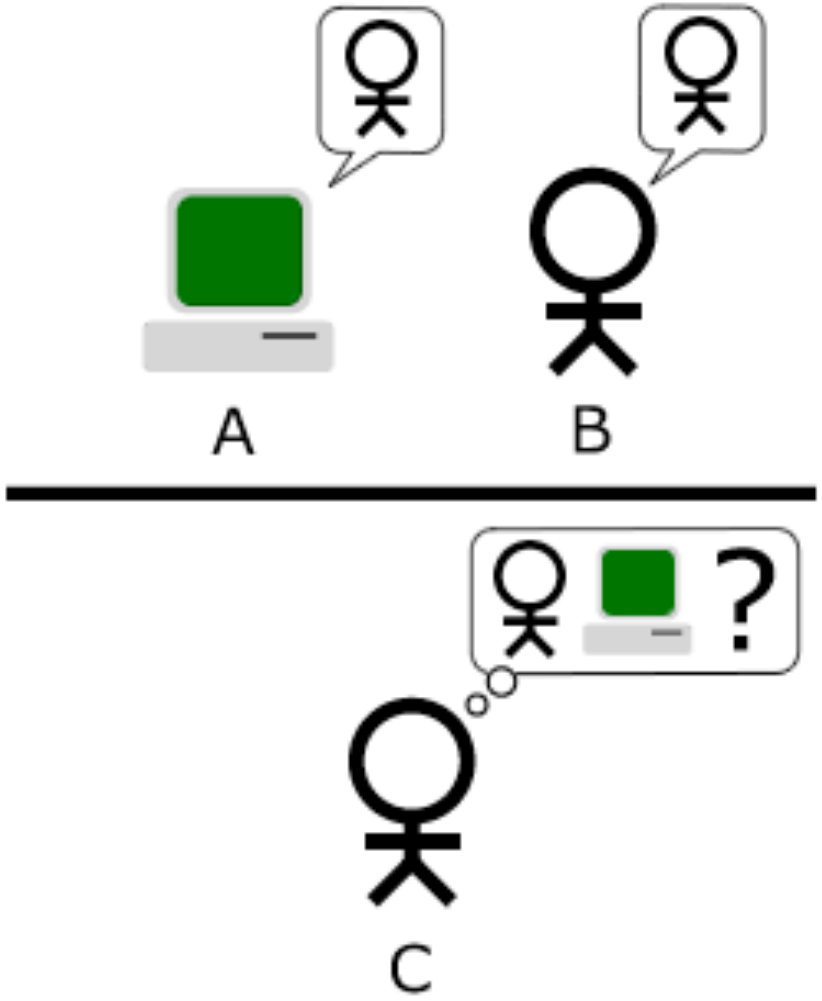
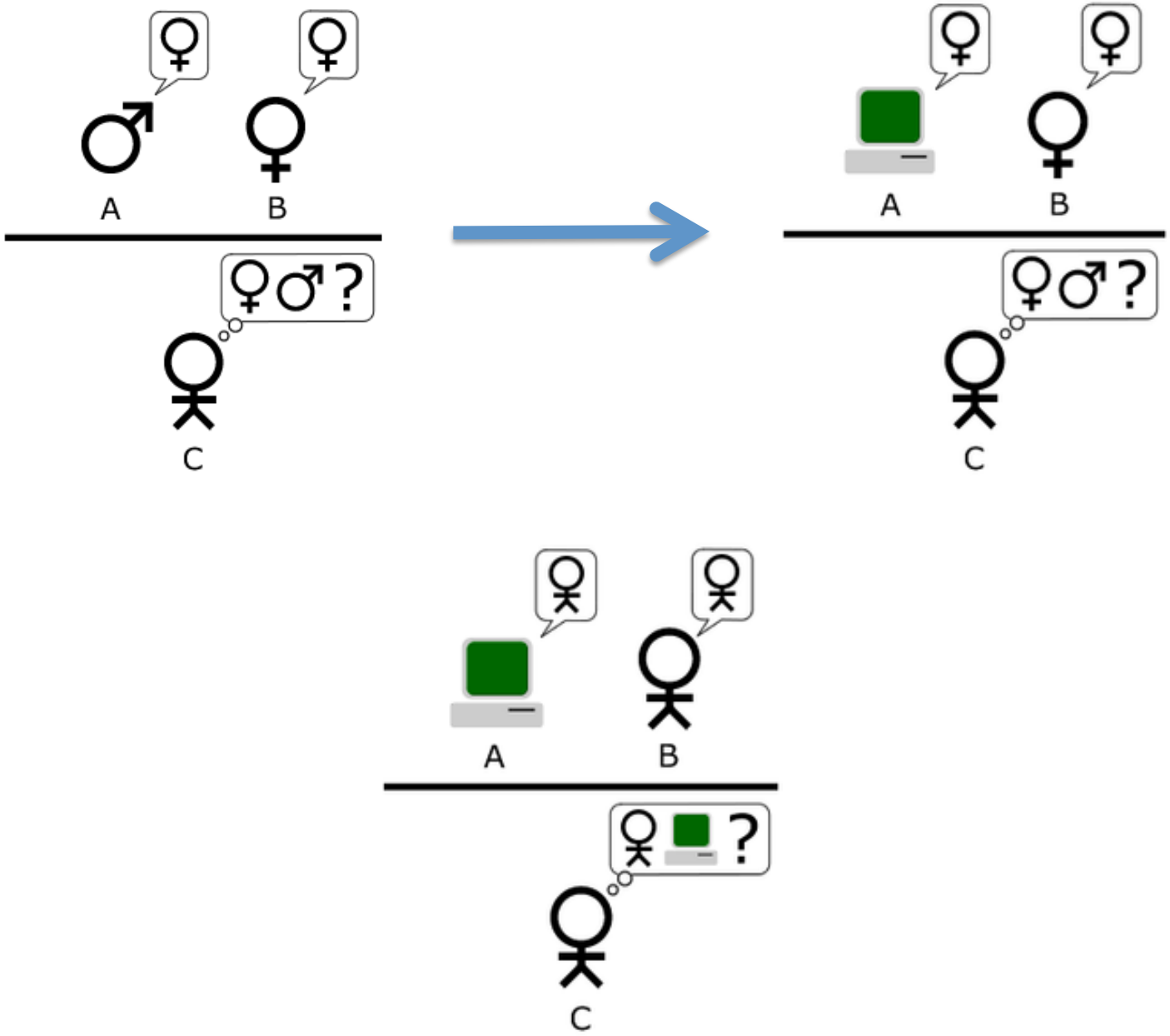
