

Subject: Message to the Human Brain Project (HBP): Do NOT waste €1-billion for "neural computing"  
Date: Tue, 10 Mar 2015 19:39:44 +0200  
Message-ID:  
<CAM7Ekxnt2SwwxhKhai6xnzzimES9Me6qqOokGcsughtxCnoKjA@mail.gmail.com>  
From: Dimi Chakalov <dchakalov@gmail.com>  
To: Wolfgang Marquardt <w.marquardt@fz-juelich.de>  
Cc: Sven Fahrner <s.fahrner@fz-juelich.de>, Markus Diesmann <m.diesmann@fz-juelich.de>, Alexandre Pouget <alexandre.pouget@unige.ch>, cosyne2014@gmail.com, cosyne.meeting@gmail.com, Secretariat of Mrs Kroes <Neelie.Kroes@ec.europa.eu>, Neelie Kroes' Spokesperson <Ryan.Heath@ec.europa.eu>, Press Officer <Linda.Cain@ec.europa.eu>, brain\_mind@epfl.ch, henry.markram@epfl.ch, richard.walker@epfl.ch, hbp.info@hbpcconsortium.org, public.website@hbpcconsortium.org, meierk@kip.uni-heidelberg.de, Walter Greiner <greiner@fias.uni-frankfurt.de>, malsburg@fias.uni-frankfurt.de, Karlheinz Langanke <k.langanke@gsi.de>, wolf.singer@brain.mpg.de, Horst Stöcker <stoecker@uni-frankfurt.de>, triesch@fias.uni-frankfurt.de, fias@uni-frankfurt.de, Jakob Macke <jakob.macke@tuebingen.mpg.de>, mbethge@bccn-tuebingen.de, contact-dlr@dlr.de, martin.wiedemann@dlr.de, peter.wierach@dlr.de, Bernhard Milow <bernhard.milow@dlr.de>, info@grs-sim.de, Sebastian Seung <seung@mit.edu>, toga@loni.ucla.edu, bruce rosen <bruce@nmr.mgh.harvard.edu>, van@nmr.mgh.harvard.edu, info@humanbrainproject.eu, communications@humanbrainproject.eu, guy.willis@epfl.ch, sto@kip.uni-heidelberg.de, annika.hjelm@epfl.ch, christoph.ebell@epfl.ch, Paul G Allen <info@alleninstitute.org>

Dear Dr. Marquardt,

Regarding your yesterday's (March 9th) report to the HBP Board of Directors, which will be discussed at their meeting on 17-18 March by twenty-two (perhaps more) scientists, please notice that "neural computing" is an **oxymoron**.

Currently, people at Jülich Research Centre deeply believe that one could boost supercomputing through neuroscience, with the aim of simulating the brain in a computer. Many of their colleagues have already gathered at Salt Lake City to attend "Computational and Systems Neuroscience (Cosyne) 2015", March 5 - 8, 2015. Their belief in "neural computing" was summarized at the website of Jülich Research Centre as follows:

## Mathematical Models Provide Explanations

<http://www.fz-juelich.de/portal/EN/Research/ITBrain/human-brain-modelling/inm-6.html?nn=1354726>

"Visual perceptions, smells or spoken words: all of our sensory impressions and cognitive and emotional experiences are processed in the brain. This is done by transmitting information, in the form of electric impulses, from one of the some 86 billion neurons to the others at lightning-fast speeds. In turn, each neuron has up to 10,000 junctions, which are known as synapses. Thus the brain is a gigantic control centre."

Check out how they portrait their "scientific endeavors":

[http://www.god-does-not-play-dice.net/Sunday\\_Times\\_16\\_02\\_2014.pdf](http://www.god-does-not-play-dice.net/Sunday_Times_16_02_2014.pdf)

This is just **crap** (pardon my French). Here's a simple proof, which I believe you and all your colleagues can verify with your brains.

Consider the \*meanings\* explicated with these four sayings:

1. You can't hide a piece of broccoli in a glass of milk.
2. Who has no horse may ride on a staff.
3. Don't wear polka dot underwear under white shorts.
4. Faute de mieux, on couche avec sa femme.

Can you understand the \*meanings\* of these sayings? If you can, which sayings presented similar meanings? My answer: **1 & 3** and **2 & 4**.

