The Turing Test
&
Chinese Room Argument

CAPTCHAs

Completely Automated Public Turing test to tell Computers and Humans Apart

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MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—COMPUTING MACHINERY AND INTELLIGENCE

BY A. M. TURING

1. *The Imitation Game.*

I PROPOSE to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words 'machine' and 'think' are to be found by examining how they are commonly used it is difficult to escape the conclusion that the meaning and the answer to the question, 'Can machines think?' is to be sought in a statistical survey such as a Gallup poll. But this is absurd. Instead of attempting such a definition I shall replace the question by another, which is closely related to it and is expressed in relatively unambiguous words.

The new form of the problem can be described in terms of a game which we call the 'imitation game'. It is played with three people, a man (A), a woman (B), and an interrogator (C) who may be of either sex. The interrogator stays in a room apart from the other two. The object of the game for the interrogator is to determine which of the other two is the man and which is the woman. He knows them by labels X and Y, and at the end of the game he says either 'X is A and Y is B' or 'X is B and Y is A'. The interrogator is allowed to put questions to A and B thus:

C: Will X please tell me the length of his or her hair?

Now suppose X is actually A, then A must answer. It is A's

"Occasional hyperbole and flimflam aside, artificial intelligence is a wonderful subject, full of new ideas and possibilities, unfettered by tradition or concern (other than inspirational) for the accidents of human constitution, but disciplined by the limits of mechanical computation."
...
"Any attempt to create and understand minds must be of a philosophical interest. In fact, AI *is* philosophy, conducted by novel means."

