REPORT ON ETHICS PROPOSAL
REF# CSE00965 (Version 1)
TITLE: Investigation into the effective application of abdominal functional electrical stimulation in the able bodied population
SUBMITTED BY: [redacted], PG
FROM THE: Engineering
REVIEWERS: Hester Parr, Joemon Jose, Lars Muckli

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

A spinal cord injury in the cervical (neck) region is termed tetraplegia. Tetraplegia can lead to a loss of motor function and sensation, as well as paralysis of all four limbs. When a person suffers from tetraplegia their main breathing muscles are also compromised, leading to reduced respiratory function. This reduced respiratory function leaves the patient at an increased risk of respiratory complications, a leading cause of rehospitalisation and mortality in the tetraplegic population [1,2]. Respiratory complications also place a large financial constraint on the local health care provider [3].

Abdominal functional electrical stimulation (AFES) is a well established technique to help improve breathing function in spinal cord injured patients with tetraplegia [4,5,6]. For AFES to be practical for long term use stimulation should be applied in synchrony with the user's voluntary breathing activity, requiring an automatic trigger based on a signal from a non intrusive sensor. An automatic AFES system [6] has previously been shown to improve breathing function in the tetraplegic population [6]. This system was based on measuring the airflow at the patient's mouth and nose, using a facemask and spirometer, to generate an automatic stimulation trigger. The use of a facemask is intrusive and leaves the participant unable to eat, speak or drink while the system is in use; limiting the duration of any AFES session. Alternative sensors, such as piezoelectric effort belts which are worn around the abdomen or the chest, have previously been shown to be a suitable non intrusive technique to monitor breathing function in sleep studies [7]. The first aim of this study is to investigate the use of a piezoelectric belt to automatically trigger abdominal muscle stimulation in able bodied participants. This would negate the need for a spirometer and facemask, leading to increased comfort for the patient, thus increasing the possible duration of an AFES application.

It is well known that when using functional electrical stimulation (FES) the optimum muscle contraction will be observed when stimulating close to the motor point of the muscle [8,9]. However, to date no studies have evaluated the position of the motor points in the abdomen which leads to the most effective stimulation. Previous studies have used a pen electrode, coupled with single pulse stimulation, to determine the motor point of muscles in the leg [10]. The small contact area for stimulation with a pen electrode could lead to discomfort for able bodied participants. This study proposes to use a bar electrode to evaluate the position of the motor points of the rectus abdominis and external oblique muscles in able bodied participants. The variability of this motor point position within individual participants and between participants will also be analysed.

The outcomes of this study in the able bodied population will inform the design of a related study in the spinal cord injured population.

Aim

The aim of this study is two-fold. The first aim is to determine the motor points of the abdominal muscles in able bodied participants. The second aim is to evaluate the use of a piezoelectric belt for automatic triggering of AFES. In this study all experiments will be carried out on able bodied participants with a view to implementing the techniques in spinal cord injured patients.

The first aim will give an indication of the optimum electrode position (and its variability) for AFES. By firstly conducting the test in able bodied participants it will allow evaluation of the ease of motor point detection before developing the protocol to test this procedure in the tetraplegic population.

The second aim will build on previous work where an automatic stimulation technique was developed for AFES. This system uses the signal from a spirometer as the input signal. However a spirometer requires to be coupled with a full face mask which is intrusive and leaves the user unable to eat, speak or drink. Therefore it would be beneficial to establish whether a non intrusive piezoelectric belt positioned around the stomach or chest could be used to provide a signal suitable for automatic AFES triggering.

References

[1] D.D Cardenas et al. Etiology and incidence of rehospitalization after traumatic spinal cord injury: a multicenter analysis. Arch Phys Med Rehabil, 85, 1757-1763, 2004.
[2] C.P. Cardozo. Respiratory complications of spinal cord injury. J Spinal Cord Med, 30, 307-308, 2007.
[3] C. Winslow et al. Impact of respiratory complications on length of stay and hospital costs in acute cervical spine injury. Chest, 121, 1548-1554, 2002.
[4] U. Stanic et al. Functional electrical stimulation of abdominal muscles to augment tidal volume in spinal cord injury. Rehabilitation Engineering, IEEE Transactions on, 8(1):30â•fi34, 2000.

[5] W. E. Langbein et al. Pulmonary function testing in spinal cord injury: effects of abdominal muscle stimulation. J Rehabil Res Dev, 38(5):591â•fi597, Sep-Oct 2001.

[6] Gollee et al. Automatic electrical stimulation of abdominal wall muscles increases tidal volume and cough peak flow in tetraplegia. Technol Health Care, 16(4):273â•fi281, 2008.

[7] K. Dingli et al. Evaluation of a portable device for diagnosing the sleep apnoea/hypopnoea syndrome. Eur Respir J, 21, 253-259, 2003.
[8] L.R. Sheffler and J. Chae, Neuromuscular electrical stimulation in neurorehabilitation. Muscle Nerve, 35, 562-590, 2007.
[9] C.S. Bickel et al. Motor unit recruitment during neuromuscular electrical stimulation: a critical appraisal. Eur J Appl Physiol, 111, 2399-2407, 2011.
[10] M. Gobbo et al. Transcutaneous neuromuscular electrical stimulation: influence of electrode positioning and stimulus amplitude settings on muscle response. Eur J Appl Physiol., 111, 2451-2459, 2011.

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

This research will be supported by an EPSRC doctoral training award. No commercial funding shall be sought for this project.

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

Participants

5 able bodied participants will be recruited from staff and students within the School of Engineering at the University of Glasgow for this study. Participants will be provided with an information sheet and asked to give informed consent before taking part in the study.