However, the \*meaning\* itself is NOT directly presented, and therefore cannot be "computed" from the neural presentations of the \*words\* used in sayings **1 - 4** above. The \*meaning\* is invariant in all human brains, regardless of their neural differences, aging, etc., and does not decay, simply because it is NOT governed by the second law of thermodynamics. There are many other experiments leading to the same conclusion, which I can gladly offer to you and all your colleagues.

**NB:** The only possible explanation of the mind-brain and mind-matter relations was suggested by Gottfried Wilhelm von Leibniz (1646-1716), and elaborated by Wolfgang Pauli on January 7, 1948 [Ref. 1].

More at

<http://www.god-does-not-play-dice.net/comments.txt>

Please feel free to pass this email to HBP Board of Directors. I will be happy to elaborate, with utmost pleasure.

Yours sincerely,

Dimi Chakalov

----

[Ref. 1] H. Atmanspracher and H. Primas, The Hidden Side of Wolfgang Pauli, Journal of Consciousness Studies, 3 (1996) 112-126; cf. Sec. VI, Matter and Psyche as Two Aspects of One Reality, p. 122.

----

**Note:** The quote from the website of Jülich Research Centre -- "all of our sensory impressions and cognitive and emotional experiences are processed in the brain" -- can be utterly misleading, because one could easily slip into **Marxist-Leninist crap**, according to which the brain is the "hardware" and the mind is its "software". It would be like a DVD on which a movie is encoded with particular binary code, so if

you play the DVD on your TV, you will watch the movie being reproduced from the DVD due to the **isomorphism** between the images and sound of the movie and their *correlates* burned on the DVD. Marxist-Leninist "scientists" deeply believe that all living creatures are some "information gathering and utilizing systems" (**IGUSES**), and those at Jülich Research Centre believe that "all of our sensory impressions and cognitive and emotional experiences" were expressed as **qualia** on our 'TV screen', but it is the "hardware" and the "software" that produce the "calculations" in the brain (cf. Explanatory Note [below](#)), so if they find the "software" and understand the "hardware", they could boost supercomputing through "neurocomputing", and perhaps crack all encrypted messages sent by various spying agencies (presumably, they are 'the good guys', so they will spy *only* on 'the bad guys'). All they need is just one billion euros -- all taxpayers' money -- and one day they might emulate those "1,000 trillion calculations per second" ([Sunday\\_Times\\_16\\_02\\_2014.pdf](#)).

Sounds like a stupid joke, but isn't. The Human Brain Project Board of Directors (BoD) are deadly serious about **our** one billion euros, and the so-called Mediation Office for the Human Brain Project at Forschungszentrum Jülich GmbH proposed yesterday ([March 9th](#)) in their 'Mediation Process Working Groups Submit Recommendations for Decision' that

"... systems and cognitive neurosciences should be reinforced as cross-cutting projects linking existing subprojects. These cross-cutting projects are intended to bring together research on specific issues of systems and cognitive neurosciences in several work packages (Sic! - D.C.). The cross-cutting projects should be funded by a redistribution of resources from the existing subprojects, i.e., from the Core Project of the HBP. The mediation group recommends that this should be decided by the project management on the basis of an evaluation of the scientific quality and the compatibility of the research with the mission of the HBP."

Notice that "several work packages" need money, which must be cut off from other projects "by a redistribution of resources from the existing subprojects, i.e., from the Core Project of the HBP." That's all they care: MONEY.

Nobody even mentions the outstanding problems of cognitive neuroscience. In [February 2013](#), I wrote many times to these people (Subject: €1 billion European research prize ?), as they are funded by the European Commission through its Future and Emerging Technologies (FET) Flagship Grant, taken from **our** taxes:

[http://en.wikipedia.org/wiki/Human\\_Brain\\_Project#Organisation\\_and\\_funding](http://en.wikipedia.org/wiki/Human_Brain_Project#Organisation_and_funding)

Nobody replied. And nobody will reply. Who cares about cognitive neuroscience ?

