

## Re: Perceptual symbol systems

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> *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.*

If it is that difficult for you to understand what one means by "store", perhaps you would say that a piece of paper with a telephone number written on it and which is put inside a drawer *is not* an example of "storage of information". If you exclude this interpretation of the word "store", then you and other behaviorists are quite peculiar in relation to the understanding of the remainder of mankind.

> *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.*

Illusions or not, the fact is that behavior was produced because of nonsensory stimulation. If that's difficult for you to grasp, let me try to give an even more difficult situation: that creative behavior is often

the result of novel manipulations of representations. But I guess no behaviorist would dare to study (or even consider) creative behavior.

- > *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.*

The subject of false memories (as studied by Elisabeth Loftus, Daniel Schacter and others) is something that can be used to support my case that it is interesting and productive to think about representations, "storage" and manipulation of information in the brain. But this step can only be given by people which has a minimum understanding of what "information" means. Do you think that "information" is a notion that must not be considered?

- > > *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.*

Papers and computers and notebooks and beach sand are all physical supports that help the externalization of part of one's own representations (and also to intermediate the communication with others). They substantially improve one's internal manipulation of information, but they are not necessary. In other words, you can think with your brain and a piece of paper, but you cannot think with a piece of paper and no brain.

Sergio Navega.