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**From:** jeffrey E. <jeevacation@gmail.com>  
**Sent:** Wednesday, August 24, 2016 4:53 PM  
**To:** [REDACTED]  
**Subject:** Re:

in a two player game what if one player BELIVE= there is an observer but there is not. the payoff matrix shou=d change. ?

On Wed, Aug 24, 2016 at 12:48 PM, [REDACTED] <[REDACTED]@[REDACTED]> wrote:

> On Aug 24, 2016, at 06:09, jeffrey E. <jeevacation@gmail.com <mailto:jeevacatio=@gmail.com> > wrote:  
>  
> do you believe a bunch of chemicalls has a goal, ?

It depends a bit on how we use the words; do you think that a bunch of chem=cals can do mathematics or be money? I think it makes sense to say "y=s".

A goal is part of a causal model that we use to describe a agent that can c=mmmit to pursuing a world state. Outside of this model, the word has no mea=ing. Within the model, it makes the behavior of some bunches of chemicals =omewhat predictable on a particular level.

I think most chemical systems do not have goals, in the sense that we canno= meaningfully ascribe to them that they have agency. For that, they need - some kind of preference system,

- a way to determine and represent world states,
- a way to make decisions for world states based on the preferences,
- a way to act on decisions so that the preferred world state becomes more =ikely.

For instance, a corporation is an agent in this sense, and a cat is too. Pe=haps [REDACTED] would say that cells can have goals, too.

A Roomba cleaning robot is a particularly good example: when it cleans the =oom, it has no goal, because it has no model of the cleanliness of the roo=, and no preference to make it cleaner. We can test for this: if its dirt =ontainer is full, it will happily make a clean room more dirty, because it=just moves randomly around while rotating its brushes. The cleaning is an =mergent result.

On the other hand, when it runs low on battery, it will explicitly search f=r its power station and drive there to recharge, and after that, it will c=ntinue cleaning. It explicitly represents the charging state, and when sta=ved for power, it commits to a goal that makes it direct its actions on en=ering that state.

[REDACTED], in his classical book "vehicles", looks at=different kinds of cybernetic feedback systems, and at different kinds of =gency that can be implemented in them. My own thinking is mostly shaped by=the ideas of social agency, by the Italian computer scientist [REDACTED], and by [REDACTED].

> isnt that in your words just one of the stories we =ell ourselves.? why is it not merely chemicals

I would say that a goal is part of a "software specification". Nature can get a bunch of chemicals to enact this specification. But it can also be done mechanically, electrically or socially.

> . like in a magnetic field forced to line up with other chemicals in the vicinity, . more like magnets lining up.

Do you think there is a lowest level, and that it makes sense to speculate that it is?

Fundamental physics explores the idea of the lowest causally closed level. I made an online survey during the FQXi conference, and got 49 responses from the participants. 18 believed that the universe is fundamentally just mathematics or information (8 of those think it is just information). 19 believe in a material universe (4 of those think only space or spacetime exists). 15 respondents hold that a conscious observer or God is necessary (some of them overlap with the materialists).

For what its worth, the idea that only information is real does not seem to be especially strange. What is your view/intuition?

You are right when you say that my view is strongly influenced by being a computer scientist. Once I made the leap that our observations of the world are fundamentally not different from what a computer game player can observe on his screen, and that we can produce every conceivable sequence of observations via a computer program, I saw no way out again, especially after I got to see observers/minds as computer programs, too. Everything we know about ourselves, we know through sequences of observations, too, and observations are sets of discernible differences (= bits of information).

Cheers,



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=A0 please note

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