

Technological Singularity and Acceleration Studies

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THEME

Historical analysis of a broad range of paradigm shifts in science, biology, history, technology, and in particular in computing technology, suggests an accelerating rate of progress, however measured. John von Neumann projected that the consequence of this trend may be an “essential singularity in the history of the race beyond which human affairs as we know them could not continue”. This notion of singularity coincides in time and nature with Alan Turing (1950) and Stephen Hawking's (1998) expectation of machines to exhibit intelligence on a par with to the average human no later than 2050. Irving John Good (1965) and Vernor Vinge (1993) expect the singularity to take the form of an 'intelligence explosion', a process in which intelligent machines design ever more intelligent machines. Transhumanists suggest a parallel or alternative, explosive process of improvements in human intelligence. Yet the very term ‘Singularity’ also suggests the emergence of an ‘event horizon’, an epistemological barrier on our ability to understand the events that may follow it.

We invite submissions describing systematic attempts at understanding the likelihood and nature of these projections. In particular, we welcome papers examining the following issues from a philosophical, computational, mathematical, scientific and ethical standpoint:

- The nature of an intelligence explosion and its possible outcomes
- Safe and unsafe machine intelligence and preventative measures
- Technological forecasts of computing phenomena
- Projected impact of acceleration on science and society by 2050
- The nature of the Technological Singularity and its outcome
- Beyond the ‘event horizon’ of the Technological Singularity
- The prospects of various transhumanistic breakthroughs and likely timeframes