Re: Finding useful functions− part 1

Source: http://sci.tech−archive.net/Archive/sci.cognitive/2004−10/0791.html

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From: dan michaels (*feedbackdroids_at_yahoo.com*)
Date: 10/28/04

Date: 27 Oct 2004 19:40:34 −0700

Hmmmm ... I found my missing posting from yesterday on another forum
[seems many other sites are mirroring google − cool] .....

http://www.gdse.com/servlet/gdse.news?gid=1217&st=40
http://www.gdse.com/servlet/gdse.nwsgrp?mid=231531354
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From: feedbackdroids@yahoo.com
Subject: Re: Finding useful functions− part 1
Newsgroups: comp.ai.philosophy comp.ai.neural−nets
Date: 26−Oct−2004 14:00:19

"Bill Modlin" <modlin1@metrocast.net> wrote in message
news:<C5WdnYeQmMllXODcRVn−3A@metrocastcablevision.com>...
> "dan michaels" <feedbackdroids@yahoo.com> wrote in message
> news:8d8494cf.0410250740.6968afef@posting.google.com...
> > "Bill Modlin" <modlin1@metrocast.net> wrote in message
> news:<2IOdnXgZS_WCFOHcRVn−jA@metrocastcablevision.com>...
> >
> >
> > > Overall, the point is that the functions computed by cells in
> the
> > > brain are largely determined by the correlations encountered in
> the
> > > signals accessible to the cell, rather than by genetic control.
> > >
> >
> > The problem comes if you believe this part so strongly that you
> gloss
> > over or disregard or downplay the underlying "foundation" for the
> > system as provided by genetics. Tabula rasa, it ain't.
>
> We've been here many times before, Dan. I'm not sure we actually
> disagree... at worst we quibble over just how much genetic structure
> is required. I certainly don't expect a huge random network with
> no initial structure to magically self−organize into a person... at
> the very least it has to be part of an organism with genetically
> endowed (or designed in, for a robot) initial behaviors and drives.

> *Perhaps there is a lot more required.*
>
> *You seem to think that there may be a need for at least 30 subtly*
> *different frameworks to account for the 30−odd visual functional*
> *areas that you are fond of mentioning, and for all I know you could*
> *be right.*
>
> *Our main difference is in our perception of where best to focus our*
> *current efforts. I am still sufficiently impressed by the*
> *potential for self organization that I'd like to find out how far it*
> *can take us. If and when we find something that can't be made to*
> *work by self organization, then we can dig in and see what*
> *additional structure is needed to make it work.*
>
> *My impression is that you would have us spend many years finding out*
> *just how the brain does it all before even attempting to construct*
> *anything.*
>

Hi Bill, *exactly* the opposite, as I believe I've said many times around here. I think neuroscience has already given us plenty enough information that we could start developing computer systems which do something similar. If I were actively working in this area, that's what I'd be doing.

Regards the 30 visual areas, I think they are there for a reason, not by random chance. They appeared as a result of evolution fine−tuning the system to solve the problems the organisms were presented with. If you postulate the various areas [for the purposes of research, simulation, and test] simply as being preprocessing systems, then at the least they make the job of any s.o.s. or memory−prediction system they connect to all that much easier. Vision is such an enormously difficult problem that nature found it couldn't be solved adequately with only a 1−level memory system, blank self−organizing slate, simple S−R units, etc. If it were that easy to do, then nature would have done it that way from the get−go.
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> *My way, perhaps we'll find that we only need a handful of*
> *specialized structures and can be done in a few years. Worst case*
> *we waste a little time and wind up eventually digging out all the*
> *detail you wanted to start with. Your way we have no chance of*
> *early success. Place your bets... but me, I'd rather hope for*
> *something that might be finished in my lifetime.*
>
> *Bill*

Again, exactly the opposite − you're mixing me up with the wait−until−eternity we−don't−know−anything guys. As I told John.H just a day ago, if the early CV people, knowing about limulus and mach bands 50 or so years ago, had decided to wait another 50 years for

neuroscience to nail down everything about vision, where would we be today − still running rats. My recommendation is to immediately use every piece of neuroscience research at our disposal, TODAY. Can I be any more direct than that. One needn't worry about exactly "how" the real visual system does it, but can **adapt** [what we know about] "what" it does.