

Accepted Manuscript

BRAIN PROJECTIVE REALITY: NOVEL CLOTHES FOR THE EMPEROR

Arturo Tozzi, James F. Peters, Andrew A. Fingelkurts, Alexander A. Fingelkurts,
Pedro C. Marijuán

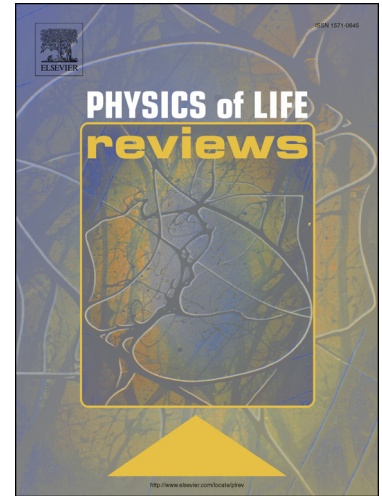
PII: S1571-0645(17)30091-X
DOI: <http://dx.doi.org/10.1016/j.plrev.2017.06.020>
Reference: PLREV 897

To appear in: *Physics of Life Reviews*

Received date: 15 June 2017
Accepted date: 16 June 2017

Please cite this article in press as: Tozzi A, et al. BRAIN PROJECTIVE REALITY: NOVEL CLOTHES FOR THE EMPEROR. *Phys Life Rev* (2017), <http://dx.doi.org/10.1016/j.plrev.2017.06.020>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



BRAIN PROJECTIVE REALITY: NOVEL CLOTHES FOR THE EMPEROR
Reply to comments on “Topodynamics of metastable brains” by Tozzi et al.

Arturo Tozzi¹ (corresponding Author), James F. Peters², Andrew A. Fingelkurts³, Alexander A. Fingelkurts³, Pedro C. Marijuán⁴

¹ Center for Nonlinear Science, University of North Texas
 1155 Union Circle, #311427Denton, TX76203-5017USA
 tozziarturo@libero.it

² Department of Electrical and Computer Engineering, University of Manitoba
 75A Chancellor’s Circle Winnipeg, MB R3T 5V6 CANADA and
 Department of Mathematics, Adiyaman University, 02040 Adiyaman, Turkey
 James.Peters3@umanitoba.ca

³ BM-Science – Brain and Mind Technologies Research Centre, Espoo, Finland
 andrew.fingelkurts@bm-science.com ; alexander.fingelkurts@bm-science.com

⁴ Bioinformation Group
 Aragon Institute of Health Science (IACS)
 Aragon Health Research Institute (IIS Aragon)
 Zaragoza, 50009 Spain
 pcmarijuan.iacs@aragon.es

First of all, we would like to gratefully thank all commentators for the attention and effort they have put into reading and responding to our review paper [this issue, Tozzi et al., 2017a] and for useful observations that suggest novel applications for our framework. We understand and accept that some of our claims might appear controversial and raise skepticism, because the overall neural framework we have proposed is difficult to frame in established categories, given its strong multidisciplinary character. To make an example, Elsevier is publishing the British Neuroscience Association (BNA) 2017 Special Issue Collection. However, our paper could not fully fit in any of their Special Issues—attention, motivation, behavior; sensory and motor systems; novel treatments and translational neuroscience; genetics and epigenetics; learning and memory; neurodegenerative disorders and ageing; developmental neuroscience; neuronal, glial and cellular mechanisms; neuroendocrine and autonomic nervous systems; psychiatry and mental health; methods and techniques. Perhaps because our paper was mathematically, physically, biologically (neuroscientifically), and phenomenologically motivated from the start? Nevertheless, venturing in novel, fresh, testable proposals is badly needed in contemporary neuroscience, so to break into “the utter darkness of the inner mechanism of psychic acts... during the production of the concomitant phenomena of perception and thought, namely, feelings, consciousness and volition”—as Cajal had already observed in his opus magnum ‘Textura’. But as he soberly confessed: “This ideal is still very distant” (Ramon y Cajal, 1899-1904, p. 1,141). In the pursuit of that very ideal, neuroscience and psychology have had, and continue to have, a plethora of movements and schools of thought: behaviorism, cognitivism, neural Darwinism, social constructivism, Bayesian optimization...In our paper, we propose to go a step further, via the notion of topodynamics, towards “projectionism.” In what follows, trying to elucidate the main features of this Emperor’s new clothing, we proceed with the responses to the comments received.

1. Where are the proofs?

Among all the commentators, one (Lerner, [this issue]) has argued that the target paper is lacking the evidence of topological dynamics in the brain. It is somehow unexpected that Lerner fails to see the provided justifications and evidences that are discussed in much detail in the target paper itself. Even though this is a single case, we prefer to address it from the start, since it concerns the validity of our approach. At the same time, constricted by the space

Download English Version:

<https://daneshyari.com/en/article/8206973>

Download Persian Version:

<https://daneshyari.com/article/8206973>

[Daneshyari.com](https://daneshyari.com)