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Review Article

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# Proton Decay Reconstruction in Conscious Phenomenon — Literature Review on MRI, EEG, and PET Technologies

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## Introduction

Consciousness as an autonomous phenomenon has been studied in the context of electromagnetic signaling from the neuronal activities. Genome multiplication culturing has been a primary paradigm in the direct material method of inquiry [1]. Such a method treats autonomy in consciousness phenomenon as specific and particular biogenetic development, but lacks the cohesive human perception and human experience of developmental psychology in consciousness. Nuclear biochemical approach to consciousness adopts functional biology in brain development with relation to neuronal development [2]. Such approach holds social functional presumptions of brain development with hydroelectrolysis methods, and implies a diagnostic subjective cognition in research [2]. While the genome-specific approach is more desirable with encompassed environmental factors and environment-isolated experiments, limitations still exist in phenomenal understandings in whole human experience within the threshold of acceptable ethics [1].

The literature review explores the possibilities in the phenomenological studies of consciousness with existing technological possibilities. Joseph (1987) described the conundrum as being either "conscious of something" or "unconscious of a thought product" [3]. The phenomenological studies treat the term "product" both in its meanings in developmental psychology in human experiences and in nuclear biochemistry in natural miniature decays in human physiology. In the second meaning, in phenomena of unconsciousness such as sleep, product generation in biochemistry is still considered consciousness in a less active and reactive state of human physiology. Radiology and electromagnetism in consciousness phenomena are then treated as trace signatures for the techniques for the phenomenological studies from developmental psychology.

## Literature Review

The literature review aims to explore the technological plausibilities in reconstructing proton decay with existing technologies on individual brains. The assessed technologies are Magnetic Resonance Imaging (MRI), Magnetoencephalography (MEG), Electroencephalogram (EEG), and Positron Emission Tomography (PET). In the technological possibilities, only EEG has the capacities and appropriateness in spanned time series of detection instead of functional sampling with the other two clinical-diagnose-purposed technologies. With the compromise for data precision in individualistic data points' time of collection with necessary procedures, the review explores the theoretical and technical possibilities of a data-recombination approach to map proton decays in human physiological phases. Magnetically shielded rooms are essential for bias reduction from natural signal guidance both on the detection machines and testing subjects, except for local gravity [4].

## PET

PET samples electron-positron annihilation. In clinical practices, positron-emitting radiopharmaceutical such as $^{18}$F-FDG is used [5] in order to reduce signal noises such as natural decays in blood plasma. With such a method, the data points generated will be dependent on one of the $^{18}$F atoms' decay from their causal sources, with a short distance to the sampled annihilation event(s) [5]. With the differences between 2D and 3D PET mainly on the detector planes sampling the events, each 2D detector on a 3D event is gathered and counted in axially sampled Michelograms with direct and cross planes [5]. Irradiation from uniform source will be counted twice as many in cross planes as in direct planes, which means causal reconstruction from collected data in the plots is possible with amplification such as by combining "angular rather than axial samples", individually referred to as "sinogram mashing" with reduced data size [5]. In order to use such a method, projection view in 3D PET will need a different algorithm from the original spatial "differences" to inverted time-axial irradiation source-tracing with uncertainties in each event's decay frequencies from annihilation points detected. This means an imaginary axis needs to be in place in 3D recombination from 2D data planes, in the stead of "sinogram mashing". Further operational analysis on the 4th dimension in biochemical reconstruction will be needed and preferably from a particle-physics perspective instead of an anatomic perspective. From imaging analysis, inter-plane specta

reversion may be a starting point.

Due to the unwanted signals from decay sequences in blood plasma, method optimization from the radiopharmaceutical factor is less operational with complexities to radiological safety in experiment ethics. MRI may supplement data points in theory if without any radiopharmaceutical before testing, however, due to procedural time differentiations and biochemical complexities during, data compatibility will be substantially compromised by any sequential combination. For technical data compatibilities between PET and electromagnetic techniques, contrast-to-noise ratios are essential for bias factorization [6].

