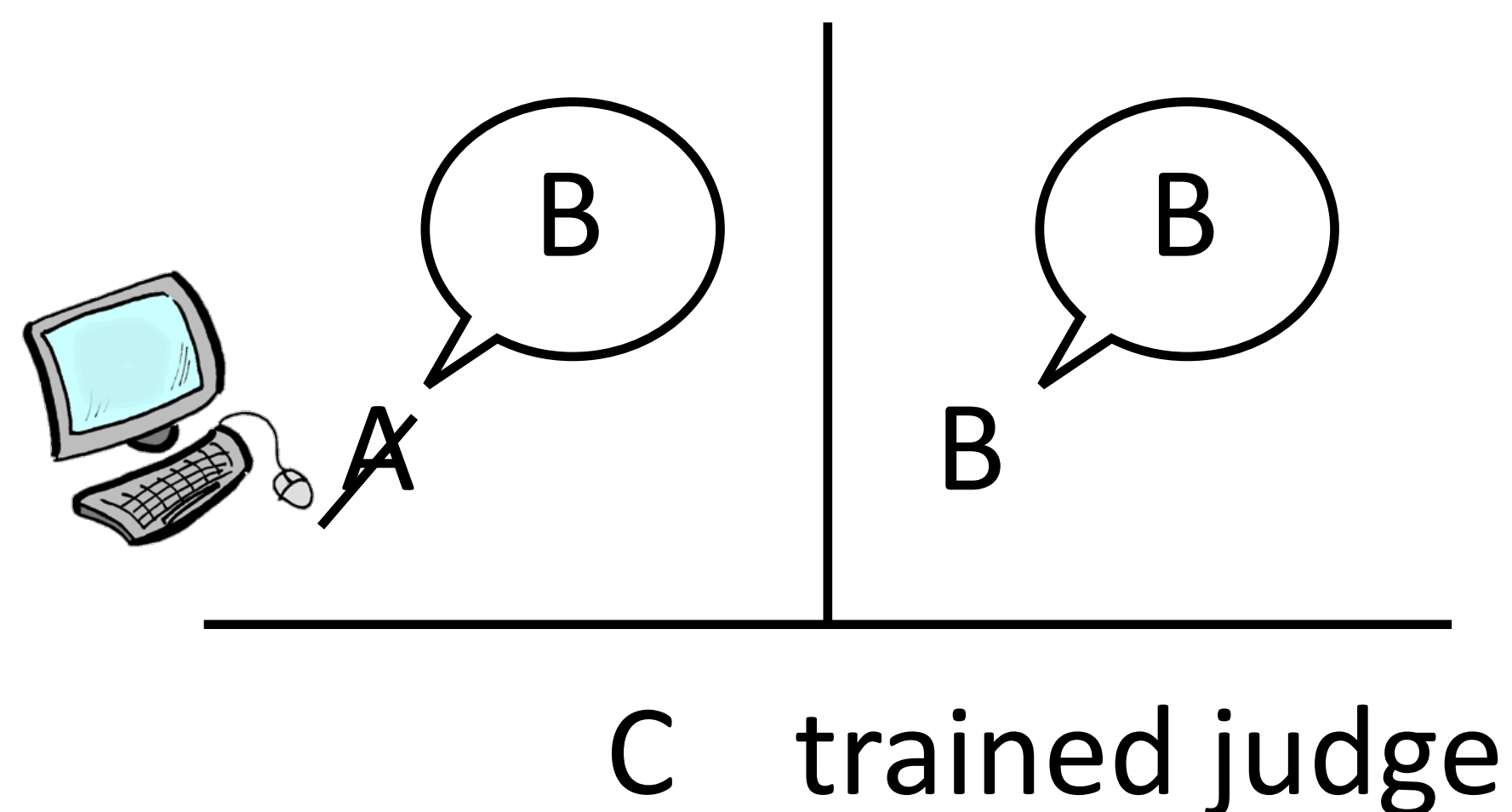


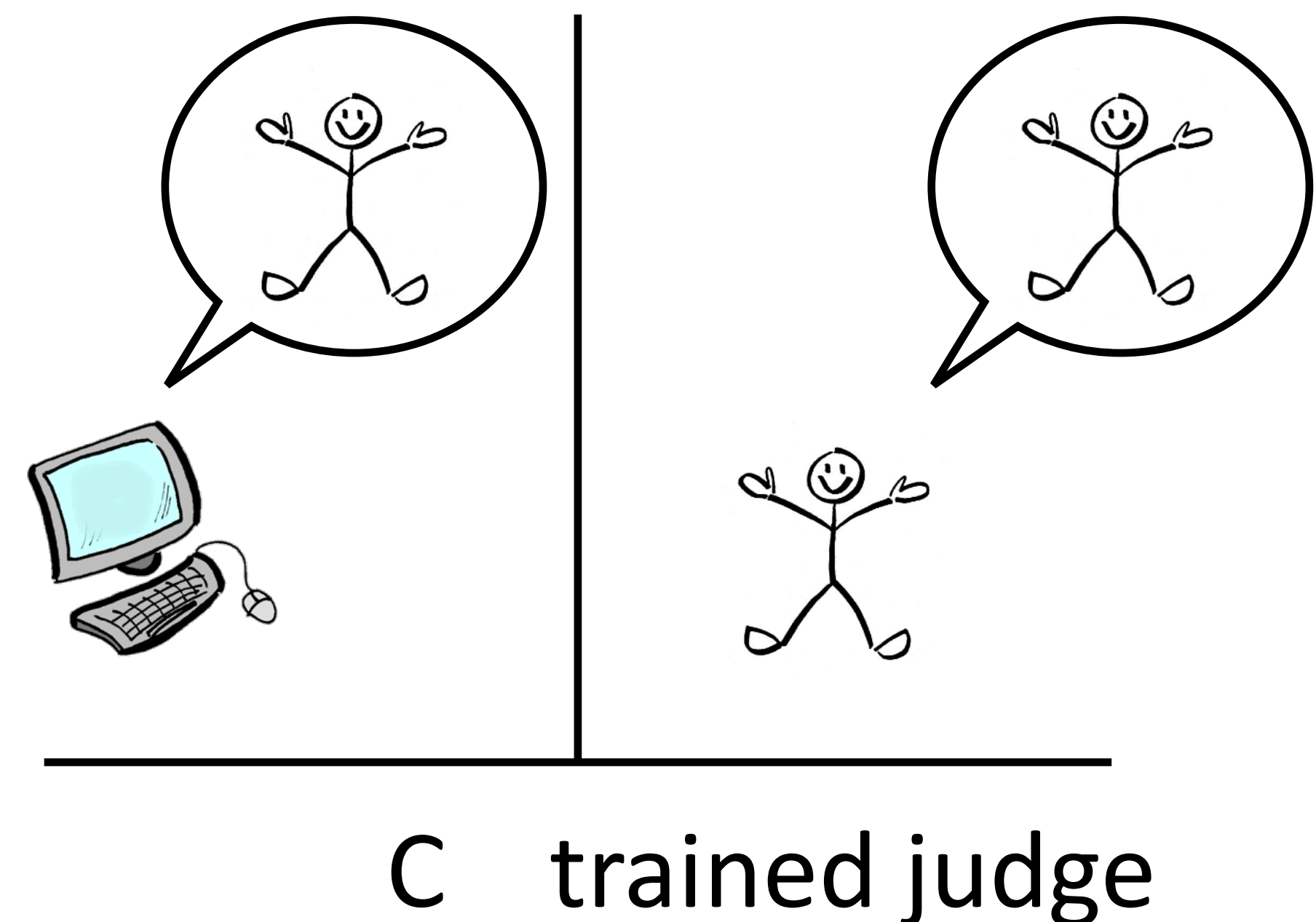
Chatbots: The Turing Test

- ▶ Imitation game: A and B are locked in rooms and answer C's questions via typewriter. Both are trying to act like B

Original Interpretation:



Standard Interpretation:



- ▶ The test is **not** “does this computer seem human-like to random people with a web browser?”

ELIZA

- ▶ Created 1964-1966 at MIT, heavily scripted
- ▶ DOCTOR script was most successful: repeats user's input, asks inane questions

You are like my father in some ways.

WHAT RESEMBLANCE DO YOU SEE

You are not very aggressive but I think you don't want me to notice that.

WHAT MAKES YOU THINK I AM NOT VERY AGGRESSIVE

You don't argue with me.

WHY DO YOU THINK I DON'T ARGUE WITH YOU

You are afraid of me.

DOES IT PLEASE YOU TO BELIEVE I AM AFRAID OF YOU

My father is afraid of everybody.

WHAT ELSE COMES TO MIND WHEN YOU THINK OF
YOUR FATHER

Bullies.

DOES THAT HAVE ANYTHING TO DO WITH THE FACT
THAT YOUR BOYFRIEND MADE YOU COME HERE

ELIZA

- Identify keyword, identify context, apply transformation rule

(.*) you (.*?) me



Why do you think I \$2 you?

My (.) (.*?)



What else comes to mind when you think of your \$1?

You don't argue with me.

WHY DO YOU THINK I DON'T ARGUE WITH YOU

- Very little need to generate new content, but can only have one type of conversation

Cleverbot

- ▶ “Nearest neighbors”: human says statement A, find a human response in human-human or human-computer chats to statement A, repeat that
