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Subject: Research Plan

Extramission Research Plan 6_15_2017

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What Evidence will be Necessary to Show EM???

Summary

The photon emission phenomena of the eye may range from the low-level spontaneous visible wavelength photons that have already been demonstrated by Viirre and Furness, to rapid bursts, near-invisible photon streams that are only activated when precise alignment occurs between the preferred eyes of two naturally "coupled" people. The Extramission research program will be a systematic procedure to look for the most likely coded photon features based on the theoretic utility of the phenomenon to humans. The process will be controlled experiments to detect and verify any systematic coded features discovered. An advanced photonics laboratory with various photo detectors, stimulus control paradigms, specially configured laboratory space and administrative controls and procedures are necessary for this program. Of note, the encoding may be purely in the quantum entanglement states of those photons and a search process for such is planned.

The study program will be feature searches for two different EM paradigms: one for broadcast signals from individuals and the other for signals between two adult people with interpersonal connections with high data transfer rates. A systematic search process will be used for discovery and then controlled experiment procedures within and across subjects will be used to verify the presence of discovered codes. Other feature searches can be considered.

Below are listed the various photon light stream features that should be considered, the two year study program outline and the program budget for one and two years. The first year will be conventional photonics experiments followed by a project review and the second year will be validation studies of the first year and also examine quantum state entangled photons as stimuli. Also in the second year will be investigations of mother/child pairs.

Light Stream Features to Examine:

1. Light Timing

 -Continuous, uncoded/coded

 -Intermittent uncoded/coded, regular/irregular, timed/random

-Stimulus Triggered =ncoded/coded, meaningful/random, regular/random, instantaneous/delayed

2. Light Features

- Wavelength(s), single, narrow band, broadband, multiple, polarization?

= Visible/non-visible

= Endogenous Photon Generation: Back prop Photoreceptors

= External Catalytics with controls: Autofluorescence.

- wavelengths that are likely to be received: photoreceptor or two photon.

=nbsp; - on/off axis

3. Stimuli and Controls

=nbsp; -Dark

=nbsp; Continuous

=nbsp; Recorded Eye

=nbsp; &nbs=; Shuttered

=nbsp; &nbs=; Hooded

-Light Stimuli

=nbsp; Ganzfield

=nbsp; &nbs=; White

=nbsp; &nbs=; Monochromatic

=nbsp; &nbs=; Just Detectable, Moon, Room, Daylight

=nbsp; Spot

=nbsp; &nbs=; Laser

=nbsp; &nbs=; Fovea

=nbsp; Images

=nbsp; &nbs=; Static

=nbsp; &nbs=; Dynamic

=nbsp; &n=sp; &nbs=; =nbsp; Smooth
=nbsp; &n=sp; &nbs=; =nbsp; Saccadic
=nbsp; &n=sp; &nbs=; =nbsp; Voluntary/Directed
=nbsp; &n=sp; Individuals
=nbsp; &n=sp; &nbs=; People
=nbsp; &n=sp; &nbs=; Partners
=nbsp; &n=sp; &nbs=; Mother Child
=nbsp; &n=sp; Non Visual
=nbsp; &n=sp; &nbs=; Auditory
=nbsp; &n=sp; &nbs=; Mental Continuous, Trigger: Visualization

-Stimulus Triggers: =nbsp;uncoded/coded, meaningful/random, regular/random, instantaneous/delayed

4.) Eye

=nbsp; -Monocular: continuous
=nbsp; &n=sp; same eye/fellow eye

- binocular
- Closed Eye
 - o Through Lid
 - o Eye forced open
 - o Experimental CL

5.) Code

=nbsp; -Continuous
=nbsp; -Pulse: Regular/Irregular

-Stimulus Triggered: uncoded/coded, meaningful/random, regular/random, instantaneous/delayed

- entangled

Laboratory Requirements

Sensor:

- Low Light: PMT, Avalanche Photodiodes,
- Camera, Visible, IR, UV, =Hz?
 - Unobstructed path/filters
- Hood for Darkness in recorded eye, light stimulus through shutter, or fellow eye.
- Divided path: stimulate and record same eye
- Possible Binocular Recording

Stimuli

- Same/fellow eye mono/binocular
- Control
- Timing: delay minimize (shutter/piezo/optical resonance element)
- &nb=p; Entangled Photon stimuli with verification of receipt of entanglement.

