



## Waking Up to Scenario Planning

Has anyone ever tried to motivate you to act on a pressing problem by presenting a “nightmare scenario”? By extending current trends into the medium or distant future, these scenarios are intended to illustrate outcomes deemed inescapable unless radical behavior changes occur. Whether the issue at hand is peak oil or crumbling infrastructure, well-meaning interlocutors often use this well-worn device to try to awaken people to desperate futures.

But this approach has flaws. Nightmare scenarios are depressing, and depression immobilizes those one hopes to mobilize. The remedies required to avert disaster usually seem intractable. And the supposed inevitability of disaster can actually generate a bizarre logic that exonerates non-response, with horrible implications.

For all of these reasons, a different type of scenario planning is called for, one the Lincoln Institute is embracing. Before I explain, let me illustrate the pitfalls of relying on nightmare scenarios with two examples—one from the history books, and one more current.

Thomas Malthus provided one of the earliest rhetorical uses of a nightmare scenario in his 1798 “Principle of Population” essay. In the essay, Malthus contrived a theoretical argument that reverberates today in economics and other social sciences (it was one reason economics was nicknamed the dismal science). Malthus postulated that population grew geometrically (following a 2, 4, 8, 16, 32 . . . pattern), while food production grew arithmetically (following a 2, 4, 6, 8, 10 . . . pattern).

In Malthus’s view, population growth is fueled by the seemingly unlimited human proclivity to reproduce and, importantly, increases when the poor become better off. Food production, to the contrary, is limited by the fixed supply of land and the law of diminishing returns. The relation between the two could only end in disaster. “Positive checks” like famine, plague, or war would lead to the premature death of a large share of the population and restore temporary balance. Malthus suggested that “preventive checks” like later marriage or celibacy, which would produce fewer children, might forestall disaster, but he doubted that humans would voluntarily exercise this kind of moral restraint. (An Anglican minister, Malthus advocated against contraception.)

Any mathematician knows that a geometric series, no matter where it starts, will eventually overtake an arithmetic series. This made Malthus’s proposition compelling—but the real world proved him wrong on all counts. Fueled by the Industrial and Agricultural revolutions, food production increased faster than population, even in the developing world, beginning in the 19th century. Population growth, for its part, began to abate in the 20th century as a result of the demographic transition driven by urbanization and rising education levels and employment opportunities for women. Across the world, as poverty levels fell, fertility fell commensurately.

Sadly, elements of Malthus’s theory remain with us—both in simple-minded efforts to predict future population-oriented cataclysms (see, for example, Paul Ehrlich’s *The Population Bomb*

[1968], the Club of Rome, or Cristina Luiggi’s 2010 essay “Still Ticking” in *The Scientist*) and in the muddled thinking of those who adopt and adhere to the logical extensions of his work.

The logical implications of Malthus’ theory are terrifying and persistent. They orbit ideas like laissez-faire, divine intervention, and moral hazard, but invariably blame the victim. Malthus opposed assisting the poor based on his assertion that making the poor better off would increase fertility and end in famine once food stocks ran out. Others espoused this view more fervently. Some 50 years after the publication of Malthus’ essay, Nassau Senior, a classical economist and member of the Chancery, wrote that the Great Irish Potato Famine of 1845 “would not kill more than one million people, and that would scarcely be enough to do any good.” Charles Trevelyan, assistant secretary of the British Treasury and the colonial administrator responsible for organizing famine relief, described the famine as an “effective mechanism for reducing surplus population” as well as “the judgement of God.” But no divinity shaped these ends. Throughout the famines of the 1840s, plenty of food was sent from Ireland to England—exports of meats, grains, and butter actually increased during the famine years.

The food supply hadn’t failed; only a single crop, the potato—the staple allowed to families of tenant farmers—had succumbed to blight. It was agricultural, social, and trade policy that failed.

During the 20th century, contemporary accounts of multiple famines, including those that caused the deaths of more than two million people in India in 1943 and an estimated 1.5 million people in Bangladesh in 1974, always invoked Malthus. Somehow, the thinking went, the local population had grown beyond its means and famine was the inevitable result. But these and other “Malthusian nightmares” had nothing to do with overpopulation or food shortages. They were the product of policy failures and ineffective responses. They illustrated a shrugging indifference predicated on the theoretical existence of Malthusian nightmares—a grudging admission that sometimes there’s just not enough to go around.

As much as it pains me to admit it, I adopted a nightmare scenario to drive my own policy advice. Over the last couple of years, I’ve frequently cited estimates for the global infrastructure investment that will be required to serve the additional 2.5 billion people who will be added to the world’s cities over the next 20 years.



When it comes to inspiring change, scenario planning can be a more effective route than focusing on potential disasters. Credit: Jon Nicholls/Flickr CC BY 2.0.

I even play a game with the audience, asking them to guess whether the needed \$91 trillion investment is larger than global gross domestic product—the total GDP of all of the countries of the world. It is.

Do I motivate audiences or depress them? I'm wondering whether I should address this challenge more affirmatively.

We need better ways to peer into the future, inform our thinking, and guide our actions. Luckily, we have at least one. The Institute recently launched the Consortium for Scenario Planning, an expert network of scholars and practitioners that is developing more disciplined and defensible methods to help those in urban and rural areas consider alternative future scenarios and find ways to bring desired scenarios to fruition. Scenario planning identifies alternative futures based on current reality, trends, and rigorous empirical analysis of driving forces of change. It accounts for the interconnectivity or interdependency of various systems, anticipates unintended consequences, and evaluates tradeoffs between actions and outcomes.

Scenario planning is first and foremost a process, a way of thinking and structuring decision-making that leverages the skills and wisdom of a large group of people. The consortium is developing software tools to overcome the challenges of working with many participants, managing large amounts of information, and leveraging data and new analytic techniques to quantify specific elements of a plan. Scenario planning engages numerous disciplines, each bringing different approaches and insights to inform and enrich the process. As environments become increasingly complex, constraints become more limiting, and the future remains uncertain, scenario planning can help groups of decision makers better navigate challenging terrain on issues ranging from affordable housing preservation to climate change adaptation to healthier and more equitable communities.

Interestingly, the field of scenario planning originated in the boardrooms of global petrochemical corporations—the very people who

coined the term “peak oil.” Instead of being immobilized by the realization that the commodity on which they depended would run out, the corporations chose to consider various future scenarios, find the one that suited them best, and figure out how to get there.

How might I have broached future urban infrastructure challenges as a novice scenario planner? Rather than contextualizing the challenge as an impossible investment that exceeds global GDP, I might have asked: based on reasonable projections of GDP growth, what will it take to come up with \$91 trillion over the next two decades? Global GDP in 2017 was around \$79 trillion, far less than needed infrastructure investment. In 2037, GDP is expected to be \$192 trillion, more than twice the investment needed. What will it take to make a cumulative investment of \$91 trillion in infrastructure? About 3.33 percent of global GDP annually. How do we prepare the cities of the world to receive and provide services to 2.5 billion new residents? By building the political will to get national governments to devote one-thirtieth of their respective GDPs to infrastructure investment. Somehow that doesn't seem as hopeless a task as coming up with more than 100 percent of current global GDP.

My decision to overwhelm audiences with a killer fact was a product of faulty logic and laziness. I wanted to awaken others to urban challenges and mobilize them around the urgency of acting now. But by contextualizing the challenge as virtually impossible, I risked immobilizing them. And I risked building a foundation for future lazy thinkers to accept a reality in which millions of urban residents are left unserved by infrastructure—no water delivered to their residences, no sanitation, no reliable transport to get them to their jobs—a scenario that will come to fruition if we don't invest. I fear the policy response then will be a familiar refrain: there's just not enough infrastructure to go around, so some will have to go without.

We can be better than that. And with the help of efforts like the Consortium for Scenario Planning, we will be. □