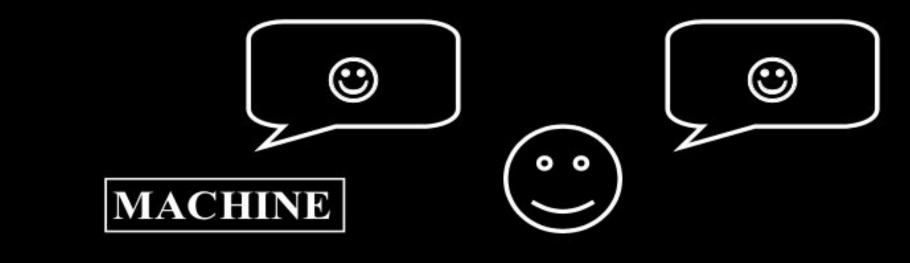Clark Glymour, Kenneth M. Ford, and Patrick J. Hayes
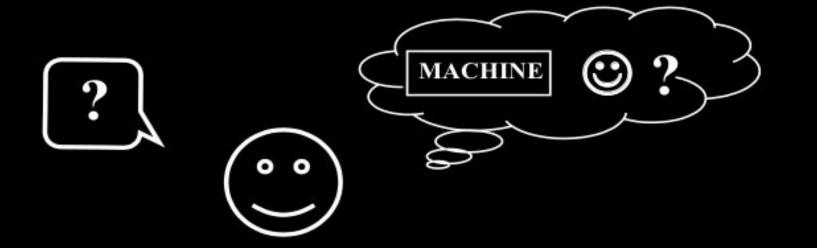
Turing begins by refining the question
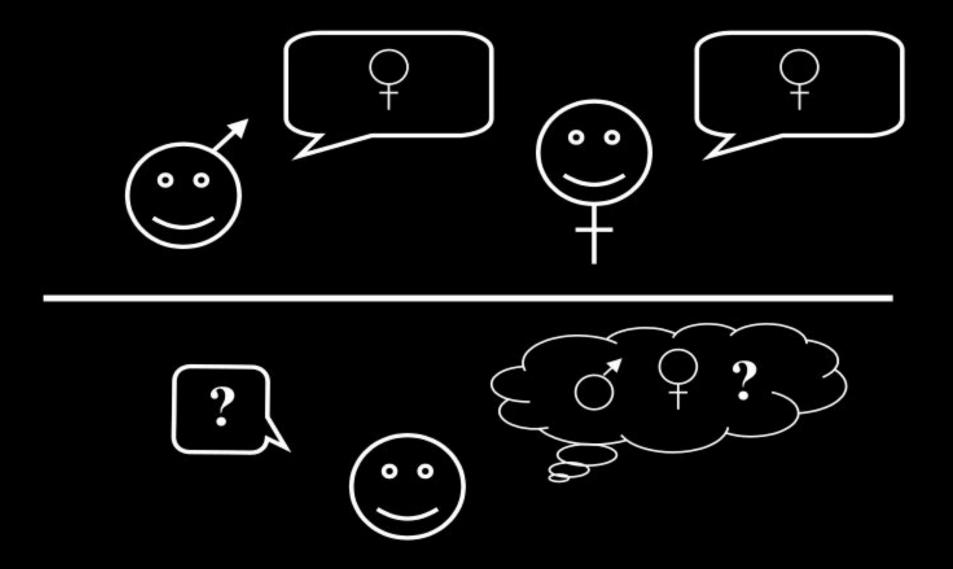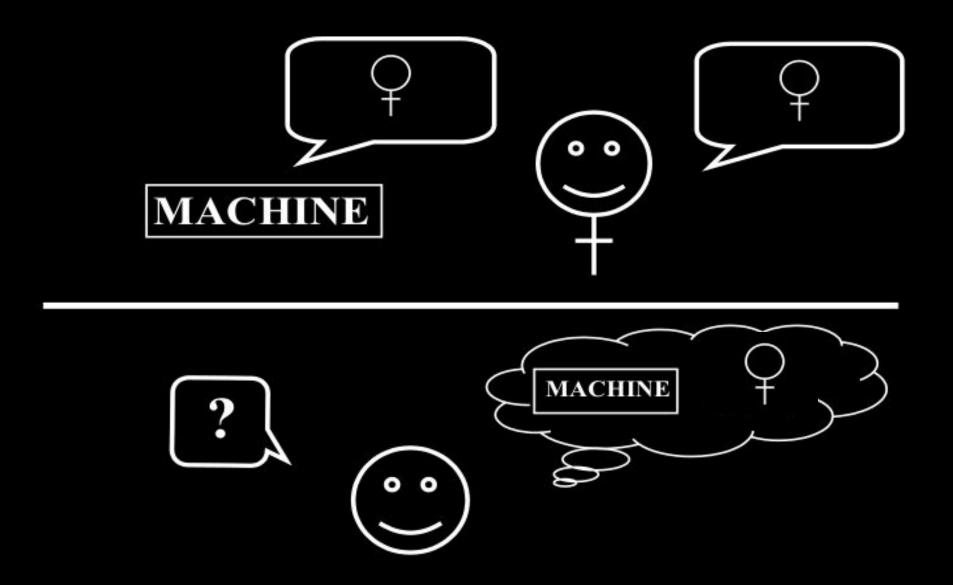
'Can Machines Think?'

↓
operationalize

'Are there imaginable digital computers which would do well in the imitation game?'

('Are there discrete state machines which would do well?')

Does the difference matter?

- The machine vs. human is taken as the *standard* interpretation

- Others (Saygin et al., Sterrett 2000) have argued that this closer reading is important
  - This makes it about comparing two forms of deception
  - The computer could outperform a human!
  - Seems to depend less crucially on the interrogator

Strong *vs.* Weak AI

- **Weak AI** = hypothesis that machines could possibly behave intelligently.

- **Strong AI** = the hypothesis that machines would have actual (as opposed to simulated) minds.

Shortcomings of the test?

Robert French's Seagull Test

Oft-discussed shortcomings of the test:

"too narrow, focuses on [conversational | intellectual | non-embodied | cultural] performance"

"not helpful in guiding research"

"not a criterion but evidence for intelligence"

Behaviorist (*cf.* Searle's Chinese Room)

Final words

"We can only see a short distance ahead, but we can see plenty there that needs to be done."