

ond wave of innovations will transform things at least as much as the interstate highway and the Internet did—and bring as much prosperity in the 2060s as the interstate brought in the 1960s, and the Internet in the 2000s.

The United States will also have created another foundation for its geopolitical power—it will become the largest energy producer in the world, with its energy fields protected from attack. Japan and China and most other countries are going to be energy importers. As the economics of energy shifts, other sources of energy, including hydrocarbons, will become less attractive. Other countries will not be able to launch their own space-based systems. For one thing, they will not have a military making the down payment on the system. Nor will any country have the appetite to challenge the United States at that moment. An attack on American facilities will be unthinkable given the now vast imbalance of power. The ability of the United States to provide much cheaper solar energy will create an additional lever for the superpower to increase its international dominance.

We will see here a fundamental paradigm shift in geopolitical realities. Since the start of the industrial revolution, industry has guzzled energy, which was accidentally and haphazardly distributed around the world. The Arabian Peninsula, which otherwise had little importance, became crucially important because of its oil fields. With the shift to space-based systems, industry will produce energy instead of simply consuming it. Space travel will be the result of industrialization, and an industrialized nation will produce energy at the same time as it fuels its industry. Space will become more important than Saudi Arabia ever was, and the United States will control it.

A new wave of American-generated culture will sweep the world. Remember that we define culture not simply as art, but in the broader sense of how people live their lives. The computer was the most effective introduction to American culture, far more profound than movies or TV. The robot will represent the computer's logical and dramatic conclusion. In a world that needs economic growth but no longer has a surging population, robots will become the driver of productivity, and with space-based solar systems there will be ample electricity to power them. Robots, still primitive but developing rapidly, are going to sweep the world, and will be particularly embraced by the population-constrained advanced industrial world, and by

countries that will be closing in on the first tier and nearing or passing population peaks.

Genetics science will continue to extend life expectancy, and will eradicate or bring under control a series of genetic diseases. This will lead to creating social instability. The radical shifts that have wracked Europe and the United States, transforming the role of women and the structure of family, will become a worldwide phenomenon. Deep tensions—between supporters of traditional values and new social realities—will become tense throughout the second-tier countries, and all major religions will wracked by them. Catholicism, Confucianism, and Islam will all be arrayed with traditional understandings of family, sexuality, and the relations between generations. But the traditional values are going to collapse in Europe and the United States, and they will then collapse throughout most of the rest of the world.

Politically, this will mean intense internal tensions. The late twenty-first century will become a period in which tradition tries to contain a medical and technologically driven upheaval. And since the United States will be the originator of much of the controversial technology, and its model of internal social chaos will be becoming the norm, it will become the enemy of traditionalists everywhere. To the rest of the world, America will be seen as dangerous, brutish, and treacherous, but it will be treated with caution—arrogant. It will be a time of international stability, regional stress, and internal unrest.

Outside the United States two powers will be thinking about space. One will be Poland, which will be busy consolidating its land empire and smarting at its treatment under the peace treaty of the 2050s. But Poland will also still be recovering from the war and surrounded by American allies. It will not be ready for a challenge. The other country thinking about space will be Mexico, which into the late 2060s will be emerging as one of the economic powers in the world. Mexico will see itself as a rival of the United States, and will be stepping onto the continental and world stage, but it will not yet have defined a coherent national strategy (and will be afraid of going too far in challenging American power).

There will be other emerging powers whose economies begin to surge: