

Promises and Perils Thinking and Emerging Technologies

Deborah G. Johnson
University of Virginia

Technology and the Good Life

Philosophy – Technology

Technology – Forms of Living (the Good Life)

The Good Life – Future Good Lives

Futuristic/Emerging Technologies – Promises and Perils

Promises and Perils Thinking is Popular

- Heinrichs, "The promises and perils of non-invasive brain stimulation" (2012);
- Wolpe, "Emerging neurotechnologies for lie-detection: Promises and perils" (2010);
- Nicholson, "The promises and perils of geoengineering" (2013);
- Eppler, "Information quality and information overload: The promises and perils of the information age" (2015).

Emerging Technologies

Because of the futuristic nature of emerging technologies, promises and perils seem the only possible framework.

Promises and Perils Thinking

Inherent Uncertainty

The Value and Limitations of Promises and Perils

Compare to Cost-Benefit Analysis

Cost-Benefit Analysis

1.

Overestimation of benefits/Underestimation of costs

Because promises and perils are less precise and refer to possible effects far more distant in the future, the potential for overestimation and underestimation is greater.

Cost-Benefit Analysis

2.

Nonquantifiable Costs and Benefits

The promises and perils framework does a better job of addressing non-quantifiable consequences, but lacks a single measure to facilitate trade-offs.

Cost-Benefit Analysis

3.

Accommodating the Distribution of Costs and Benefits

Because promises and perils need not be quantifiable or use the same measure, the framework seems better able to address distributional issues.

Cost-Benefit Analysis

4.

Unforeseen and Unforeseeable Consequences

Although the promises and perils framework cannot identify the unforeseen, it allows the unforeseeable to be part of the discourse.

Promises and Perils Thinking

Inherent Uncertainty

Sociotechnical Systems Perspective

Three Sources of Uncertainty

Artifactual
System

Meaning and Social/Moral Implications

Conclusion:

Does promises and perils thinking serve for emerging technologies?

It is futuristic

It has advantages over cost-benefit analysis

Coupled with a sociotechnical perspective, it allows us to evaluate stories