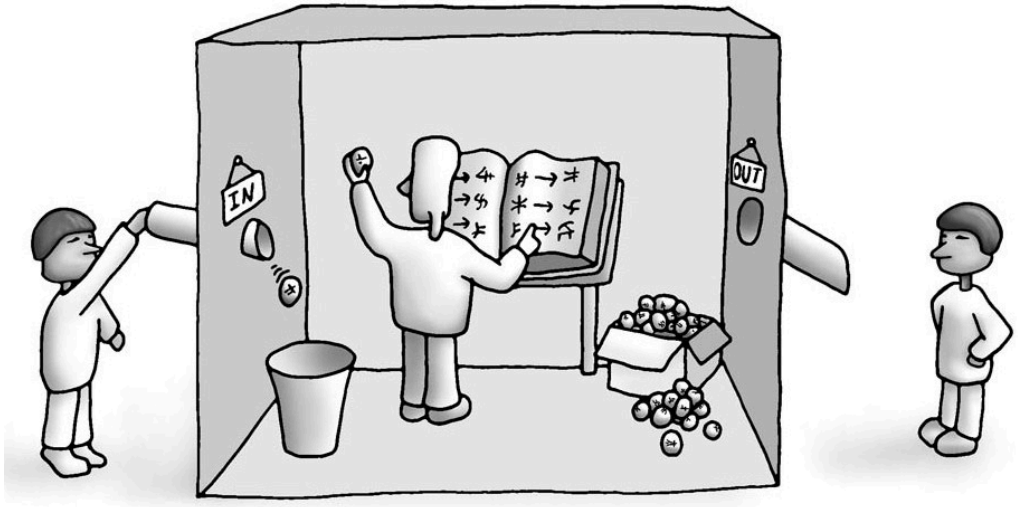
What is artificial intelligence?

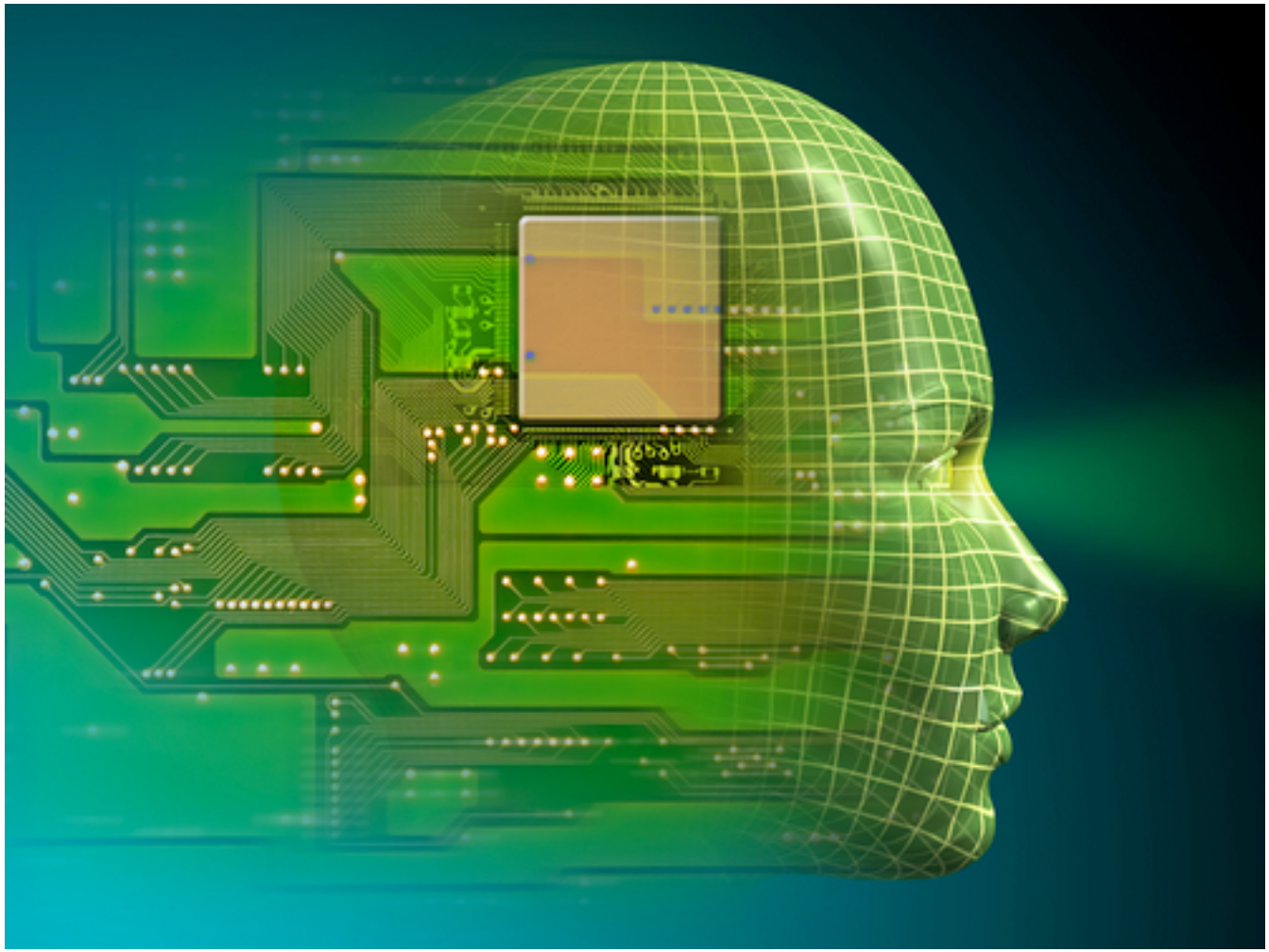
Answer #1: Acting like a human




A
B
C
A
B
C
A
B
C

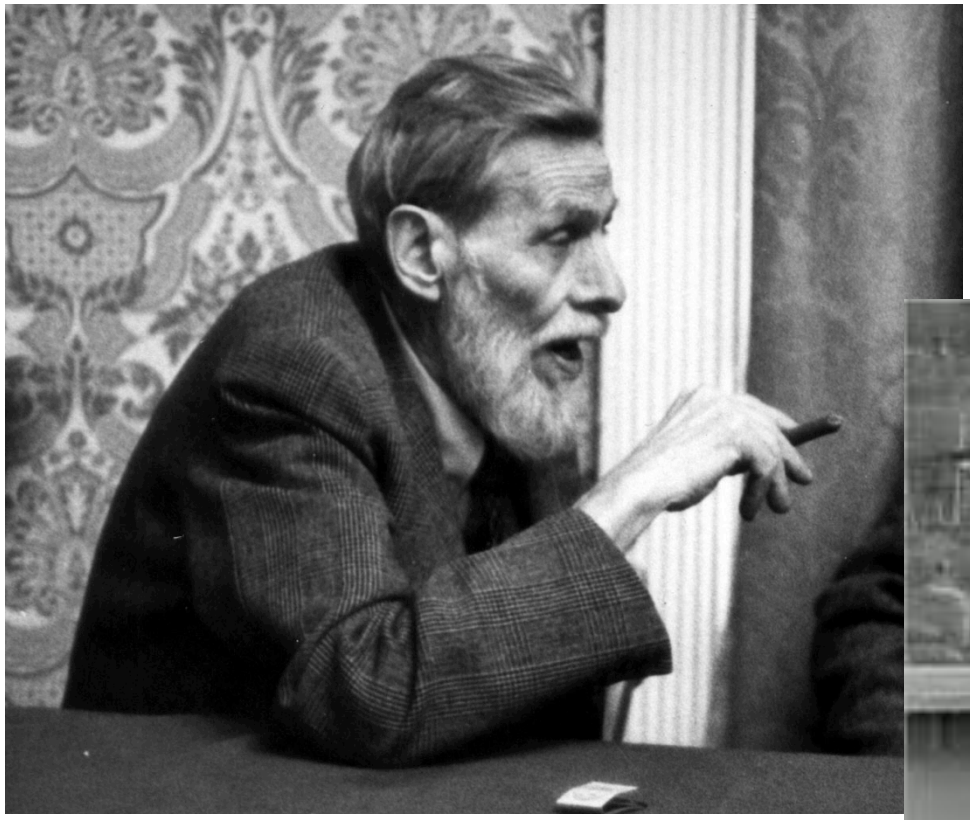

