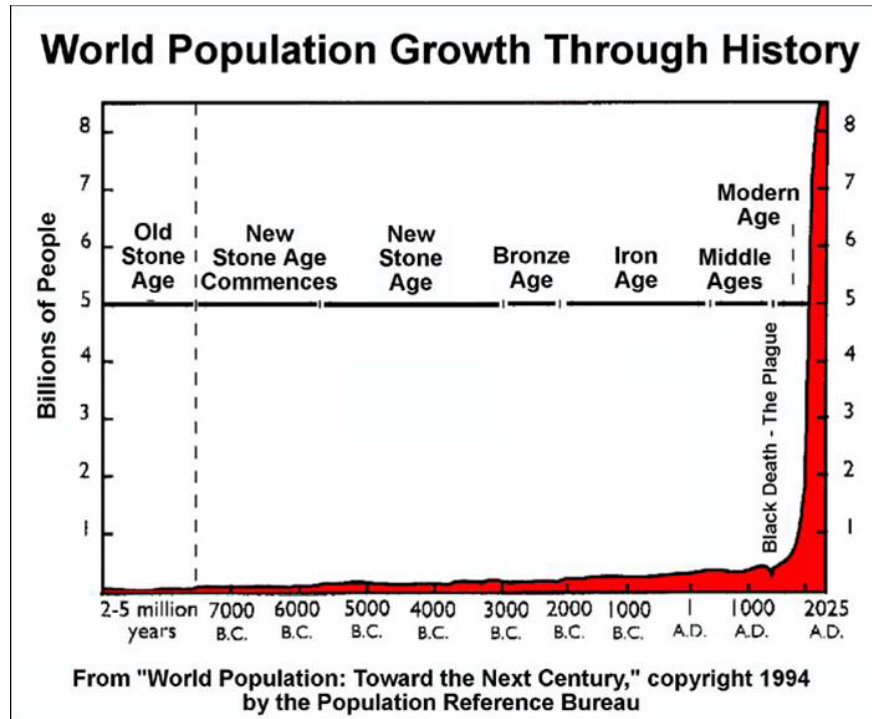


## TOPIC 25: THE FUTURE

### I. Population

- a. There are now seven billion people on the planet. Are there too many people?



- i. Many people say yes. Some go as far as claiming humans are too dangerous to exist. The above graph is from the Voluntary Human Extinction Movement's website (<http://vhemt.org/>). Their slogan is "May we live long and die out." Yes, this is a real organization.
- ii. Less radical environmental groups advocate drastically reducing population and cite pollution, famine, and limits of natural resources as evidence that our current population is unsustainable. The earth has a "carrying capacity" that we are in danger of exceeding (or already have).
- b. Are they right? To answer that question we have to first tackle a bigger one: What's "too many?"

### II. The economics of ideas

- a. Who is the greatest person who ever lived?

- b. Ideas are nonrivalrous, they grow as fast as people can think of them and they spread as fast as people can communicate
  - c. Ideas change everything
    - i. Proper incentives encourage answers
    - ii. Which is why economists care less about if a problem has a solution and more about if there's an incentive to solve it.
- III. The Ultimate Resource
- a. Markets are great institutions for solving problems, so much so that economist Julian Simon claims natural resources are *infinite*.
    - i. Remember, prices indicate scarcity: high prices imply the item is very scarce; low prices imply it is less scarce; no price implies it is not scarce; etc.
    - ii. A higher price creates an incentive to adapt (recall: a signal wrapped in an incentive).
      - 1. Find more sources, stretch what you have, create substitutes.
      - 2. Adaptations which were once not economical are now economical.
    - iii. The long run prices are decreasing even though population is increasing.<sup>1</sup>
    - iv. Since “finite” means “bounded” or “countable,” then the evidence suggests that resources are not finite. While no one denies the physical amount of, say, oil is finite, that physical amount doesn't matter. In reality we don't even know what it is. But in practice, for our purposes, resources are infinite.
  - b. Hence the ultimate resource: ideas.
- IV. Examples of failed scares
- a. Pre-history: flint
  - b. 1700s BCE: copper
  - c. 1200s BCE: tin
  - d. 550s BCE: disappearing forests in Greece
  - e. 1500s CE: disappearing forests in England
  - f. 1800s CE: coal and food
  - g. 1850s CE: oil
  - h. 1900s CE: rubber and timber in the US
  - i. 1920s CE: rubber again
  - j. 1930s CE: water in the US

