

(This passage is excerpted from a philosophy textbook published in '03.)

In countless movies, computers play a starring role. Some talk in synthesized voices; others write a stream of words on a screen. Some manage spaceships; others, the “brains” of robots, manage their own “bodies.” People converse with them, are understood by them, exchange information and greetings with them. Much of this is still science fiction. But real computers advise lawyers on relevant cases, doctors on diagnoses, engineers on the state of atomic reactors. Both the fantasy and the fact would have astonished our grandparents. Their grandparents might have thought that this could only be achieved by magic. Yet most of us are getting used to it, taking the silicon age for granted.

Still, a suspicion remains. We human beings have always thought of ourselves as special. We all assume some contrast between the world of material things and the world of spiritual things. If the computer really is a “material mind,” then not only must we rethink this distinction, but we have broken it with our own creations. We should be careful to avoid such an important conclusion until we have really thought it through. However natural it seems to take it for granted that computers can think and act, then, we shouldn’t just assume it. In philosophy we often find that what we normally take for granted—the “commonsense” point of view—gets in the way of a proper understanding of the issues. So let’s see if the way I spoke about computers in the first paragraph is accurate.

I said that they talk. But do they *really* talk in the sense that people do? It isn’t enough to say that they produce something that sounds like speech. Tape recorders do that, but they don’t talk. When people talk they mean something by what they say. To mean something, they need to be able to understand sentences. Now I also said that computers understand what we say to them. But do they *really*? The sounds of our speech are turned into electrical impulses. The impulses pass through the circuits of the machine. And that causes the speech synthesizer to produce sounds. It may be very clever to design a machine that does this, but what evidence do we have that the machine understands?

Well, could a machine understand? There are two obvious responses to this question. The first response I’ll call **mentalist**, for the sake of a label.

It’s the response you make if you think that understanding what people say involves having a mind. The **mentalist** says:

Computers can’t really understand anything. To understand they would have to have conscious minds. But we made them from silicon chips and we programmed them. We didn’t give them conscious minds. So we know they don’t have them.

At the other extreme is the response I’ll call **behaviorist**. The behaviorist says:

Naturally, everyone should agree that some computers don’t understand. But there’s no reason why a computer couldn’t be made that does understand. If a machine responds in the same ways to speech as a person who understands speech, then we have just as much reason to say that the machine understands as we have to say that the person does. A machine that behaves in every way as if it understands is indistinguishable from a machine that understands. If it behaved in the right way, that would show that it had a mind.

It is clear why I call this response “behaviorist.” For the behaviorist says that to understand is to *behave* as if you understand.

What we have here is a situation that is quite familiar in philosophy. There are two opposing views—mentalist and behaviorist, in this case—each of which seems to have something in its favor, but neither of which looks completely right. Each of these views has a bit of common sense on its side. The mentalist relies on the common sense claim that machines can’t think. The behaviorist relies on the common sense claim that all we know about other people’s minds we know from what they do. It looks as though common sense here isn’t going to tell us if the mentalist or the behaviorist is right.

(This passage is from a book by a nineteenth-century British writer.)

I suppose none of us will doubt that everything possible should be done to improve the quality of the mind of every human being. — If it is said that the female brain is incapable of studies of an abstract nature, — that is not true: for there are many instances of women who have been good mathematicians, and good classical scholars. The plea is indeed nonsense on the face of it; for the brain which will learn French will learn Greek; the brain which enjoys arithmetic is capable of mathematics. — If it is said that women are light-minded and superficial, the obvious answer is that their minds should be the more carefully sobered by grave studies, and the acquisition of exact knowledge. — If it is said that their vocation in life does not require these kinds of knowledge, — that is giving up the main plea for the pursuit of them by boys; — that it improves the quality of their minds. — If it is said that such studies unfit women for their proper occupations, — that again is untrue. Men do not attend the less to their professional business, their counting-house or their shop, for having their minds enlarged and enriched, and their faculties strengthened by sound and various knowledge; nor do women on that account neglect the work-basket, the market, the dairy and the kitchen. If it be true that women are made for these domestic occupations, then of course they will be fond of them. They will be so fond of what comes most naturally to them that no book-study (if really not congenial to their minds) will draw them off from their homely duties. For my part, I have no hesitation whatever in saying that the most ignorant women I have known have been the worst housekeepers; and that the most learned women I have known have been among the best, — wherever they have been early taught and trained to household business, as every woman ought to be. A woman of superior mind knows better than an ignorant one what to require of her servants, how to deal with tradespeople, and how to economise time: she is more clear-sighted about the best ways of doing things; has a richer mind with which to animate all about her, and to solace her own spirit in the midst of her labours. If nobody doubts the difference in pleasantness of having to do with a silly and narrow-minded woman and with one who is intelligent and enlightened, it must be clear that the more intelligence and enlightenment there is, the better. One of the best housekeepers I know, — a simple-minded, affectionate-hearted woman, whose table is always fit for a prince to sit down to, whose house is always neat and elegant, and whose small income yields the greatest

amount of comfort, is one of the most learned women ever heard of. When she was a little girl, she was sitting sewing in the window-seat while her brother was receiving his first lesson in mathematics from his tutor. She listened, and was delighted with what she heard; and when both left the room, she seized upon the Euclid that lay on the table, ran up to her room, went over the lesson, and laid the volume where it was before. Every day after this, she sat stitching away and listening, in like manner, and going over the lesson afterwards, till one day she let out the secret. Her brother could not answer a question which was put to him two or three times; and, without thinking of anything else, she popped out the answer. The tutor was surprised, and after she had told the simple truth, she was permitted to make what she could of Euclid. Some time after, she spoke confidentially to a friend of the family, — a scientific professor, — asking him, with much hesitation and many blushes, whether he thought it was wrong for a woman to learn Latin. "Certainly not," he said; "provided she does not neglect any duty for it. — But why do you want to learn Latin?" She wanted to study Newton's *Principia* and the professor thought this a very good reason. Before she was grown into a woman, she had mastered the *Principia* of Newton. And now, the great globe on which we live is to her a book in which she reads the choice secrets of nature; and to her the last known wonders of the sky are disclosed: and if there is a home more graced with accomplishments, and more filled with comforts, I do not know such an one. Will anybody say that this woman would have been in any way better without her learning? — while we may confidently say that she would have been much less happy.