IN
OUT

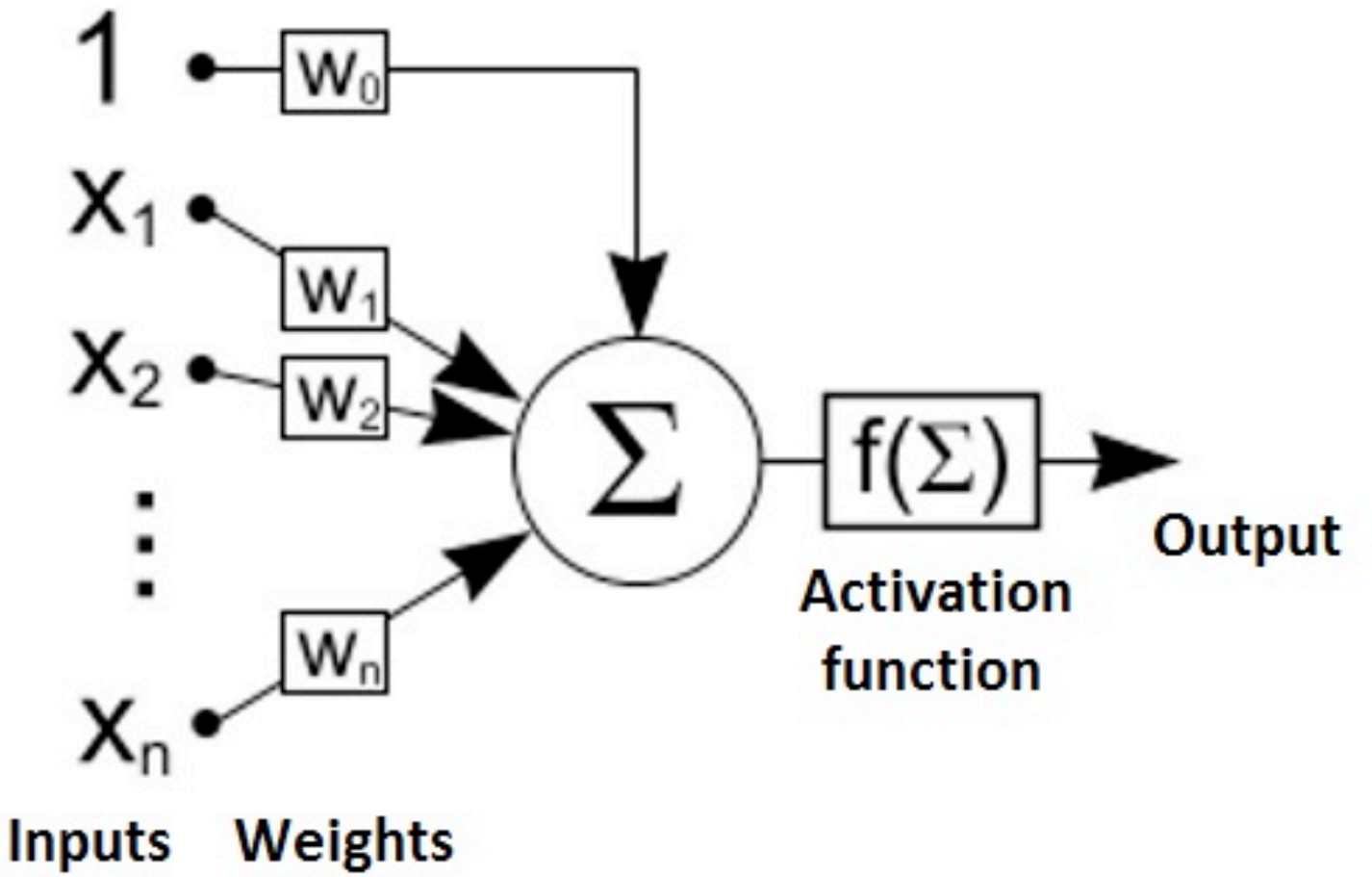
Answer #2: Thinking like a human



Answer #3: Thinking rationally

Answer #4: Acting rationally




1
w_0
x_1
w_1
x_2
w_2
Σ
$f(\Sigma)$
Output
Activation function
w_n
x_n
Inputs
Weights

