

The Technological Imperative for Ethical Evolution

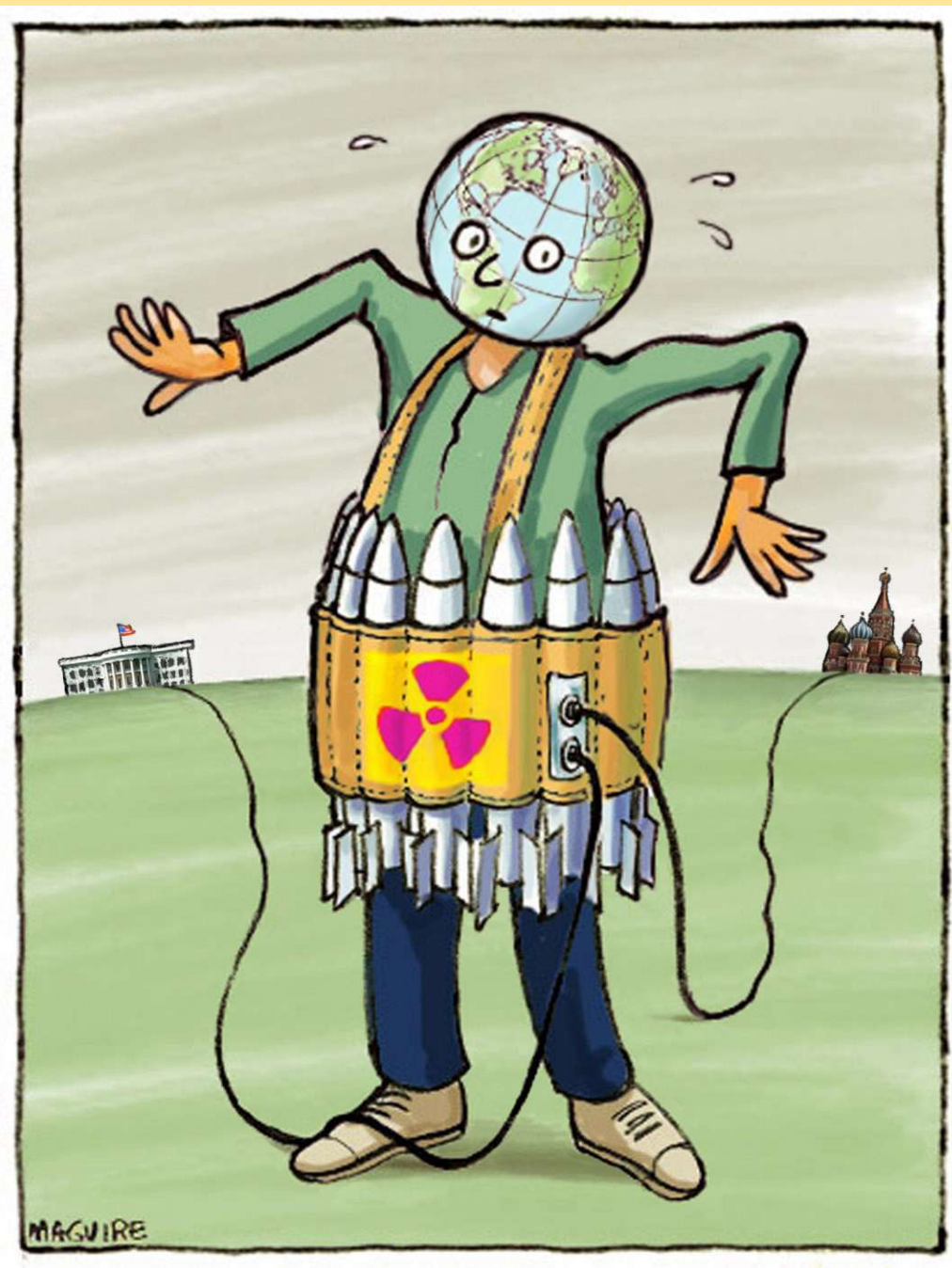
Prof. Martin E. Hellman
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Lesson #1: It's Easy to Fool Ourselves

- March 1975: NBS proposes DES.
- A 56-bit key has 2^{56} keys, which is about 100,000 million million.
- Whit Diffie and I estimated that a 1975 LSI chip could search a million keys/sec so a million parallel chips would take only 100,000 seconds (about a day) to search all 100,000 million million keys at a cost of \$US10,000 per solution.
- The cost was decreasing by an order of magnitude every 5 years.

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- Lesson #1: Its' easy to fool ourselves.
- Lesson #2: The value of outside help.
- Lesson #3: Friends are better than enemies.
- Lesson #4: Get practice by correcting even minor ethical lapses.
- Lesson #5: Ethics is an evolutionary process.
- Lesson #6: Technological advances make it imperative to accelerate that process.
- Lesson #7: There is great hope.
- Lesson #8: Everyone can play a role. No one alone can solve it.