

# To Infinity and Beyond!<sup>1</sup>

Our Mission:

To Boldly Go Where No Mere Machine Has Gone Before, or Ever Will ...

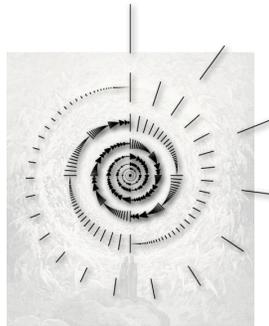
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October 11 (Thursday) 2012, 12pm, EMPAC at RPI, Troy NY USA

Computing machines, so the sanguine story goes, are getting human-level smart. After all, they can—thanks to IBM—play dynamite chess and *Jeopardy!*, and will soon—apparently thanks to Google—be driving all our cars and trucks. Yet, what’s the big deal? After all, these exploits are mole hills when stacked against the mountains conquered by the human mind. Chief case in point, as we shall explain and demonstrate: Human persons can venture to, and chart, the *infinite*; we can even, with help from EMPAC technology, *visualize* the infinite.

You’re invited to journey to the infinite, in EMPAC. We’ll visit a numberline that starts with quantities larger than any finite number; sequences that grow infinitely faster than the speed of light; and reasoning, powered as it is by infinitely long proofs, that allows us to surmount Gödel’s famous negative theorems about the incompleteness of mathematics. You don’t even need any special degrees or background to take the journey. Just bring something machines don’t have: imagination.

Along the way, we’ll point out that the infinite, when accessed by us, emits a kind of killer ray that vaporizes four claims made by some supposedly smart scientists: one, that all of mathematical cognition is reducible to simple problem-solving carried out by dogs and monkeys (Darwin); two, that mathematics is just a hum-drum human construction rooted in bodily motion and metaphor (Lakoff); three, that pure reason is no longer the preferred avenue for gaining human knowledge (Thagard); and four, that artificial intelligence will soon explode beyond human intelligence in an event fideistically venerated as “The Singularity” (Good, Kurzweil, Chalmers, e.g).



$0, 1, 2, \dots, \omega, \omega + 1, \omega + 2, \dots, \omega \cdot 2, \omega \cdot 2 + 1, \omega \cdot 2 + 2, \dots, \omega^2, \dots, \omega^3, \dots, \omega^\omega$

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<sup>1</sup>For those wishing to read ahead: Our infinitary journey will revolve around Goodstein’s Theorem; and the works we target: Darwin’s *Descent of Man*, Lakoff-and-Nuñez’s *Where Mathematics Comes From*, Thagard’s *The Brain and the Meaning of Life*, and—to pick but one in this sphere—Chalmers’ “The Singularity: A Philosophical Analysis” (*JCS*).