VOL. LIX. No. 236.] [October, 1950

MIND

A QUARTERLY REVIEW

OF

PSYCHOLOGY AND PHILOSOPHY

I.—COMPUTING MACHINERY AND INTELLIGENCE

BY A. M. TURING

1. *The Imitation Game.*

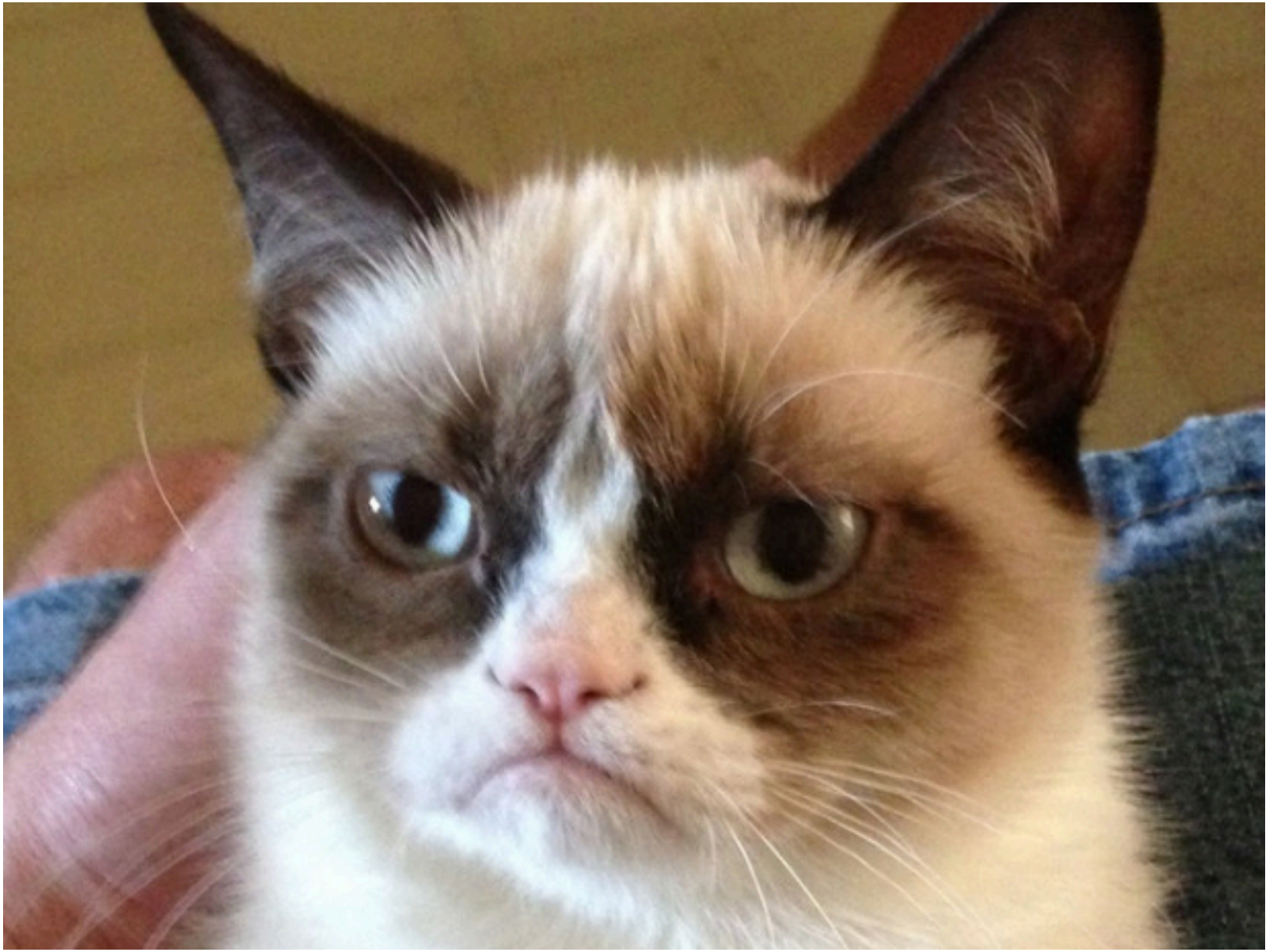
I PROPOSE to consider the question, 'Can machines think?' This should begin with definitions of the meaning of the terms 'machine' and 'think'. The definitions might be framed so as to reflect so far as possible the normal use of the words, but this attitude is dangerous. If the meaning of the words '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?