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<sup>1</sup> Even when prices notably increase (such as the recent leap in oil prices), it's due to a genuine improvement in the world economy (see China). Contrary to doomsayers' beliefs it's usually demand, not supply which drive any long run upward trend in prices. And even these are temporary.

- k. 1940s CE: rubber *again*
  - l. 1950s CE: water again in the US
  - m. 1970s CE: metals, food, plant variety
  - n. 1980s CE: water *again* in the US
  - o. Scares of food, water, metal, and oil continue to plague the popular rhetoric
- V. Recycling
- a. It's tempting to think of recycling as something that should always be done because it saves resources. It's sustainable.
    - i. *Sustainable*—able to be maintained at a particular level.
    - ii. Consider a business. If you sell food at below cost, that's not sustainable. You can't keep doing that forever because you'll run out of food.
    - iii. In other words, in order to make our lives and livelihoods sustainable, the argument goes, we must recycle.
  - b. But recycling requires resources. Recycled material must be sorted, cleaned, and repurposed for the physical material to be used again. There's an opportunity cost; is it worth it?
  - c. One way to check is profitability. If all the resources used to make something out of recycled material is less than the resources needed to make that same thing out of virgin material, then you can make money recycling.
    - i. Profitability equals sustainability. As long as something is profitable, we can expect it to endure.
    - ii. But often, recycling is not profitable.
  - d. Is something trash or a resource? Look at prices! When prices render it cheaper to make out of virgin materials, the item is trash. When it's cheaper to recycle, the item is a resource.
    - i. There's a lot that goes into this calculation: not just the prices of harvesting new resources, the prices of repurposing old resources, the price the finished material could be sold at, and even the price of disposal.
  - e. Recycling is not inherently good, but it's not inherently bad, either. It's just a tool people have to adjust to changing circumstances.
- VI. Housing
- a. Housing, as we know, can be very, very expensive. Increasing shelter prices is the single biggest reason the price level creeps up year after year. Should we be concerned about running out of space?
  - b. Yes and no. Again, prices convey information and induce action. The higher housing prices encourage people to add to the housing stock

just as lower prices discourage additions. When housing prices flattened and then fell leading up to the Great Recession, housing starts (the number of new housing projects) plummeted. The supply curve slopes up.



- c. But that doesn't explain why housing prices continue to rise; you can see them rising for many years. Why hasn't the price stabilized?
  - d. Housing, like new technologies, has a long lag. It takes years for a project to go from planning to execution to completion.
  - e. Moreover, regulatory barriers and NIMBY (Not In My BackYard) attitudes make it difficult to start new projects. My own neighborhood is located near a metro stop. Metro wants to turn a parking lot they own into a high-rise development but local residents are resistant. They fear overcrowding in schools, traffic congestion, and, above all, maintaining their homes' value. The last thing many want to see is competition.
  - f. Landfills have similar NIMBY issues. There's plenty of space for landfills, but vested interests can make it difficult to act on prices.
- VII. Institutions Matter!
- a. Institutions: the rules of the game
    - i. The incentive structure matters a lot.
    - ii. Again, economists are more concerned about if someone has the *incentive* to solve the problem.
  - b. All things are not rosy.
    - i. Certain kinds of fish (i.e. tuna)
    - ii. Global warming
    - iii. Clean water in developing countries
  - c. Recall the tragedy of the commons.
  - d. So what's "too many people?" It depends on the incentives.