
From: Ed Boyden, [REDACTED]
Sent: Monday, July 11, 2016 10:07 AM
To: jeffrey E.
Subject: Re:

That is very interesting -- will meditate upon this, this =eek...

On Sun, Jul 10, 2016 at 1:06 PM, jeffrey E. <jeevacation@gmail.com<=a>> wrote:

i =ould ask you to think about music and melody, i will send you = copy of what i sent to chomsky i think the concep= of harmonies, inter and intra-actions , of a ensemble of elem=nts is a complex problem. a melody is more than a collec=ion of notes. it has an inter relation based on key, rhythms, =nd proggessions as well as variations on a theme. =C2 A series of notes like a series of neuronal firings wont=tell much, it needs to be combined into a coherent shape. =A0 it is easy for a novice to pick out a wrong note in a=melody heard for the first time. a disjointedness. =. the smooth shapes have spikes that dont belong. . =A0 its the ensemble of neurons , firing rates times and intera=tions that may be able to be mapped , I have no idea, .=C2 algebraic geometry, algebraic topology, (sur=aces rather than shapes), skype anytime you like=br>

today I conducted an experiment encouraged by Noa=s wholly justified aggressive and detailed directives to =oscha.. joshcha focused on layers b=ing developed in the brain . the timing for the development of each =ayer being different per species .

I postulate that music might be a frosted window into that structure. symphonies begin with their first "=layer " a theme. in fact , there might be more than one theme in the first layer , =A0 , the second part of symphonic form is the complex development stage= where those themes are inverted, deconstructed , reconstructed =tc ,and the development stage takes the most time . in =the conclusion of the symphonic form the recapitulation of all that has come b=fore it forms a " phenenoma of the piece " a whole ,made up of its smaller concepts . =C2 As opposed to listening to music to record which neuron is firing, as mo=t musciolgists attempt . I propose that the music may be the audible result =f those neurons firing, made possible by a select few who would attempt=20 to notate those neuronal firings. Beethoven f=r example.

The experiment . I mashed all o= the four symphonies together , playing recording= of the 3rd 5th 6th 7th all overlayed on each other, playing at the same time. - the way a brain mig=t develop. I expected an ordered noise but to the surprising cont=ary , IT WAS AMAZING. . you can hear new =A0 "concepts " forming,

il wonder whether in the mind of a blind child , the "=music" would be created even without the visual ref=rencial. but created none the less. later when the visual c=n be tied to concepts , the anatomy may be hijacked to produce sounds . that someh=w relate to the concepts. .

I tried to mix mu=ic from different cultures- it didn't work. African =oes not work with western europe,-chinese works with neither of the other two. but within the same cultu=al music (the brain of the local species) the mash ups are=20 beautiful.

I would note that computers engage in "parallel processing" only in order to take a hard problem and break it into its component parts, working on each component separately, here each problem interacts and their resolutions interact in remarkable ways.

On Sun, Jul 10, 2016 at 2:52 PM, Ed Boyden, <[REDACTED]> wrote:

Want to continue to discuss how we might model brain circuits in mathematically meaningful ways? Sounds like there could be some good synergies here (especially since I'm going to be spending my Fall focused on learning the necessary mathematics, hopefully to the point where I'll have creative new ideas about how we can model the structure and function of the brain, and make a contribution)!

Ed

On Wed, Jun 29, 2016 at 4:34 PM, Ed Boyden, <[REDACTED]> wrote:

> Ok, adding you now!

>

> Ed

>

> On Wed, Jun 29, 2016 at 4:33 PM, jeffrey E. <jeevacation@gmail.com <mailto:jeevacation@gmail.com>> wrote: >> tried your phone my skype is jeevacation

>>

>>

>> On Wed, Jun 29, 2016 at 12:24 PM, Ed Boyden, <[REDACTED]> wrote:

>>>

>>> Great! Just call me a [REDACTED]

>>>

>>> Ed

>>>

>>> On Wed, Jun 29, 2016 at 12:13 PM, jeffrey E. <jeevacation@gmail.com>=br> >>> wrote:

>>> > as i will be in the car. lets phone instead of skype at 430 if that

>>> > works.

>>> > .

