The fallacy within MoBI (Mobile Brain/Body Imaging) research – Open letter – Compelling implications for future scientific MoBI research

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Open letter

The fallacy within MoBI (Mobile Brain/Body Imaging) research - Compelling implications for future scientific MoBI research

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Amsterdam, 29 January 2021

Dear MoBI researchers,

MoBI research is leading or is going to lead within the world of neuro sciences. Genuine in situ research will one day provide the future scientific breakthrough. One of the leading perosonalities within this research is unequivocally prof. dr. Gramann. His accomplishments are astounding, his expertise undeniable and his energy is uplifting the whole MoBi community.
However it is the same prof. dr. Gramann that tells us in a TEDx presentation[1] a few years ago that "*we still have very little idea how the human brain realizes all these complex cognitive functions in our natural environment*". In which he is very generous because even more renowned scientists like Goodale, Millner, Lee, Proske, Gandevia state that they have "*absolutely no idea*" about the motoric and perception processes at the functional c.q. the behavioural level. So it seems that MoBI research will have to take a lot of hurdles and that your future task will become a long energy absorbing bumpy voyage. But then again, if you will be the first one to discover the explanatory model of all motoric movement actions at the functional c.q. the behavioural level then eternal glory will be yours.

However there is a minor bummer present on the bumpy road in front of you. It encompasses the fact that the explanatory model of all motoric movement actions at the functional c.q. the behavioural level has already been discovered. So be aware that after all of your hard work you will only have proven an explanatory model that has been present waiting for you all the years you were ignorant to study it[2]. Is there a positive side? Is there any glory left to gain? Yes, there is. All factual neural processes can now endingly be assessed and the explanatory model will help you in that quest by telling you what is going wrong in nowadays MoBI research and what you conversely will have to do different because current MoBI research is definitely not leading to anything. Or it must be that your primary goal is to just compile billions of meaningless data.

The solution

It occurs that most current MoBI research compels 1. a walking/running/locomotion task *combined* (!) with 2. an extra (cognitive) task. You really don't have the slightest clue about how complex that all is. Solely walking already encompasses the multiple form of a grasp action and the explanatory model of all motoric movement actions shows that within a sole grasp action already three autonomous and two set coupling processes need to occur[3] in which multiple perceptual images are involved *at the exact same moment* (!). Ergo the explanatory model shows that one step already provides so many random data at any given moment that it can never be linked to one focus. So the mixing of a lot of steps with an independent extra cognitive task is hopeless in relationship to the data it will

[1] Imaging Human Brain Activity in Motion | Klaus Gramann | TEDxTUBerlin - YouTube
[2] You are capable to study it at: https://www.researchgate.net/profile/Nj_Mol2
[3] Not 1, not 2, but 3 attentional foci need to be present within the execution of any motoric action. - YouTube

provide. In that way the data belonging to so many different complex subsystems can be never brought back to any functionality.
So you will have to understand that lots of neural perception processes occur *simultaneously* (!) and that due to that fact any recording of neural processes definitely belongs to an unknown mix of functions. The execution of motoric actions encompass a complex system or do you still think that a naive linear explanation will do? So why didn't they solve it then already?

So based on these facts it is not so difficult to deduct that the proof of the explanatory model can only be provided by 1. Restriction and 2. Comparison of a specific motoric action.

Ad. 1 – Restriction

The explanatory model of all motoric movement actions shows unequivocally that within the execution of one motoric action lots of variation possibilities can be noticed due to the fact that we can use lots of hybrid perception processes. Within seconds I can show you how I normally post a letter and a few moments later I can show you the very inferior alternative with which the patient D.F.[4] posts a letter.
Ergo you will have to look for a motoric action in which one is able to isolate the involved variables as sound as possible and that can never be the motoric action walking. The motoric movement action *writing*[5] for example seems to offer very good prospects. I am willing to provide you all necessary information.

Ad. 2 – Comparison

But even though, if such a motoric action can be distinguished in which the variable characteristics can be isolated very well, in such a case it is very probable that the obtained physiological data will still be too complex to be interpreted functionally. Then the only possibility which remains is to strip a motoric action in such a way that two "connected" variables remain and then *to compare the differences* (!) within the occurring data. This *comparing method* (!) will probably be the only way to prove anything. While this comparing method is probably the only way to solve the problem of disturbing artifacts, interferences, noise etc.. A simple *subtraction* (!) algorithm will be capable to just present you the relevant data.

Have a nice journey in which science will hopefully prevail.
I wish you a good corona-free 2021.

With kind regards,

N.J. Mol

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[4] https://www.researchgate.net/publication/335586757_How_does_the_patient_DF_post_a_letter_-The_motoric_movement_action_letter_posting_-_The_explanatory_model_of_all_motoric_movement_actions
[5] (PDF) The explanatory model of the motoric movement action - The Motoric Movement Action Writing - How The Tip Of The Pen Marks The Exact Division Between The Manifest And The Latent Part Of The Action Trajectory Shape