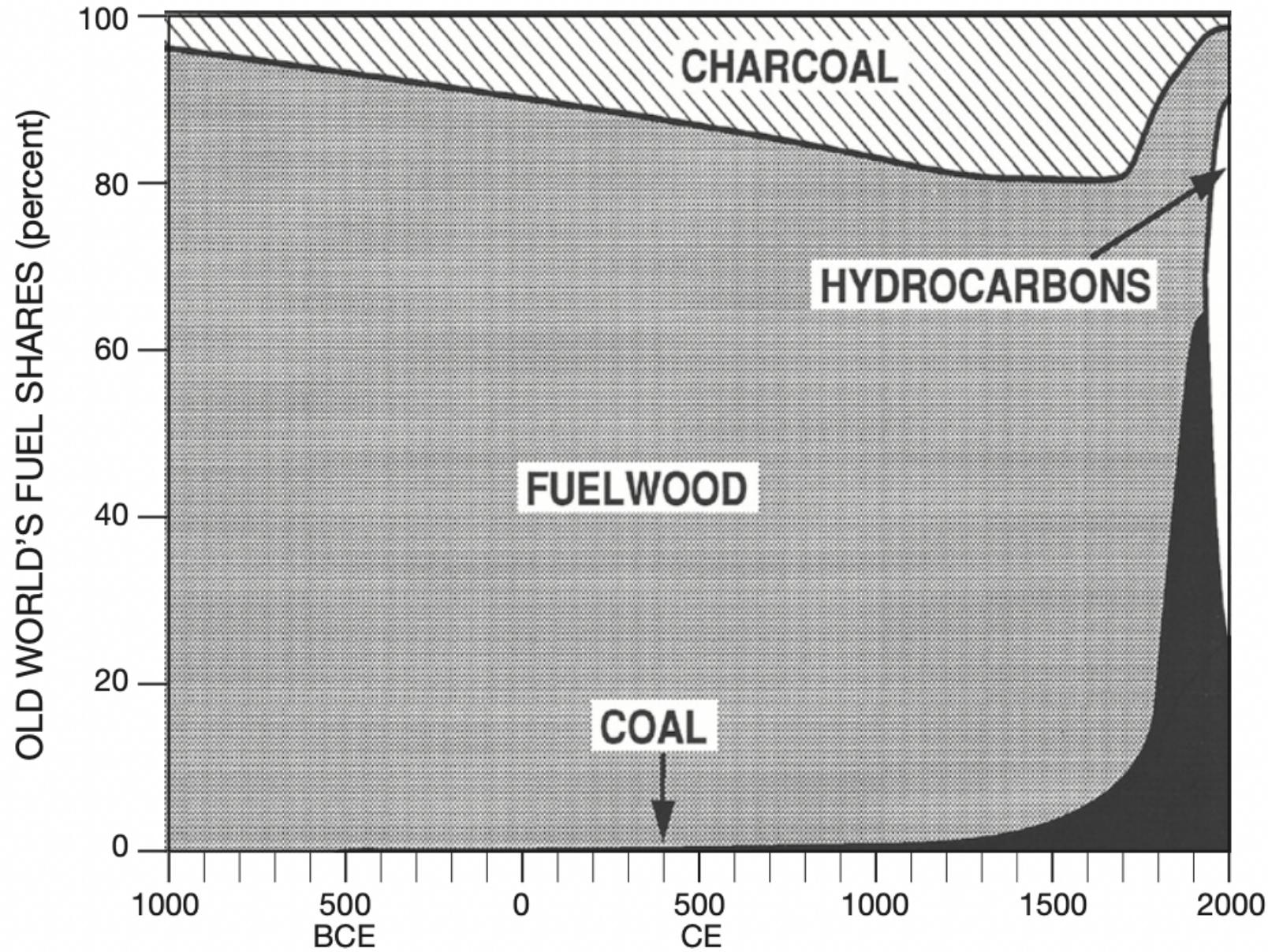
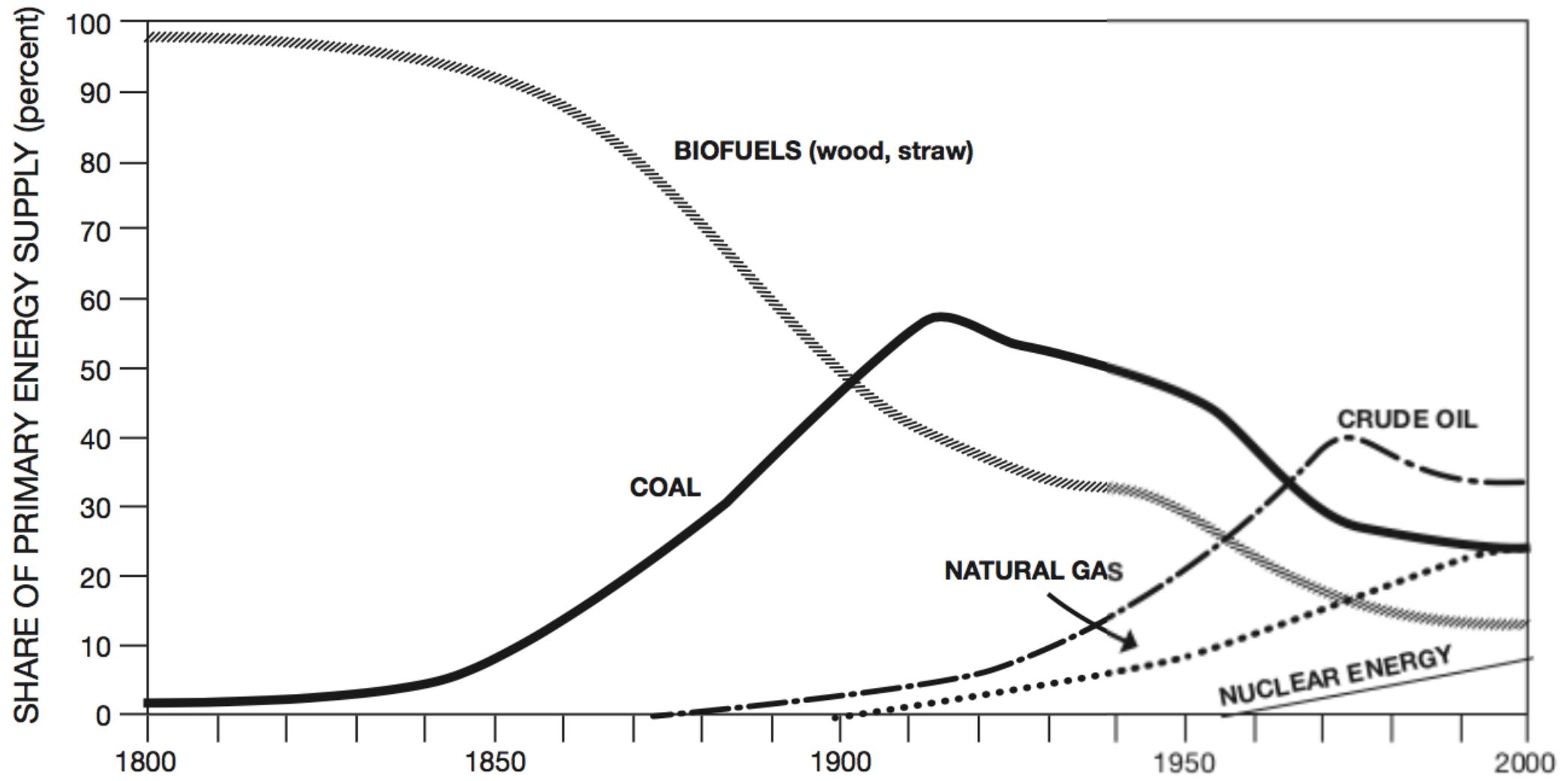