>>> >

>>> > --

>>> > please note

>>> > The information contained in this communication is

>>> > confidential, may be attorney-client privileged, may

>>> > constitute inside information, and is intended only for >>> > the use of the addressee. It is the property of

>>> > JEE

>>> > Unauthorized use, disclosure or copying of this

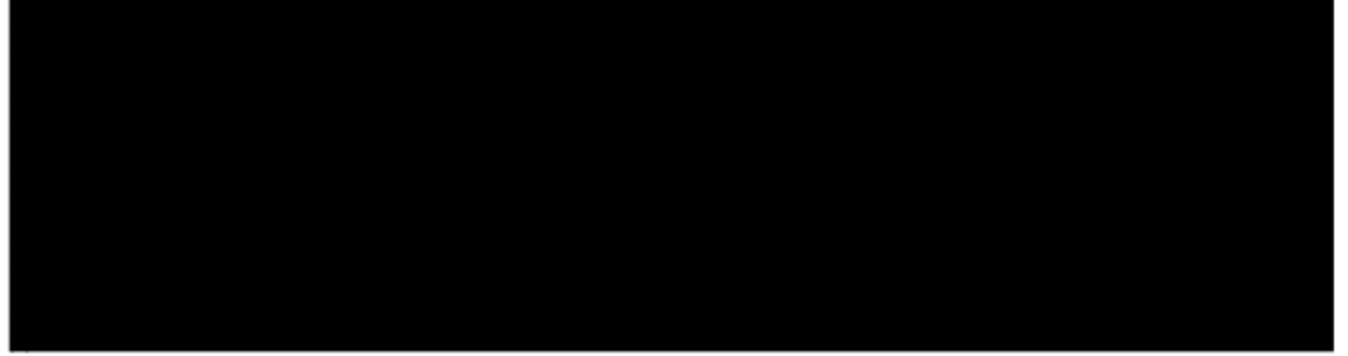
>>> > communication or any part thereof is strictly prohibited<=r> >>> > and may be unlawful. If you have received this

>>> > communication in error, please notify us immediately by >>> > return e-mail or by e-mail to jeevacation@gmail.com <mailto:jeevacation@gmail.com>, and

>>> > destroy this communication and all copies thereof,

>>> > including all attachments. copyright -all rights reserved=br> >>>

>>>
>>>
>>> --
>>> Ed Boyden, Ph. D.
>>> Leader, Synthetic Neurobiology Group
>>> Associate Professor, MIT Media Lab and McGovern Institute,
>>> Departments of Biological Engineering and Brain and Cognitive Sciences
>>> Co-Director, MIT Center for Neurobiological Engineering
>>> New York Stem Cell Foundation-Robertson Investigator
>>> Massachusetts Institute of Technology



>>
>>
>>
>> --
>> please note
>> The information contained in this communication is
>> confidential, may be attorney-client privileged, may
>> constitute inside information, and is intended only for
>> the use of the addressee. It is the property of
>> JEE
>> Unauthorized use, disclosure or copying of this
>> communication or any part thereof is strictly prohibited
>> and may be unlawful. If you have received this
>> communication in error, please notify us immediately by
>> return e-mail or by e-mail to jeevacation@gmail.com <<mailto:jeevacation@gmail.com>> , and
>> destroy this communication and all copies thereof,
>> including all attachments. copyright -all rights reserved
>
>
>
> --
> Ed Boyden, Ph. D.
> Leader, Synthetic Neurobiology Group
> Associate Professor, MIT Media Lab and McGovern Institute,
> Departments of Biological Engineering and Brain and Cognitive Sciences
> Co-Director, MIT Center for Neurobiological Engineering
> New York Stem Cell Foundation-Robertson Investigator
> Massachusetts Institute of Technology



--
Ed Boyden, Ph. D.
Leader, Synthetic Neurobiology Group
Associate Professor, MIT Media Lab and McGovern Institute,
Departments of Biological Engineering and Brain and Cognitive Sciences
Co-Director, MIT Center for Neurobiological Engineering
New York Stem Cell Foundation-Robertson Investigator
Massachusetts Institute of Technology

--
=A0 please note

The information contained in this communication is<=r>confidential, may be attorney-client privileged, may constitute insid= information, and is intended only for
the use of the addressee. It is =he property of
JEE
Unauthorized use, disclosure or copying of thiscommunication or any part thereof is strictly prohibited
and may be un=awful. If you have received this
communication in error, please notify =s immediately by
return e-mail or by e-mail to jeevacation@gmail.com <<mailto:jeevacation@gmail.com>> , and
destro= this communication and all copies thereof,
including all attachments. =opyright -all rights reserved

Ed Boyden, Ph. D. Leader, Synthetic Neurobiology Group Associate Professor, MIT Media Lab and McGovern Institute, Departments of Biological Engineering and Brain and Cognitive Sciences Co-Director, MIT Center for Neurological Engineering New York Stem Cell Foundation-Robertson Investigator Massachusetts Institute of Technology Building [REDACTED]