

robots and their **human counterparts**

how AI and robotics could change **medical practice and its regulation**



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two words

cy·ber

/ˈsɪbər/ 

adjective

of, relating to, or characteristic of the culture of computers, information technology, and virtual reality.

"the cyber age"

synonyms: [electronic](#), [digital](#), [wired](#), [virtual](#), [web](#), Internet, Net, [online](#)

"our relationship was more cyber than face-to-face"



Translations, word origin, and more definitions

health

/heɪTH/ 

noun

the state of being free from illness or injury.

"he was restored to health"

synonyms: **well-being**, healthiness, **fitness**, good condition, good shape, fine fettle;

More

- a person's mental or physical condition.

"bad health forced him to retire"

synonyms: physical state, physical shape, **condition**, **constitution**

"bad health forced him to retire"

- used to express friendly feelings toward one's companions before drinking.

exclamation: your good health; exclamation: your health; noun: your health; plural noun: your healths





three characteristics

1.

autonomy

2.

emergence

3.

sociality

1.

autonomy





↑ machine autonomy = ↓ human control

2.

emergence

unpredictable **by design**

ALPHAGO
00:12:09



Google DeepMind
Challenge Match



LEE SEDOL
00:34:31

move #37



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IBM's Watson is better at diagnosing cancer than human doctors

TECHNOLOGY / 11 FEBRUARY 13 / BY IAN STEADMAN · 27



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IBM's *Watson* -- the language-fluent computer that beat the best human champions at a game of the US TV show *Jeopardy!* -- is being turned into a tool for medical diagnosis. Its ability to absorb and analyse vast quantities of data is, IBM claims, better than that of human doctors, and its deployment through the cloud could also reduce healthcare costs.

The first stages of a planned wider deployment, IBM's business agreement with the **Memorial Sloan-Kettering Cancer Center** in New York and American private healthcare company **Wellpoint** will see *Watson* available for rent to any hospital or clinic that wants to get its opinion on matters relating to oncology. Not only that, but it'll suggest the most affordable way of paying for it in America's excessively-complex healthcare market. The hope is it will improve diagnoses while reducing their costs at the same time.



IBM

human-in-the-loop

human-robot disagreement



responsibility

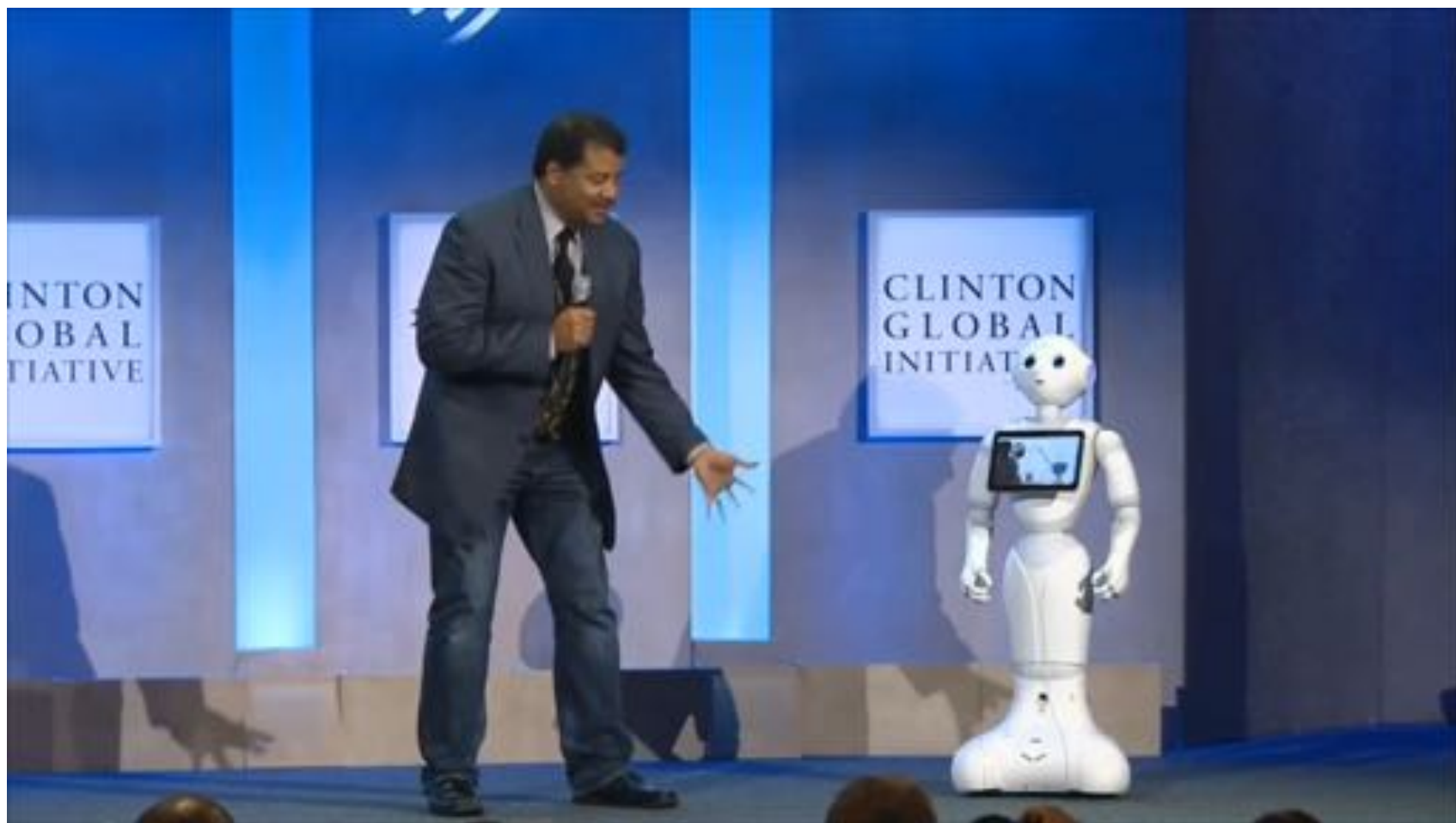
asimovian paradox

the **normative pull** leading to a decision to delegate to intelligent machines—namely, **evidence based reasoning**—generates a system in which we now have **no obvious evidentiary rationale** for explaining the outcome generated by the **intelligent machines**. All we have is a **hindsight case ...**

20//20

3.

sociality



↑ trust in machines = ↑ willingness to delegate

anthropomorphic design

the role of law



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