## MRI and MEG

Albeit both MRI and MEG captures data on direct electromagnetic activities, the generation mechanisms in sampled plasma orientation differ due to detection methods. In arterial spin labeling (ASL), MRI traces arterial blood water protons in necessity for controlling perfusion in data outcome from diffusion frequencies [6]. Without it, signal noise will increase exponentially due to resonance between perfusion and diffusion in detection. For qualitative research in MRI technique, increasing signal-to-noise ratios in ASL is possible, but the sampled events statistically in data outcomes will not be compatible enough with positron-electron annihilation events, especially if the latter will further adopt axial transformation [6]. However, its capacities for strong magnetic field mapping physiologically with velocity-selective ASL may enhance reference points for the conceptualized PET method. The methodological gaps can be behind the reason that the Brain Imaging Data Structure (BIDS) did not include support for EEG and MEG data and later with MEG incorporated on the basis of electrophysiology [7, 8].

Analytically, MEG is compatible with PET, however, it currently only has two approved indications for pre-operative brain mapping and use in epilepsy surgery in the United States [9]. Whereas the analysis focuses on biochemical detection, in clinical practices, MEG is combined with MRI for structural perspective and / or EEG for chamber electromagnetic fluctuation analysis [9,10]. with few metals compatible if simultaneously with EEG. Due to the environmental magnitudes' comparison to brain electromagnetism, high precision for MEG detection is required and "the magnetic fields diminish as 1/r^3 with the distance of 'r'" [9]. Purely from a data compatibility perspective, event extrapolation between raw PET and MEG data depends on magnification in PET causal reconstruction and electromagnetic string-points in MEG data structure, with bias factors in liquid helium and PET detectors' atomic structures. The time series of MEG interference detection and PET reconstruction method will need further detailed individual experiment. In the time-differentiated events due to detection methods, path-tracing between annihilation and electromagnetism for common sources statistically in sampling points recombination is the major challenge for the proposed methodology [5- 10].

## EEG

EEG may look similar to PET in imaging physiologically, but completely differs from biochemical sampling points. EGG covers physiological effect of brainwaves continuously portable to the detected subject [11]. Downgrade compatibility based on topological statistics by functional MRI in physiology exists to bridge EEG data with MEG data in quantitative waves, recombining continuous diffusion strength, but this diminishes recombination capacities to PET data [12]. However, the method itself can be optimized from the 0 axis of event related fields and event related potentials to the direct plane and inter-plane in PET raw data for a commonly agreeable axis of time series between electromagnetic diffusion and annihilation events [5, 12]. Probabilities of events in continuous EEG and statistical agreeableness with PET and MEG are then mathematically viable with a numerical baseline.

## Discussions

The literature review has explored the possibility and plausibility of raw data recombination among PET, MEG, and EEG possibly with MRI for physiological guidance. It can be functionally operative for consciousness research from proton decay product sampling in brain biochemistry. The methodological review is derived from multi-wavelength data analysis from space-based telescopes based on the inductions on the molecular and subatomic developmental biochemistry in neuronal growth [13]. Without ample clinical experience, the author is not entirely sure if such biochemical recombination in trace signatures would be anatomically verified should such an experiment be conducted. This step for such an experiment may improve the BIDS framework and compatibilities further for biochemical analysis individually in clinical and precautious settings, and quantitatively in contextual common environments [8].

Minimizing statistical bias against individual sampling instruments will be the primary aim for the experimental technique and technical experiment with the scope of brain science and phenomenological approach to consciousness studies. The methodological experimentation is limited for the necessary exclusions of circulatory and vascular system and cardiological quantities. Such indicators will be dependent on surveys in individualistic perceptive and motor activities with implications in brain biochemical product generation from data gathering. In individual biochemical quantities in experiment designs, this has maximized the uncontrollable factors in cross-individual product comparability. In quantitative designs, on what basis can such uncontrolled factor be negligible? For follow-up studies on individual basis, how much bias would the uncontrolled factor generate? And how should it be quantized numerically? The physiological questions are largely dependent upon respective research purposes and designs should the methodological experimentation be viable.

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