Eye Activity

- Blinks
- EOMs: gaze patterns: gaze contingent tasks

Brain Activity

- Attention/Alpha
- VEP

Data Acquisition

- Continuous Recording with Epoch Marking

=nbsp; Audio, trigger with control

=nbsp; Blink EOM record

=nbsp; EEG signals

Analysis

=nbsp; Data Recording and Analytic Algorithms.

=nbsp;

Laboratory =pace Set-up:

Light Control =hamber

=nbsp; Subject

=nbsp; Stimulus

=nbsp; Experiment video recording: on axis, off axis

=nbsp; Lighting controls

=nbsp; Air quality for test subjects

Control Room

=nbsp; Intercom

=nbsp; Lights

Procedure

Prediction =iven Systematic Search: Discovery via Controlled Experiments

The challenge to executing this program will be to efficiently search the available feature space with a process that will be most likely to detect any coded features. Unlimited =ime and universal fine-resolution examination of all possible parameters is =ot possible. Thus review, by a group of knowledgeable experts, of likely =eatures would be done. Clever use of broad wavelength detection photonics will =ead to a search pattern that has the best chance to rapidly detect photons and =hen coded signals within the photon stream. Once any coded features are =abeled, then repeated tests within and across individuals will be used to verify =he identification.

"I'm Here" Broadcast vs. Inter-personal Data Transfer

Two likely coding paradigms are a broadcast signal that has rudimentary signal content, such as "I =80 m Here" vs. a detailed data transfer stream that occurs during concentrated direct interpersonal interaction between two people.

The broadcast EM paradigm would incorporate broadcast features: wide angular spread, low signal content, =ut high reliability, continuous and repeated signals. It would occur in circumstances where other signals might be reduced: low light and quiet =udio. It would likely use endogenous photon generation especially as ambient =ight may be low or indirect, but two photon cascades might be used. Higher energy photons would be more likely to serve as signal carriers and thus should =e part of the spectrum tested for.

Thus to detect the =roadcast paradigm, continuous recording in the visible wavelengths would be =straightforward and feasible. Highly sensitive photomultiplier tubes and avalanche =hotodiodes would be able to detect small numbers of photons, and the system would =e configured for continuous presentation of the photon detection in a =ontrol room display. Ambient conditions would be darkness, low light and visual stimuli such as shadows of people. Monocular recording would be done =ith a hooded recording eye and an un-occluded receiving eye. Rudimentary codes =ould be looked for by visual inspection and simple code detection algorithms =hat detect repeated patterns.

The data transfer paradigm, which would be revolutionary science if discovered, will take a dedicated =roject to detect. The paradigm is two individuals who can gaze directly into each =ther's eyes. In a "co-equal" partnership, transfer would be =xpected to be two ways, so one way detection would suffice. A key item would be the passage of =hotons from one transmitting eye and where that eye is aligned. Eye =E2 preference" would most likely determine both the transmitting eye and receiving eye. =iming of the Extramission would depend on the gaze being "locked in"=to the receiving eye, blinks, microsaccade intrusions and then signals for stimulus. The =erson with the receiving eye would be the stimulator: what would they signal? Continuous recording for bursts of photons would be used. Endogenous =hoton generation would be the most likely photon generator, but broad-spectrum detectors would be used to improve detection rates. Recording of all =ctivity features of emitter, receiver, photons, eye activities, stimuli would be =eeded to ensure successful detection.

Extramission Study Budget

1 year

2 years

Year One

Year Two

(Thousands)

Personnel

(burdened)

PI: Erik Viirre =49%)

150

150

Optical Engineer =:

175

175

Data Equipment =ngineer 1:

150

150

Analyst 1:

150

150

Technician

100

100

Administrator

100

100

Consultants (TAF + QM =r 2)

100

200

Code Breaker

50

100

Equipment

PMT

20

Avalanche =hotodiode

20

Computer Controls

50

Eyetracking

100

Optics

50

Light hoods etc.

25

Entanglement

250

Infrastructure

Lab (10X10)

Control Room =10X5)

Meeting Room =10X20)

Admin/reception (10 X =0)

Total 1000 sq =t

25

25

Admin Costs (IRB =tc)

5

5

Travel

50

75

Total

1055

1230

Plus Overhead =15%)

1213.25

1414.5

Total Equipment

265

250

Total recurring + equipment

1478.25

1664.5

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