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**From:** jeffrey E. <jeevacation@gmail.com>  
**Sent:** Sunday, October 23, 2016 2:56 PM  
[REDACTED]  
**To:**  
**Subject:** Re:

that is true but the issue is SELF aware =, first. , an error correction within bounds. ♦=AO it is off when walking down the steps , but if you look down and =ry to have it operate , not a good result. it is slow. f=w choices. the error correction will keep you from suicide. - =opefully , unless overwhelmed or exhausted. . as w= know the consious appears to make the moves a few miliseconds after=the firing decison to take action occurs. . the fun question w= what if there were a limited backwards causality, for living systm=s in fact my concious in the future dicated the firing a few m=liseconds ago. . I thought that two time frames, could e=ist, seperated by a few milisseonds. so the time wouldn= have to be in the same space time frame. one universe slightly ahea= of the other. sort of a spiral.

[REDACTED] wrote:

Dear Jeffrey,

That is poetic!

<=r>

Well, there is a clear evolutionary advantage to consciousness= of others and to self-consciousness. That ability to say, if sh= does this, I'll do that, but if she does that, I'll do something =lse, is key to dealing with others, and directly leads to agreements, deception, etc. That is, having even a simple model =f others' behavior, and of one's own future actions, conveys a str=ng advantage.

Of course, such models are necessar=ly incomplete. When one models oneself, one always leaves=out the vast majority of things that are going on, as you say. In m= paper, 'A Turing test for free will,' I show that the incom=leteness of one's own model of oneself is responsible for on='s inability to predict one's future decisions, a key component of=free will.

Similarly, one'e models of others =re also incomplete, so that other people constantly behave in su=prising and unpredictable ways. Because of the necessary inco=plteness of our conceptions of ourself and others, error correc=ion is key, as you say. We must operate in a way th=t allows us to function even in the face of constant unknowns. Evol=tion drives us towards this error correcting ability.

=br>

Although I am phrasing this in a way that is less poetic tha= you!

Time for me to tilt the table more to the horizontal for a=bit and watch those balls lazily roll around.

Seth

On Sun, Oct 23, 2016 at 8:00 AM, jeffrey E. <jeevacation@gmail.c=m> wrote:

?

On Sat, Oct 22, 2016 at 7:58 PM, Seth Lloyd <[REDACTED]> wrote:

Sure: let's talk tomorrow. Any time in the afternoon. (Or, we could talk yesterday!)

S=th

On=Fri, Oct 21, 2016 at 5:33 PM, jeffrey E. <jeevacation@gmail.com>; wrote:

tomorw?=C2♦ lets assume that like a weak signal you can go back but =nly for 1 second before the signal fades. ? an err=r correction.

<=iv class="gmail\_quote">On Fri, Oct 21, 2016 at 5:31 PM, Seth Lloyd <[REDACTED]> wrote:

Dear Jeffrey,

My apologies for not responding sooner: I was off email for the last few days.

than light but let's

Of course thoughts are constructed from neural signals that move much slower than light, so let's just take the suggestion that they move faster than light seriously. A couple of points: First of all, since going faster than light translates into the ability to send signals faster than light, this has implications for game theory. If you know your opponents moves in advance -- and they know yours -- this restricts the set of strategies to non-cheating, non-deceptive ones. In such games one should be able to show that Nash equilibria are a= dilemmas, there is no incentive for cheating. This is sort of the opposite of what you are suggesting.

things would happen.

backwards in time,

advanc=e -- and they

strategies. I believe

optimal: unlike in prisoner's

what you are=suggesting.

setting simultaneously

In this setting, as

advantage for consciousness</=iv>

this, I'll do that, but if

referenc=: one is modeling

cycles of deception

behavior.<=div>

There is a sense in which thought processes are taking place in an extended space throughout the brain, so that faster than/slower than light is not so meaningful. You and Martin suggest, there is probably some pretty strong evolutionary or sense of self reference. Indeed, just to ask the sort of question, If he does one thing, he does this=other thing, I'll do something else, requires a sense of self and intent, which I think we agree are very important at least for human behavior.

I'd enjoy talking further so give a call any time you like.

Yours,  
Seth

=/div>

On Tue, Oct 18, 2016 at 7:12 AM, jeffrey E. &lt;jeevacation@gmail.com <mailto:jeevacation@gmail.com> wrote:

if you have a moment i have a quick question. -=C2♦ assume for the moment that living things unlike physical=things. have a component that travels faster than light.=C2♦ . thoughts? or call it x . it would explain the inability of detection by conventional means. =C2♦ martin and i are working on game theory of self awareness. the evolutionary benefit of what some call consciousness=. the conjecture is that is no more than a dynamic=error correction system. slow. easily overwhelmed and able to do simple tasks. if the mathematics of biology and =physics were symmetrical. physics would live in the slower= than light , and biology in the faster. . =C2♦ deception and intent in biology , none of it in physics. .

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