Surely the brain can establish memory traces of the type 'if A then B' (Richard Semon called them '**engrams**'), and these associative links have a very rich spectrum of neural *presentations* (not "encodings", as in a DVD), exhibited for example in **neuroplasticity**, but each and every associative link or 'engram' is *pre-correlated* with the entire brain *and* body (much like every fish is pre-correlated with the entire school of fish). Point is, this incredibly complex 'binding phenomenon' cannot be based on any "**computation**". We don't know the *physics* of binding phenomenon in the first place.

D. Chakalov  
March 10, 2015  
Last updated on March 18, 2015, 12:12 GMT

PDF copy at  
<http://www.god-does-not-play-dice.net/HBP.pdf>

Subject: Re: €1 billion European research prize ?

Date: Thu, 12 Mar 2015 22:24:45 +0200

Message-ID:

<CAM7Ekx=8WboLGVBrS1=72ph6p-

V7BS40NwtFnEJwLSNs=LEsGw@mail.gmail.com>

From: Dimi Chakalov <dchakalov@gmail.com>

To: Henry Markram <henry.markram@epfl.ch>

Cc: Wolfgang Marquardt <w.marquardt@fz-juelich.de>,

Sven Fahrner <s.fahrner@fz-juelich.de>,

Markus Diesmann <m.diesmann@fz-juelich.de>,

Alexandre Pouget <alexandre.pouget@unige.ch>,

cosyne2014@gmail.com,

cosyne.meeting@gmail.com,

brain\_mind@epfl.ch,

richard.walker@epfl.ch,

hbp.info@hbpconsortium.org,

public.website@hbpconsortium.org,

meierk@kip.uni-heidelberg.de,

Walter Greiner <greiner@fias.uni-frankfurt.de>,

malsburg@fias.uni-frankfurt.de,

Karlheinz Langanke <k.langanke@gsi.de>,

wolf.singer@brain.mpg.de,

Horst Stöcker <stoecker@uni-frankfurt.de>,

triesch@fias.uni-frankfurt.de,

fias@uni-frankfurt.de,

Jakob Macke <jakob.macke@tuebingen.mpg.de>,

mbethge@bccn-tuebingen.de,

contact-dlr@dlr.de,

martin.wiedemann@dlr.de,

peter.wierach@dlr.de,

Bernhard Milow <bernhard.milow@dlr.de>,

info@grs-sim.de,

Sebastian Seung <seung@mit.edu>,

toga@loni.ucla.edu,

bruce rosen <bruce@nmr.mgh.harvard.edu>,

van@nmr.mgh.harvard.edu,

info@humanbrainproject.eu,

communications@humanbrainproject.eu,

guy.willis@epfl.ch,

sto@kip.uni-heidelberg.de,

annika.hjelm@epfl.ch,

christoph.ebell@epfl.ch,

info@bcos.uni-freiburg.de,

andrea.huber@bcos.uni-freiburg.de,

schwarzwaelder@bcos.uni-freiburg.de,

herz@bccn-munich.de,

office@bccn-munich.de,

schoernich@bio.lmu.de,

thomas.brandt@med.uni-muenchen.de,

mcn.office@bio.lmu.de,

S.Hartmann@lmu.de,

d.sturma@fz-juelich.de,

g.r.fink@fz-juelich.de,

gereon.fink@uk-koeln.de,

slns@fz-juelich.de,

fschneider@ukaachen.de,  
h.stroehler@fz-juelich.de,  
a.morrison@fz-juelich.de,  
j.kukolja@fz-juelich.de,  
kkonrad@ukaachen.de,  
kai.vogeley@uk-koeln.de,  
josef.kessler@uk-koeln.de,  
Heidi Jacobs <h.jacobs@fz-juelich.de>,  
r.merkel@fz-juelich.de,  
p.wingen@jara.org,  
brain@jara.org,  
Paul G Allen <info@alleninstitute.org>

Dear Dr. Markram,

I believe you are the Director of the Human Brain Project (HBP).

I still have not received your reply to my email sent two years ago, on Tue, 19 Feb 2013 00:10:13 +0200.

In your interview with Ms Neelie Kroes, then Vice-President of the European Commission, published on January 29, 2013 at YouTube,

[http://www.youtube.com/watch?v=DsZ\\_LBdthC0](http://www.youtube.com/watch?v=DsZ_LBdthC0)

you explicitly suggested "neuromorphic computing systems" and "neuromorphic computing processor" (07:10 - 08:03).

