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Limits To Growth Book Review

Responding to Common Critiques of *Limits To Growth*, and Why This Still Matters

In an environmental science class at my previous school, our professor asked a stressful yet relatable question to the class on one of the last days of the semester: How do you feel about climate change? Do you think we'll have it under wraps before irreversible disaster? To which one of my then classmates answered with dismissive, toxic positivity, "I think everything will sort itself out. People come together in times of crisis and technology will develop quickly enough in response." Yet, these empty messages meant to appear like positivity sound more like arrogant dismissal. This unfounded optimism now reminds me of the common critiques that *Limits to Growth* receives, a nontechnical report of a study conducted in 1970 at the Massachusetts Institute of Technology. The study consists of a technological model that accounts for population growth, agricultural production, nonrenewable resource depletion, industrial output, and pollution generation, and assembles these elements to consider the implications of continued economic growth on the planet. Meadows' book has received both a lot of applause and a lot of criticism.

One of the first criticisms to *Limits to Growth* is that it approaches the problem of predicting the future too straightforwardly; one mathematical equation can not reveal to us what the future holds. But making predictions is part of human nature, and most of all, part of science. Before exploiting the world that we live in with no regard for the consequences, we should

understand how our planet works and what those consequences might be. In the same way investors want to know the full, transparent conditions of their investment, humans should want to know how their actions will affect the environment and themselves. Of course the mathematical model that bore *Limits to Growth* is a mere model at the end of the day, but it is also a precautionary visual that encourages its readers to think about our solely growth-focused economic model. Meadows herself addresses this concern on reducing so many conditions into one model: "There is not one inflexible world model; there is instead an evolving model that is continuously criticized and updated as our own understanding increases," (Meadows 1972, p. 91). This implies that, as our understanding increases, the model will increase in accuracy too. So far, their model constructed in 1970 has been either correct or even underestimating today's conditions.

A critique of a similar nature is that the model looks at the impacts of continued growth on the whole world and extends its time horizon to centuries. This means that the model can only look at very general assumptions, despite different parts of the world being affected by climate change in different ways, and that the farther we predict into the future, the less accurate our predictions may be. This is inherently true about research that reaches into time and space. However, this is also all the more reason why we should be practicing more precautionary behavior. Meadows contends that "To make equitable decisions, therefore, one must consider both space and time factors," (Meadows 1972, p. 85). If we act as we currently do (without complete information about potential consequences on the environment), we endanger ourselves and others needlessly. And to address the unequal effects of climate change on different parts of the world, Meadows correctly makes her readers ask themselves, "If wastes are dumped upstream, who will suffer downstream? If fungicides containing mercury are used now, to what

extent, when, and where will the mercury appear in ocean fish? If polluting factories are located in remote areas to 'isolate' the pollutants, where will those pollutants be ten or twenty years from now?" (Meadows 1972, p. 86). As economics and free trade exist today, poorer countries tend to bear the brunt of wealthier countries' consumption habits.

Similarly, some critics cite the failure of the Malthusian hypothesis in response to *Limits to Growth*, or otherwise provide themselves comfort in knowing that technology will continue to develop. Yet this claim is once again too idealistic. Technology will surely continue to develop, but at an unknown rate and technology itself often reinforces the feedback loop system of pollution. When it comes to safely circumventing a planetary and humanitarian disaster, a precautionary principle is certainly a more rational approach. Regardless, "This ignorance about the limits of the earth's ability to absorb pollutants should be reason enough for caution in the release of polluting substances," (Meadows 1972, p. 81). We need to acknowledge that our planet is finite and ecological processes like carbon sequestration have their own limits, too.

Another example of unfounded optimism in response to Meadows' work is that alternative energy sources such as nuclear fusion of hydrogen will most likely be tapped within the next few decades. However, Meadows points to the Second Law of Thermodynamics, which states that all energy humans use must and will dissipate as heat in some form. Even if we transition away from nonrenewable energy sources, alternatives like nuclear energy give rise to their own impacts on the environment. Indeed, nuclear energy produces another kind of pollutant: radioactive waste. Nuclear waste must be cooled in water. But marine life depends on these aquatic ecosystems, and "As increasing amounts of wastes enter the water and decay, the dissolved oxygen is depleted," killing any fish and other marine life that depend on the dissolved oxygen to survive (Meadows 1972, p. 79). Alternative fuel sources are not a significant

improvement from our current resources like fossil fuels, and instead shows that a decrease in overall consumption matters more than developing new ways to exploit natural resources.

Limits to Growth is often discredited as mere doomsday fiction. While there is reason to question all research, *Limits to Growth* has since been further supported by more research, including recent ones. For example, a 2014 study conducted at the University of Melbourne demonstrates that the trends predicted by the World3 model used in the research by Meadows and her team has so far been largely accurate. The trends predicted in *Limits* on the environment, the economy, and population follow very similar lines on graphs that show the present condition of those three factors (Turner 2014, p. 8). The research also shows that there is strong reason to believe that *Limits to Growth*'s overall predictions on the economy and the environment will continue to be correct for at least several more decades to come.

Research should always be questioned and further investigated, but it should not be dismissed altogether–especially without any substantial justification. This further demonstrates that we need to rethink our current economic system, because a limitless economy and a finite planet are inherently incompatible.

Sources

Meadows, Donella H., et al (1972). *The Limits to Growth*; a Report for the Club of Rome's Project on the Predicament of Mankind. New York: Universe Books.

Turner, G. (2014) 'Is Global Collapse Imminent?', MSSI Research Paper No. 4, Melbourne Sustainable Society Institute, The University of Melbourne.