

The mind dependence of computation

computationalism

human mind is identical to a computer program, a piece of software implemented in the brain.

what, exactly, does something count as a computer in the first place?

the words and images appearing on the screen are intrinsically just meaningless patterns, shapes, and colors: **it is we who give them whatever meaning they have;**

Searle argues that the same thing is true of the electrical impulses produced by the striking of the keys, and of every other electrical impulse or mechanical operation that occurs within the brain-machine

In itself, the machine is nothing more than a hunk of plastic, steel, silicon, and wires, with electrical current running through it. **It counts as a computer, Searle suggests, only relative to us and our interests.**

it is we who really calculate when we use "calculators": the calculator itself is just a mechanical device, and the electrical current running through it, the images displayed on its screen) and the markings on its keypad are intrinsically without meaning. We give these things meaning and we do the calculating.

For this reason, **anything could in principle be used as a computer.**

all that matters is that the system thus used has a structure complex enough for us to be able to interpret its states as being stages in the program. To use an example of Searle's, the atomic structure of the wall is complex enough for there to be some configuration of events taking place within it, **at the micro-level, that could be interpreted as the implementation of a word processing program; in a sense, this wall is therefore "running" Word Perfect.**

we have no practical use for the wall as a potential word processor. Relative to our interests, it doesn't count as one, but in principle it could. And the things that do count as word processors and the like do so only because we find it useful so to count them.

Computation, Searle concludes, is an observer-relative phenomenon. There is nothing intrinsic to the nature of anything in the material world that makes it a computer, or that makes it true that it is implementing a program. **It is all a matter of interpretation: our interpretation.** If we decide to count something as a computer, it is one; if not, then it isn't. There is nothing more to it than that.

If computation is observer-relative, then that means that its existence presupposes the existence of observers, and thus the existence of minds; so obviously it cannot be appealed to in order to explain observers or minds themselves. That would be to **put the cart before the horse.**

It would be like trying to "explain" 'someone's appearance by appealing to a painting of her.

it is computation that must get explained in terms of the human mind, not the human mind in terms of computation.

So, the mind's ability to think in accordance with the laws of logic cannot be explained in terms of the brain's running a certain kind of program. The computational/representational theory of thought thus seems incoherent.

the computationalist account regards mental processes as the implementation of a set of algorithms. To implement an algorithm is to follow a set of explicit rules.

As **Hubert Dreyfus**, another influential critic of computationalism, has pointed out that any set of rules is capable of a variety of interpretations. It is possible to fix the interpretation of a given set of

rules by appealing to a set of higher-order rules, but that just pushes the problem back a stage, since these higher-order rules are themselves going to be susceptible to various interpretations.

we need to appeal to something outside the computer - a mind that interprets the rules.

we cannot explain the mind itself in terms of the following of algorithmic rules, for that such rules are to be given this interpretation rather than **that presupposes the existence of a mind.**

they truly count as rules at all, presupposes that there is a mind interpreting them as rules.

Some have tried to reply to Searle's argument -

for a system plausibly to count as implementing the computation " $I + 2 = 3$ " that it has states that correspond to "1" and "2" which are followed by a state that corresponds to "3." For what it does genuinely to count as addition, it must also be true that **had we instead counted the first two states as "3" and "4," the third state would have counted as "7".**

But this does not at all show that computation is not observer-relative.

We couldn't make a knife out of just anything - steel and plastic will do, but shaving cream and butter won't - but that doesn't undermine the point that some-thing counts as a knife only relative to our interests.

Not everything can effectively be used to express a word or sentence - ink marks and sounds will do, but cigarette smoke trails and water droplets are too formless and unstable - but that doesn't affect the point that **a given physical object only counts as a word or sentence if we use it as a word or sentence.**

Similarly, a machine has to have a certain level of complexity if it is going to be useful to us as a word processor or calculator, but that doesn't change the fact that its being a word processor or calculator is ultimately a mind-dependent phenomenon.

These last examples indicate that if Searle is right, his argument would apply not only to the "computational" part of the CRTT, but also to the "representational" part of it.

The CRTT, as we've seen, holds that we think in a "language of thought," where this language is realized in "sentences" somehow instantiated in the neural wiring of the brain.

Nothing is intrinsically a sentence; something's status as a sentence is entirely relative to our using it as one. In itself, a sentence is just a string of marks on paper, a series of noises, or whatever.

And this seems no less true of neural wiring patterns: there cannot literally be sentences in our heads unless we interpret some neural processes occurring there as being instances of certain sentences.

if sentences too are observer-relative, then they cannot be appealed to in an explanation of the mind and its thoughts. If one accepts the basic thrust of Searle's position, then, the "representational" aspect of the CRTT seems as incoherent as the "computational" aspect.