I do not tolerate wasting taxpayers' money for your fantasies and those of your colleagues.

**NB:** Don't waste taxpayers' money earned with hard labor by millions of people. If you and your colleagues wish to contemplate on your fantasies and dreams, do it with your private money and during your leisure time, during weekends and holidays.

Please read my message to HBP (attached), addressed to Dr. Wolfgang Marquardt. It is available online at

<http://www.god-does-not-play-dice.net/HBP.pdf>

Your immediate reply to my email from Tue, 19 Feb 2013 00:10:13 +0200 and to the objections to your fantasies (cf. attached) is urgently needed.

Please do not procrastinate any more.

Sincerely,

Dimi Chakalov

On Tue, 19 Feb 2013 00:10:13 +0200,  
Message-ID: <CAM7Ekx==Lk4rodsLD82KOLu3YrSL8Syp+yVNMzqg-  
Ph=vZrSw@mail.gmail.com> ,  
Dimi Chakalov <dchakalov@gmail.com> wrote:  
[snip]

Attachment:

<http://www.god-does-not-play-dice.net/HBP.pdf>

Subject: Re: The physics of the brain  
Date: Fri, 13 Mar 2015 04:01:18 +0200  
Message-ID: <CAM7EkxmYKYWwAKx2Jx0FsXiAt0g+ihkTB+4rP7E-X2Tea3Nwfg@mail.gmail.com>  
From: Dimi Chakalov <dchakalov@gmail.com>  
To: Yves Agid <yves.agid@icm-institute.org>, Nathalie George <nathalie.george@upmc.fr>, Laurent Cohen <laurant.cohen@psl.aphp.fr>, Sid Kouider <sid.kouider@ens.fr>, Jérôme Sackur <jerome.sackur@gmail.com>, contact@icm-institute.org  
Cc: Katrin Amunts <k.amunts@fz-juelich.de>, Pascal Fries <pascal.fries@esi-frankfurt.de>, Etienne Hirsh <etienne.hirsch@icm-institute.org>

Dear colleagues,

No reply to my email from Tue, 6 Jan 2015 03:33:46 +0200 has reached me so far. I emailed you again on the next day, right after I learned about the horrible attack on Charlie Hebdo, and shared my opinion that such terrorists must be treated like cancer tumors. Nobody replied either.

In case you are interested in the physics of the brain and spacetime engineering, please check out my message to the Human Brain Project (HBP.pdf attached), which is also available at

<http://www.god-does-not-play-dice.net/HBP.pdf>

Sincerely,

Dimi Chakalov

On Tue, 6 Jan 2015 03:33:46 +0200,  
Message-ID:  
<CAM7Ekxm55Q9aobq1EL0vo\_4NbrR=v0AakHsBv7YpJ1x3ewpJxA@mail.gmail.com>  
,  
Dimi Chakalov <dchakalov@gmail.com> wrote:  
>  
> Dear colleagues,  
>  
> I greatly admire your efforts and achievements, and wish you all the  
> best for 2015 and beyond.  
>  
> In case you are interested in the binding problem viz. the physics of  
> the brain, please check out  
[snip]  
> In my opinion, the entire Universe is designed like a brain, hence the  
> need for new physics and Mathematics. If I am on the right track, it  
> may be possible to alter any physical system by spacetime engineering,  
> as the human brain is always embedded in 'the brain of the Universe'.  
>  
> Kind regards,  
>  
> Dimi Chakalov

Attachment:

<http://www.god-does-not-play-dice.net/HBP.pdf>

## Explanatory Note

Following [Plato](#), I will denote by 'idea' the object of every mental activity, representing the *meaning* of all things (including 'the unknown unknown' residing in the future) cast *before* the human mind. The difference between (i) an *idea* and (ii) its cognitive presentations as *meanings* is that the latter are speakable, while the former is **not** (resembling cognitive "vacuum"; see below). This operational definition of 'idea' encapsulates the mind-brain problem (completely ignored in the Human Brain Project). I will try to disentangle some of the issues related to [Plato's ideas](#) and explain (not solve) the mind-brain problem.