Figure 6.20

Source: Smil (2018)



Source: Smil (2018)



Source: Smil (2018)

Problem...

- Modern economies rely on fossil fuels (coal, gas, oil)
- When burned: generate greenhouse gas emissions
- Increase warming effect + destabilize climate
- Environmental consequences: temperature, droughts, etc.
- Social consequences: food shocks and conflicts

Fundamentally a problem of **sustainability**

How would you define sustainability?

What's Solow's view?

New problems

- 19th century: conservation movement (Sierra Club 1892: Muir, Pinchot)
- First half of 20th c: other priorities (WWI, WWII, Cold War)
- 1960s:
 - Concerns about air, water pollution (*Silent Spring*)
 - Concern about over-population ([Ehrlich 1971](#))
- 1970s/80s: concerns about ozone layer
- About the same time: concern about climate change

New politics

- Domestic: emergence of...
 - green **lobbies** (EDF 1967)
 - green **parties** (Germany, ...)
- International:
 - International env treaties (Montreal Protocol, 1987)
 - Enc activism: *Our Common Future* (Brundtland Report, 1987)

Sustainability

What defines **sustainable** development?

- Approach 1: “ecological” approach
- Brundtland report, *Population Bomb, Limits to Growth*

“every generation should leave water, air and soil resources as pure and unpolluted as when it came on earth... each generation should leave undiminished all the species of animals it found existing on earth”

- Policy implication: hard curb on consumption
- Thoughts?

- Impossible to implement + probably undesirable
- Approach 2: “economist’s” approach
- Solow, EDF, etc.
- From a *sustainability* perspective: you don’t owe future gen specific resources...
- you owe them the **services** that they provide
- Eg: we don’t owe “ipad kids” oil, we owe them the ability to travel from A to B at reasonable speed

How convincing is Solow's definition?

Conclusion

- Technology has generally been a +
 - (at least for material comfort)
- Technology has always been **disruptive** for society...
- ... but current changes in tech are different:
 - **simultaneous** crises (“polycrisis”)
 - **scale** of crises: global

Puzzle for this class:

How can we ensure **broad** sustainability?

Conclusion to Part I

- Familiar with ethics: welfare, consequentialism, utilitarianism, etc.
- Familiar with the relations between tech, growth, development, welfare
- If you care about welfare, and if you define welfare as dev, then tech innovation is **ethically just**
- But: not all tech is desirable! Negative side effects
- Next questions: where does innovation come from? How to stimulate good/discourage bad tech?

Questions?

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Source for title page painting: Quentin Matsys, *The Money Changer and His Wife*

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