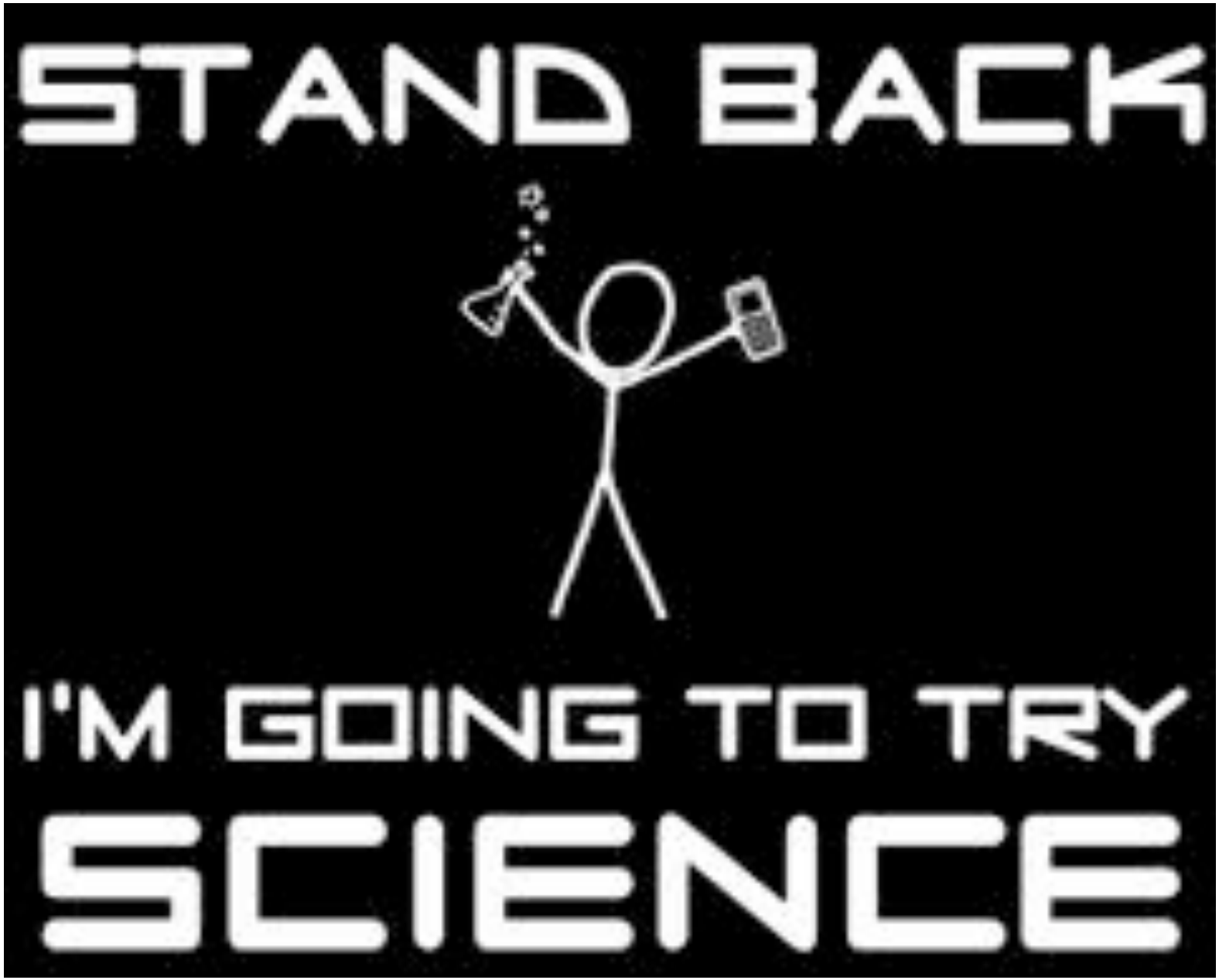
Now suppose X is actually A, then A must answer. It is A's