The idea *per se* can only be described with Mathematics (cf. [Maximal Set Theory](#)). It cannot have *any* neural presentation. Its *meanings* have multiple neural *presentations* (not "encoded information", as in a DVD) distributed in the *entire* brain, and these neural *presentations* are related to our [sensory systems](#) -- vision, hearing, somatic sensation (touch), taste, smell, and vestibular (balance and movement). For example, the *idea* of 'dog *per se*' is presented by distinguishable *meanings* belonging to an [open set](#) of various *concrete* dogs, and the cardinality of such open set is **undecidable**: we can always add a new element that belongs to such open set, as we keep the **UNspeakable** *idea* of 'dog *per se*' in our mind. Again, the *idea* itself is **UNspeakable**, being cast (figuratively speaking) *before* the human mind, and can be accessed only via its speakable meanings.

Notice the definition of set by Georg Cantor ([1895](#)): any gathering-together (*Zusammenfassung*) of determined and well-distinguished objects into a **whole** (*zu einem Ganzen*). To quote Georg Cantor (emphasis mine):

By an "aggregate" (*Menge*) we are to understand any collection into a whole (*Zusammenfassung zu einem Ganzen*) M of definite and separate objects m of our intuition or our thought. These objects are called the "elements" of M.

Thus, the *idea* of 'dog *per se*' is **not** included in the elements of *any* set (*Menge*), but only *corresponds* to a set with elements defined by particular *meanings*, e.g., the visual images of *concrete* dogs, their barking (hearing), smell, etc. These *meanings* are stored in our **mind** and provide **invariant** meanings for **all** humans -- regardless of the inevitable differences in their neural *presentations* (not "encodings"). The human mind (not its brain) can *create* and understand **brand new** meanings of the *idea* of 'dog *per se*', for example, in the expressions 'barking dogs don't bite' or 'it rains cats and dogs', which don't fit in the initial set. Point is, the *idea* itself is **UNspeakable** (cf. the four sayings [above](#)). It is not composed from elements in the [periodic table](#). It does *not* decay and cannot be eaten by worms, of course.

Let me offer an experiment with the human mind and its brain, to explain in what sense they are *ontologically* different. But first, may I repeat the old story about an Eskimo, who has never seen and will never see an elephant in his life, yet can make observations on elephant's *trunk* by two complementary devices, which can only measure properties of 'arm' and properties of 'nose'. Obviously, the Eskimo can never understand the underlying 'ONE entity' called trunk. Worse, he may be tempted to seek some causal relation between the 'arm' and the 'nose', and [waste his life](#) with questions like which goes first, and how. We are just like Eskimos,

because at any instant, as read with our clocks, we can only observe two *post factum* correlated (pre-established harmony, [Leibniz](#)) *explications* of 'the trunk'. Details from Gottfried Wilhelm von Leibniz and Wolfgang Pauli [above](#). In brief, 'ideas *per se*' spring from the underlying 'ONE entity' or "trunk", in terms of two **dual explications**: "arm" as 'matter and fields grounded on the quantum vacuum', and "nose" as 'speakable *meanings* grounded on the UNSpeakable cognitive vacuum'. The two vacua, quantum and cognitive, are UNSpeakable in the sense that they do **not** have *real* quantum particles nor *real* cognitive "particles" or 'meanings', like catalogued books stored in a library: check out again the four sayings [above](#), and noticed that you were "focusing" on truly UNSpeakable ideas, yet you can "explain" them only with some *real* cognitive "particles" or sayings viz. with their *real* meanings. Notice also that the 'idea *per se*' will look "physical" if we trace it to the quantum vacuum, just as **the same** 'idea *per se*' will look "mental" if we trace it to the cognitive vacuum. Yet the 'idea *per se*' is neither physical nor mental (cf. 'fundamental dualism', [January 1990](#)), but an UNSpeakable "trunk" observed by "Eskimos". (The cognitive-and-quantum vacuum is essential to [REIM](#) and spacetime engineering, mentioned on 6 Jan 2015 [above](#).)

