

## ETHICS COMMITTEE FORM

NAME OF PROPOSER: Hartmut Leuthold  
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POSITION HELD: Reader in Psychology  
DEPARTMENT/  
GROUP/CENTRE: Centre for Cognitive Neuroimaging (CCNi) & Department of Psychology  
NAME OF SUPERVISOR: N/A  
PROJECT TITLE: **Standard Functional Electroencephalography (EEG) Studies of Cognitive Mechanisms in Normal Adult Volunteers**

### **1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH:**

This proposal describes "standard EEG studies" as we propose to conduct them in CCNi. The term "standard EEG studies" used throughout this document refers to studies conducted in normal adult volunteers, for which brain activity is recorded while the volunteer performs cognitive/motor tasks. Each new study falling into the "standard EEG studies" category will require its own ethics approval, but the proposal will refer to the present document to ease the submission and review process. Studies not falling into the "standard EEG studies" category, for example because they involve children, clinical patients, or stimulation of a deceitful or painful nature, will require submission to the Ethics Board with full details.

Electroencephalography (EEG) is a completely non-invasive functional imaging technique. Neural activity in human brains is associated with tiny electric currents that are recorded outside the human head by means of number of electrodes attached to the scalp. EEG will be used to record, localize and characterize the highly dynamic neural activity of the brain in a large variety of cognitive tasks. The main strength of EEG that will be exploited in future studies lies in the high temporal of the recorded signals.

### **2. INDICATE WHO IS FUNDING THE RESEARCH (IF COMMERCIALY FUNDED, ENSURE THAT PARTICIPANTS ARE INFORMED).**

The EEG experiments will be funded by various research councils and funding bodies.

### **3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF SUBJECTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) (BPS Section 2&8):**

The experiment will be conducted in one of the experimental booths in the Department of Psychology in Hillhead Street. While participants are carrying out the experiment, their brain activity will be recorded (EEG) using standard EEG equipment (see also 4.). Standard experiments usually require around twenty participants, who are all likely to be undergraduate students at the University of Glasgow.

The recording of EEG, which reflects changes in electrical fields caused by the brain's activity, can be measured with electrodes that are attached to the scalp surface. The procedure of electrode attachment is painless (though it might occasionally give rise to a slight feeling of discomfort). Participants' forehead and mastoids are cleaned using alcohol pads before electrodes are applied to improve contact with the skin. In this lab we are using an Active Electrode Amplifier System (BIOSEMI) that was specifically designed to

maximise comfort during application. After the recording session the electrolyte gel may need to be removed from the hair, which is easily done by a hair wash. A typical recording session involves about 20 minutes for electrode application, followed by the experiment of 45 min to maximally 1 hour duration. Frequent breaks are interspersed in the experimental task (one break every 3 minutes).

**4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS:**

The procedures involved in this experiment should have no significant effect on the participants. Before the experiment, participants will be informed about the nature of electrophysiological recording and will be given specific task instructions. During the procedure they will be encouraged to take breaks regularly.

**5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (BPS All Sections):**

No ethical issues are involved in a typical EEG experiment.

**6. SPECIFY THE NATURE OF THE PARTICIPANTS. INDICATE IF THE RESEARCH INVOLVES CHILDREN OR THOSE WITH MENTAL DISABILITIES OR HANDICAP ([see BPS §3](#)) IF SO, EXPLAIN THE STEPS TAKEN TO OBTAIN PERMISSION FROM L.E.A.s, HEADTEACHERS, PARENTS, ETC...**

Healthy adult volunteers.

**7. STATE IF PAYMENT WILL BE MADE TO SUBJECTS:**

A standard payment of £6 per hour will be made to subjects.

**8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS**

Participants will be recruited by adverts detailing the purpose and duration of the experiment. Written informed consent will be obtained from participants prior to the study.

**9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE B .P.S. CODE OF CONDUCT (BPS All Sections):**

"Standard EEG studies" are in accord with the BPS code of conduct.

**10. DESCRIBE HOW THE SUBJECTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED (BPS Section 7):**

Participant's data will be labelled with a number and subsequent analyses of the data will use the subject number rather than the participant's name. None of the data will be identifiable as any specific participant's.

**11. DATE ON WHICH PROJECT WILL BEGIN:**

EEG recording at CCNi after February 1st, 2008.

**12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT:**

Department of Psychology, University of Glasgow, 58 Hillhead Street.

**13. DESCRIBE HOW SUBJECTS WILL BE DEBRIEFED AT THE END OF THE EXPERIMENT. (THIS MUST INCLUDE THE OPPORTUNITY TO CONTACT THE EXPERIMENTER (OR SUPERVISOR) FOR FEEDBACK ON THE GENERAL OUTCOME OF THE EXPERIMENT) (BPS Section 5&10):**

After the experiment participants will be briefed about the purpose of the research. They are given contact details of the investigator on the Study Consent Form (attached), as well as contact details for the responsible of EEG at CCNi, Dr Hartmut Leuthold, for further questions and concerns. If they are interested, they will be given a more detailed description of the experiment and its aims.

**14. ATTACH PARTICIPANT INFORMATION FORM AND CONSENT FORM  
(see BPS § 3 & 6)**

*As part of the automated process, these files are required in order to proceed. If you do not have one of these files, submit an empty text file and sort the matter with the ethics committee.* (Please make sure that the files you are submitting can be readable by the members of the committee. Do not send compressed files as these are OS dependent. Best file formats are MSWord or plain text)