Trenchard More	John McCarthy	Marvin Minsky	Oliver Selfridge	Ray Solomonoff

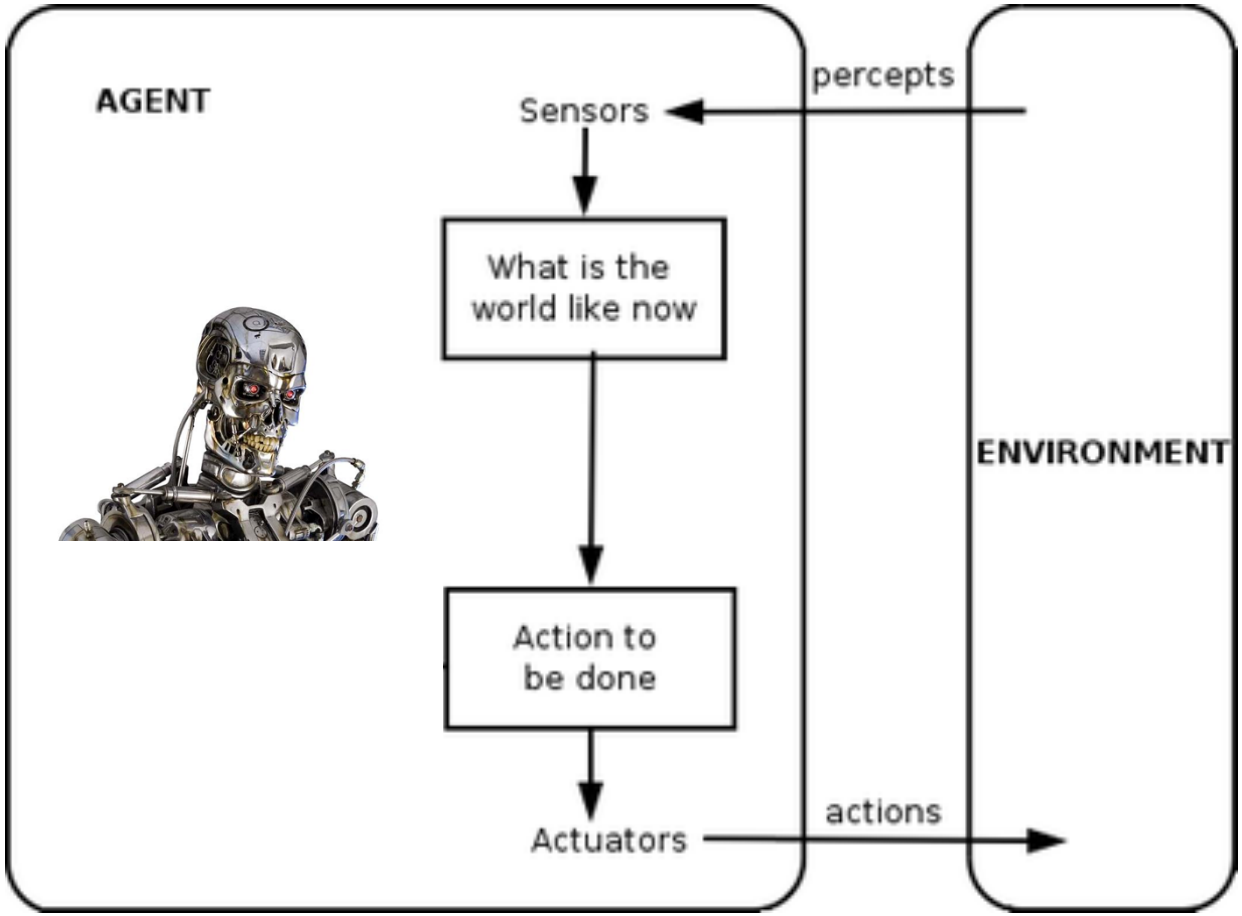


WINTER IS COMING
WE SHALL SURVIVE
!

BRACE YOURSELF
THE "WINTER IS COMING" JOKES ARE COMING
memegenerator.net


STAND BACK
I'M GOING TO TRY
SCIENCE

Agents



Agents interact with their environment through sensors and actuators.

Rational Agents

- Rational agent:
  - For every possible percept sequence, a rational agent should
  - select an action that is expected to maximize its performance measure,
  - given evidence provided by the percept sequence and whatever built-in knowledge the agent has.

Rational Agents

- Rational agent:
  - For every possible percept sequence, a rational agent should
  - select an action that is **expected to maximize its performance measure**,
  - given evidence provided by the percept sequence and whatever built-in knowledge the agent has.

Rational Agents

- Rational agent:
  - For every possible percept sequence, a rational agent should
  - select an action that is expected to maximize its performance measure,
  - given **evidence provided by the percept sequence and whatever built-in knowledge the agent has**.

Rational Agents

- Rational agent:
  - **For every possible percept sequence**, a rational agent should
  - select an action that is expected to maximize its performance measure,
  - given evidence provided by the percept sequence and whatever built-in knowledge the agent has.

Environments

- Fully-observable vs partially-observable
- Single agent vs multiple agents
- Deterministic vs stochastic
- Episodic vs sequential
- Static or dynamic
- Discrete or continuous