Now the experiment. Imagine a cube made of some white plastic material, with 3 cm rib, painted blue, which you cut into 27 little cubes, 1 cm each, and ask yourself the question: how many little cubes have 3 painted sides, 2, 1, and zero? No matter how you solve the task, you will use mental images, and the object performing the counting is the human mind. The counting is *accompanied* by **work** in the brain, performed **by** the brain and **on** the brain (not on its mind). One can detect such **work** by measuring, for example, the regional cerebral blood flow (rCBF) with [functional MRI](#) and claim that mental rotation tasks are *correlated* with increased rCBF in Brodmann's areas 7A and 7B, the middle frontal gyrus, extra-striate cortex, the [somatosensory cortex](#), and frontal cortex (Mark S. Cohen *et al.*, Changes in cortical activity during mental rotation. A mapping study using functional MRI, *Brain* 119 (1996) 89-100). Fine, but such findings do not imply that, in mental rotation tasks, the **entire brain** was "employing" Brodmann's areas 7A and 7B, the middle frontal gyrus, etc., to execute some "neural computing". No neural tissue could execute any *calculations*, for example, [addition](#):



There is no privileged neural structure, such that *the rest of the brain* could feed it with *encoded* (what is the "neural code" here?) values of **A** and **B** to yield **C**, by calculating **A + B = C**, and then pass **C** back to *the rest of the brain*. The latter must patiently wait to receive the calculated result (e.g., what is the final score **C** of *blue balls*?) in order to send the next patch of encoded data, but during such calculation time our *stream of consciousness* ([William James](#)) will be dead blank and has to be filled with calculated imaginations. If the brain could produce such Biblical miracle, its mind will be [epiphenomenon](#).

In summary, the neural *presentations* (not "encoded information", as in a DVD) of brain's memory are *associative links* of the type 'if A then B', which the *brain* (not the mind) establishes during learning. The **work** done by the brain (not by the mind) can be easily detected in the brain, but this **work** is not executed by "[neural computing](#)". The brain (not the mind) literally *acts on itself* by **self-action** performed **by** the brain, and **on** the brain: only matter can act on matter. Hence the *physics* of the brain pertains to 'things we *know* that we *don't know*'. We need new physics (see pp. 7-8 in [horizon.pdf](#)) and most importantly [new Mathematics](#).

No, Henry Markram *et al.* cannot find any "neural computing" in the brain, because the *person* who worked with the plastic cube is **not** there. She is simply UNSpeakable and emanates from 'the trunk'.

As Confucius stated, 'the hardest thing of all is to find a black cat in a dark room, especially if the cat is *not* there'. Nothing can "calculate" the *meaning* of this statement, not even with €1 billion from the Future and Emerging Technologies (FET) Flagship Grant, taken from [our taxes](#). Forget it.

D. Chakalov  
March 15, 2015  
Latest update: March 26, 2015, 11:52 GMT

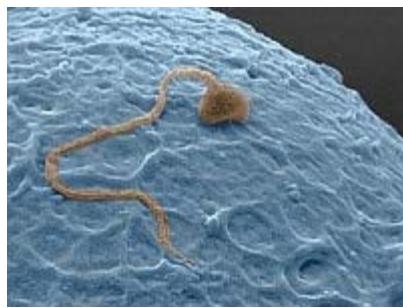


But what consciousness is we know not and how it is that anything so remarkable as a state of consciousness comes about as a result of irritating nervous tissue, is just as unaccountable as the appearance of the Djin when Aladdin rubbed his lamp.

Aldous Huxley

According to GR mantra, the spacetime itself is considered to be a four-dimensional smooth manifold  $\mathbf{M}$ , equipped with some notion of past and future (time-orientability) introduced 'by hand', and an observer is nothing but an 'information gathering and utilizing system' (IGUS) modeled with a future-directed smooth causal curve on  $\mathbf{M}$ , such that all events during her/his lifetime are given *en bloc*: the fundamental 'flow of events' is not permitted. We need new physics: see pp. 7-8 in [horizon.pdf](#).

Consider Mrs Claudia Schiffer, depicted with consecutive events from her lifetime:



## Carnegie Stages of Human Development

Dr Mark Hill, Cell Biology Lab, School of Medical Sciences (Anatomy), UNSW



### Acknowledgements

Special thanks to Dr S. J. DiMarco and Prof. Kuhel Shatto for allowing reproduction of their research. Images and material from the Kyte Collection and Ms B. Hill for image preparation.

© M.A. Hill, 2004



Something is missing, isn't it? Check out again pp. 7-8 in [horizon.pdf](#).

D. Chakalov

March 19, 2015

Latest update: March 26, 2015, 12:08 GMT