

Re: Perceptual symbol systems

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> *SN: In this regard, perceptual symbol systems conserve some qualities*
> > *of the thing it represents.*
> >
> > *GS: Here's an age-old question, Serg: If the representations of*
> > *qualities are "what is actually perceived" and perception depends on*
> > *representations, why do we not need a representation of the*
> > *representation and so on and on and on? And if one says that "this*
> > *sort of seeing doesn't require a representation" why can't one say of*
> > *seeing, in general, that it doesn't require a representation?*
>
> *SN: Think of representations as patterns of activation in groups*
> *of neurons that can be, for instance, associated with motor commands.*
> *You hear the phrase "press any key" and this fires a sequence of*
> *patterns that command your fingers to press a key. The patterns*
> *derived from the hearing of that phrase are a "representation"*
> *of some phonological qualities.*
>
> *GS: No, they are not. Representations are representations by virtue of*
> *function. For something to be a representation, it must control some*
> *of the same behavior as the thing it represents. A picture of a loved*
> *one, for example, functions in some of the ways the person does. If*
> *seeing the person is reinforcing than probably so is seeing the photo.*
> *But what you are saying is that virtually all causation is a matter of*
> *"representation."*

SN: Calvin and Ojemann have this interesting book called "Conversations with Neil's brain". Neil was a man which accepted to be "poked in the brain" during a surgery in his brain. He reports several sensations, such as scents, images, feelings. These were the result of electrical stimulations directly to the brain's tissue. This is an example of behavior (his verbal report during the surgery) which was produced because of nonsensory methods. Who can deny that his brain had "stored" some kind of information which produced that verbal report?

GS: I can and do. But then I respect the meanings of terms, while you and other cognitivists simply alter meanings to suit your philosophical assumptions. We have been over this many times – the least you could do is

give some sign that you understand my position; after all, I understand yours perfectly, and have for more than twenty years. Again, the brain is changed by one's history, but it does not follow that anything has been "stored." By the way, Penfield did the same thing and similar claims were made about his work. But one thing that was clear was that the "memories" sometimes depended on the current context and worse, they were frequently "memory illusions." A person would remember ol' Aunt Betsy cooking bread in the house in Boston – only Aunt Betsy died before the move to Boston, etc.

SN: Why is it so insane to call this a "representation"? Why is it inadequate to study these representations? Why should researchers be in danger for thinking about these things?

GS: I suggest you read a paper entitled something like "Representationalism and the Obfuscation of Memory" by some folks that are too stupid to see how behavioristic they are. Also, think about why it wasn't until fairly recently that it was discovered (or at least taken seriously) that people will remember things quite vividly that never occurred, such as the Roediger and Mcdermott (sp?) effect, and what this suggests about "information" in the environment being stored as representations.

> SN: *And who said we can't have representations of representations? Why would that be impossible or even awkward? Just because something seems to be derived from another, it doesn't have to be so up to infinity. Representing representations is a topic studied in metacognition.*

>

> GS: *When I push the button up on my flashlight, a bunch of photons come out. When I pull the trigger on a pistol, a bullet comes out. Is any of that "representation?" Anyway, the problem with saying that the world must be copied in order to be seen (and it IS always humorous when mainstream psychologists do attempt some kind of analysis of concepts) but not all of the copies need copies to be seen, is that it simply invents two kinds of seeing to cover an obvious flaw in reasoning. If seeing requires copies, then copies must require copies to be seen because seeing requires copies. If one just says "Oh seeing a representation doesn't require copies" then one wonders why any seeing requires copies at all.*

SN: When an engineer "sees" a bridge in his mind before it put it on paper and before it is built, he/she is manipulating this representation (in other words, he/she is "thinking").

GS: I disagree. What a person does is some of the same things they would do if they were "thinking on paper," which is probably more how they do it.

SN: When a mathematician verifies a proof of a theorem in his mind, he/she is thinking about it, or to say it in another way, he/she is manipulating representations.

GS: I disagree. What a person does is some of the same things they would do if they were "thinking on paper," which is probably more how they do it.

SN: When

one accepts this description of affairs (no matter if it seems a bit fictitious), one has a chance to try to understand what are the processes being used by the engineer and the mathematician. This is not only useful to understand how humans develop and use specific heuristics, but also to help us think about how to improve it.

GS: No, it will only be useful if it is not a sort of alchemy.

- > *Oh, yeah, metacognition – you guys really are so clever.*
- > *Metacognition! Such a lofty sounding phrase.*

SN: If you don't like the word, substitute it for "thinking about the way we think".

GS: I prefer "muddled thinking about thinking."

- > *SN: Think about how many uses you can find for a plastic bag. You*
- > *don't*
- > *have to say all of them, just to give an estimate of the number of*
- > *uses. Is it 2? 10? 100? Now think of the uses you can find for a Space*
- > *Shuttle. Is it 3 or 10 or 20? All of us can make an estimate about*
- > *these numbers (it is not important if it is accurate or not). At this*
- > *moment, we are representing representations.*
- >
- > *GS: Oh. Is that what we are doing?*
- >
- > *SN: In fact, the ability of humans to "know" what one "knows" is part*
- > *of our greater intelligence when compared with other animals. And*
- > *if you need another example, here it goes: what we are doing here*
- > *right now is that thing of thinking about what we know, considering*
- > *and committing to memory information about what we know, and also*
- > *about what the other poster knows (and I "know" that you'll probably*
- > *be tempted to poke fun at me because of this last phrase ;–).*
- >
- > *GS: Yeah, and God knows that it is hard to find anything humorous*
- > *about what you say. In any event, as I have told you, "self-knowledge"*
- > *may be generated in non-humans by arranging the sort of contingencies*
- > *that "make us aware of our own behavior." At least, that is one kind*
- > *of self-knowledge. But it is well worth noting that it is not a*
- > *scientific analysis of our behavior or our physiology even though such*
- > *analyses do or will eventually (in the case of physiology) shed light*
- > *on that kind of knowing, and behaviorism has led the way in analyzing*
- > *self-knowledge.*

SN: The "self-knowledge" and the perceptual abilities of pigeons is extraordinarily different from that of a monkey,[]

GS: Maybe, maybe not.

SN: []and I have serious studies to back this assertion.

GS: I rather doubt that. The reason being that one can't rule out different exposure to contingencies, or the possibility that the differences are simply quantitative. I'm not saying there are no differences, of course, but there are many, many similarities, as the EAB has demonstrated over the course of 70 years of research.

SN: Choosing to ignore that difference seems to me to be a choice similar to that of seeing the world through a black and white eyeglass.

GS: Or seeing the world after being exposed to both mentalism (for many years, like you) and behaviorism (unlike you).

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