- ▶ Can often give sensible answers, but the bot doesn't really impose high-level discourse structure

User: Hi there cleverbot.

Cleverbot: How are you?

User: Doing okay. what plans do you have today?

Cleverbot: I do revision.

User: What are you revising for?

Cleverbot: Maths history.

User: How old are you?

Cleverbot: That's none of your business.

User: What is maths history?

Cleverbot: I don't know, farming maybe

Chatbots as Translation

- ▶ Can treat as a machine translation problem: “translate” from current utterance to next one

what	.	.	.	■	■
time	.	.	.	■	■
u	■
get	.	■	.	.	.
out	.	.	■	.	.
?
	i	get	off	at	5

- ▶ Filter the data, use statistical measures to prune extracted phrases to get better performance

Chatbots as Translation

Status	MT-CHAT	MT-BASELINE
riding to the arc on my bike. Hopefully I won't melt into the pavement.	good luck on your bike ride arc	i ca n't wait for it ! i 'm arc is a year .
I really hate watching movies in the living room.	me too , what movies are you doing in room ?	me too ! i love those ?) in my mouth .
Hello Did I miss David Getting his teen choice award? Or did they not show it :(hello miss ? * he was getting his will probably win .	it 's just like what you just did the exact date hello ?

HUMAN
make sure to ride in the middle of the street
Why? no comfy spots or just too open to public
nothing yet...he presented though he is so darn cute