Re: Challenge to the behaviourists, #1

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From: Wolf Kirchmeir (*wwolfkir_at_sympatico.ca*)
Date: 09/09/04

Date: Thu, 09 Sep 2004 10:15:30 −0400

Allan C Cybulskie wrote:
> "Wolf Kirchmeir" <wwolfkir@sympatico.ca> wrote in message
> news:1fN%c.24884$lP4.1435536@news20.bellglobal.com...
>
>>Allan C Cybulskie wrote:
>>
>>>I have a couple of challenges to the behaviourists to let them explain
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> their
>
>>>view a little clearer.
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>>>If behaviourism (of any stripe) is going to be of use in artificial
>>>INTELLIGENCE, it is going to have to give us a way to tell what
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> behaviours
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>>>are intelligent, and which are not. What are the posited
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> characteristics
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>>>that a behaviour must have in order for it to be considered an
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> intelligent
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>>>behaviour? And if you feel the question is irrelevant in a
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> behaviouristic
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>>>model, please explain why.
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>>
>>You tell me what you mean by "intelligence", and I'll tell you if it can
>>be built.
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>

> Um, that would be MY line, considering that I'm the computer science grad of
> the group [grin].
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>
>>I know what I mean by it. :−)
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>
> And, somehow, you missed that the point of the question is really to get you
> to tell me what you mean by that; in short, the challenge is for you to tell
> me how behaviourism determines whether or not a behaviour is intelligent.

The way it determines what any other behaviour is. "Intelligent" is a judgement or a description. If it's a description, then I can find the behaviours it refers to. If there no behaviousr that corresponds to your definition of "intelligent", then you are using the term as a judgement.

> So far, there have been three replies and three non−answers ...

My reply _is_ an answer. Since you can't decode it as one, you have a very confused notion of "intelligence." I'll try to be clear.

a) "intelligent" ("smart, clever, etc")is a word with many meanings −−> people use it in many, many different ways.

b) if you want to know what "intelligent" means in any one context, look for the behaviour that is referred to as "intelligent".

c) try to describe the behaviour without using terms such as "intelligent".

d) if there is no behaviour to observe, ask the speaker to explain what he means, and keep asking until you get to some behaviour.

e) don't be surprised if behaviour that is classed as "intelligent" in one context/situation is not so classed in another.

An Example:

A) The Observations
My cat is sleeping in a spot of sun on the living room floor. I hear a kitchen cabinet door close, then the sound of can being set on the counter. The cat pricks up its ears. There are sounds of rummaging in the cutlery drawer. The cat stands up. Then the pop of a can opener being pushed into can, and the sound of it cutting through metal. The cat walks into the kitchen, meowing plaintively, and returns about a minute later.

Some days later, the same scenario plays out, with a small difference. This time, the cat stands up, turns towards the kitchen, and raises its head, moving its head from side to side. I can see its nostrils flare slightly. After a few moments, it goes back to sleep in the sunlight.

Some time later, the same scenario, again with a difference. After raising its head and moving it from side to side, the cat walks into the kitchen, and meows plaintively. My wife feeds it.

B) The Analysis
Many people would say the cat is "intelligent" because it has "figured out" that not every can opener sound means the cat food can is being opened. I'd say its behaviour was shaped by contingencies. I.e., the cat responded at first onyl to the sound of the can being opened, and later on its subsequent behaviour was determined by whether or not there was the smell of cat food wafting from the kitchen.

Many people will also point to the fact that the cat's behaviour changed without human intervention, but "on its own." They will claim this proves the cat is "intelligent," and wasn't "just trained by you." But I've noticed that people who would argue the cat is intelligent because it can "learn on its own" get rather upset when students do not learn as expected, regardless of the teacher's interventions. Some of these students are even classed as having "low intelligence!" That means that these people have at least two mutually inconsistent notions of "intelligent."

This inconsistent use of "intelligent" also means that "intelligent" expresses a value, i.e., it's an intensional term, not an extensional one. This is in fact the normal use of the term, which we learn in school. As someone has pointed out, "the first thing we learn in school is that we're dumb." And stupid, dumb, etc are used as insults in every culture I know of. Interesting fact, eh?

C) The Bottom Line
Now do you see why I can't "answer" your question?

I repeat: you tell me what you mean by "intelligent", and I'll tell you if it can be built. Your expertise as a computer science grad is irrelevant here − it's your ability to define intelligence in terms of behaviour that counts. If you can't do that, you can't begin to design an "intelligent" machine. It doesn't matter which definition you use, so long as it's one that can be phrased in terms of the machine's behaviour.

BTW, any definition of "intelligent" that begs some notion of subjective experience is useless for AI. I say this beacsue in your past posts I detect a bias towards subjective experience. You can't observe subjective experience. Not even your own: what we call "my experience" is in fact what I "say" about it. I put "say" in quotes since symbolic behaviour isn't limited to language. "Internal speech" is a response to "subjective experience", it isn't the experience itself.

For a nice sidelight on this issue, see a current ScAm article which reports experimenets in using virtual reality (VR) as a "distractor" so that patients do not "experience pain." FMRI scans show that brain activity associated with "experincing pain" is diminished or absent; and

patients report diminished "experience of pain" while engaged in VR. Of course − they are experiencing virtual reality, not pain. It's significant that the more realistic the VR, the less pain. The article doesn't report what I would think is an obvious check: run some trials in which patients are _not_ asked to comment on their pain while engaged in VR. I suspect that the fMRIs would show even less evidence of "pain." IOW, the investigators used the only means (other than brain scans) available to measure pain − the patient's own response to pain. But any response can trigger further responses, so it's important to observe what happens when the response is not elicited. (NB how kids' responses to pain inflicted by a sibling varies with the presence/absence of a parent...) BTW, the author does not analyse the facts as I do; his use of the term "distractor" indicates his bias, and IMO misleads him. All "pain distractors" work by replacing pain at least partly with other stimuli. VR works so well because it supplies a large and complex set of stimuli, hence requires a large amopunt brain resources, hence prevents the brain from responding to the pain signals. The experiment shows that you can do via VR what pain killers do via blocking of signal paths, and does a better job when the pain killers don't work well (as for burn victims, for example.)

HTH