

Techno-Identity, Spring 2005  
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Assignment #9

**Turing mentioned that the suitability of the Imitation Game as a substitute for the question “Can machines think?” was debatable, but he never really returned to that issue. Do you think it is a good substitute? Why or why not? Why do you think Turing proposed this substitute?**

I think Turing proposed the Imitation Game as a substitute for the question “Can machines think?” because it is a much more concrete and well-defined test. The Imitation Game gets at the core of what some artificial intelligence researchers are primarily interested in – whether computers can effectively reason so as to demonstrate human-like intelligence to the extent that they can fool other humans into thinking that they are human themselves. Simply asking the question “Can machines think?” is too broad and undefined, and the answer to this question depends highly upon the semantics of how one explicitly defines both machines and thinking. The Imitation Game is a more well-defined and tangible way to study this complex question. I think it is a good substitute for this reason. However to truly get at the answer to the broader question of whether machines can think, it is probably necessary to supplement The Imitation Game with other concrete tasks which also convey a machine’s ability to reason with human-like intelligence in different scenarios.

**We can frame these questions in terms of signaling: "thinking" is the quality we wish to determine about the other, but it is invisible. We must instead rely on observable signals as indicators of this quality. Turing is proposing successful playing of the Imitation Game as the signal - is this a reliable signal of intelligence? What makes it reliable (or not)?**

While playing the Imitation Game, the outward signals that one is displaying are one’s ability to communicate effectively via written notes. Thus, the ability to use language coherently in the context of a back-and-forth written exchange is an important observable signal. This ability encompasses the skills of comprehending questions that are asked, forming coherent and logical responses to these questions, formulating one’s own questions, and linking together related concepts and topics such that there is a rational and comprehensible flow to the conversation. These abilities are not so much signals of intelligence as they are signals of one’s dexterity in using language to perform the role of a certain gender. In order to make these signals convincingly, one must not only have a solid command of language skills, but also possess a certain degree of common sense knowledge about the world. It is possible that a computer could have access to a common sense knowledge database (such as Open Mind at the Media Lab), and a reasonable command of language, such that it could successfully use these traits as signals in playing the Imitation Game. But it could still be argued that these are not reliable signals of intelligence, since the computer’s intelligence was programmed in by humans, and not acquired innately. Whether it is a reliable signal of intelligence can also be considered a semantic question, and depends on how one chooses to define true “intelligence”.

**Weizenbaum created ELIZA in part to show that simple communication was not a reliable signal of thought. He modeled it on a Rogerian psychologist: how did this framework help people communicate with the program? How did it affect their perception of its underlying intelligence? As you look at the various contemporary chat bots, think about and describe how the model of what type of being they are affects one's interpretation of their inner state.**

Rogerian therapy is based on the principle that the therapist must restate or summarize the ideas and feelings of the patient to the patient's satisfaction in order to show that he (the therapist) is listening closely to the patient, and is trying to understand precisely how the patient feels. The Rogerian therapist is supposed to avoid stating his own point of view; his primary goal is in motivating the patient to articulate her own mental state. In this way, the Rogerian therapist facilitates the process of putting the patient in touch with her own emotions, and enabling the patient to be able to heal herself, and answer her own questions.

This model enabled people to communicate effectively with Eliza - as a Rogerian psychotherapist, Eliza was not expected to produce original thoughts and ideas, but merely to repeat and rephrase the patients' questions back to them. As a computer program, Eliza was capable of these actions, and thus, Eliza's behavior seemed sound and reasonable to those who were familiar with the Rogerian technique. Consequently, people ascribed far greater underlying intelligence to Eliza than its creator, Weizenbaum, ever intended.

**In *Being Real* I discuss briefly the possibility of agents that use voice, video, etc. to communicate. How would such extended communication channels affect the reliability of the signal as an indicator of intelligence? If you are interested in exploring this question more deeply, a good starting point is Steven Harnad's paper "[Other Bodies, Other Minds: A Machine Incarnation of an Old Philosophical Problem](#)".**

Adding voice, video and other media to chat bot agents to enhance communication may negatively affect the reliability of the agent's signals to indicate intelligence, assuming intelligence is defined as being as human-like as possible. For example, text-to-speech engines can speak coherently but are not yet close to imitating the variability and inflection of actual human speech. Even the most sophisticated computer graphics programs cannot yet create believable simulated humans. One could substitute video and voice of actual humans to supplement the agent's speech, but this prohibits any possibility of spontaneous communication and gesturing, which could be used to expose an agent as a non-intelligent being. Thus, adding computer-produced voice and video to an agent's communication will likely decrease the perception that the agent actually possesses intelligence. The addition of voice and video might be a reliable signal that the agent is *not* really intelligent. But if voice and video technology can improve to the extent that they become human-like enough to be indistinguishable from real humans, then their reliability as signals to indicate intelligence would change; agents

with human-like voice and video might be perceived as being more intelligent than agents without these features.