Methods

Participants will be asked to attend one assessment session of approximately one hour duration. In the first part of the session, the motor points of the abdominal muscles will be established. A bar electrode (ADInstruments, Australia) will be used to apply single stimulation pulses. The electrode will be positioned below the 12th rib. The current will be adjusted and the electrode moved until the strongest contraction of the external oblique muscle is observed. This will be taken as the position of the motor point and will be recorded with reference to the tip of the Iliac crest and the midline of the body, both of which should remain fixed reference points throughout the course of the assessment. This procedure will be performed for the subjectâ•Žs left and right side. The electrode will then be placed approximately 1 inch to the left and then 1 inch to the right of the umbilicus in order to ascertain the motor points of the rectus abdominis. This procedure will take approximately 5 minutes.

Two piezoelectric respiratory effort belts (ProTech, USA) will then be fixed around the participantâ•Žs abdomen and chest. The signals from these belts will be recorded using a laptop via a data acquisition card (National Instruments, USA) at a sample rate of 100 Hz. The signals from the belts will be used to automatically trigger the AFES synchronised with the participantâ•Žs own breathing. The stimulation will be triggered and applied at the end of the participantâ•Žs inhalation, which will be taken as when the belt signal value changes from a negative to a positive value.

Abdominal stimulation will be applied via four pairs of surface electrodes (PALS, Axelgaard), placed on the abdomen. One pair of electrodes will be placed on both the right and left side of the rectus abdominis around the motor points found earlier in the study. One pair will also be placed below the 12th rib on the right and left side of the external oblique muscles around the motor points of this muscle found earlier in the study. Stimulation intensity will be adjusted on a channel by channel basis until a strong visible contraction of the abdominal muscles is achieved. The participant will then be asked to breathe with the assistance of AFES for 5 minutes. The suitability of the belt signal for triggering AFES will be continually monitored throughout the experiment. If the belt signal proves to be unsuitable for triggering, i.e. it is either delivering no or the incorrect stimulation, the stimulation will be stopped.

The process of determining the position of the motor points of the abdominal muscles will be repeated at the end of the experimental session in order to determine the repeatability of this procedure. The same experimenter will record the position of all motor points to reduce experimental variability.

A sample size of 5 was chosen as this is a feasibility study. The results from this study will be used to inform the design of a study where AFES will be used in the spinal cord injured population.

Equipment

A programmable neuromuscular stimulator (Hasomed, Germany) will be used to apply stimulation to

ascertain the motor points. Stimulation intensity will be adjusted, the position of the electrode adjusted and one stimulation pulse will be applied, until the strongest visible contraction of that muscle is observed. The single stimulation pulse will be applied via a bar electrode (ADInstruments, Australia) which allows specific targeting of the motor point.

The neuromuscular stimulator will also be used to apply 5 minutes of abdominal stimulation. A biphasic stimulation pattern of frequency 20Hz will be applied to the participantâ•Žs abdomen. As the participants will have sensation in the abdomen stimulation intensity will be reduced if the sensation becomes uncomfortable. The stimulation intensity will also be able to be adjusted at any point throughout the test. The stimulation will be triggered using the signal from a piezoelectric belt using a custom interface.

A piezoelectric belt (Protech, USA) will be used to trigger the stimulation. The voltage output of a piezoelectric belt varies as it is displaced, the exact output being a voltage signal proportional to the stretch velocity. In this study two belts will be placed around the abdomen and chest and secured using Velcro straps. The movement of the abdomen and chest during breathing will cause the belts to stretch. The stretch velocity of the belt is related to the flow rate of air from the lungs. The signals from the belts will be recorded using a laptop via a data acquisition card (National Instruments, USA) at a sample rate of 100 Hz.

All equipment used conforms to the relevant medical device regulations.

Inclusion and Exclusion criteria

Inclusion
â¢ Men or women aged over 18 years of age
â¢ Able bodied and in good health

Exclusion
â¢ Under 18 years of age
â¢ Female subjects who are pregnant
â¢ Unable to give informed consent

Outcome measures

There are two main outcome measures for this study. The first outcome measure is the position and variability of the motor points of the abdominal muscles. The second outcome measure is the suitability of a piezoelectric belt for AFES triggering.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

Able bodied participants may experience some degree of discomfort from the sensation of the electrical stimulation however the stimulation intensity will be adjusted so that discomfort is kept to a minimum. There will be no long lasting effect from the procedures on the participant.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

There are no major ethical considerations associated with the study.

Electrical stimulation has been used as a rehabilitation tool for many years. Electrical stimulation via surface electrodes positioned on the abdomen is a common procedure for the rehabilitation of spinal cord injured and stroke patients. It is not known to be harmful or present a risk of injury, provided that the appropriate safety guidelines provided by the manufacturer are followed. Able bodied participants may experience some degree of discomfort from the sensation of the electrical stimulation however the stimulation intensity will be adjusted so that discomfort is kept to a minimum.

All other equipment presents no risk to the subjects.

All participants will be closely monitored during the experimental procedures. Participants will be free to withdraw from the study, at any time, without reason.

All appropriate first aid regulations will be adhered to during the experiments. [redacted] is a certified first aider. In the unlikely event that emergency medical help is required the subject will be put in the recovery position and, if [redacted] is not present, a first aider from within the James Watt (South) Building will be contacted directly on a landline telephone from within the lab (Room 647/648). Following instruction from the first aider, if further medical assistance is required an ambulance will be contacted by telephone from within the lab.

Arrangements for the provision of further clinical facilities to handle emergencies are considered to be unnecessary for this study.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Participants will be recruited from staff and students within the School of Engineering at the University of Glasgow. No children or people with mental disabilities or handicap will be recruited.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

No payment will be made to the subject.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Participants will be approached directly by the experimenter for recruitment onto the study. Participants will be recruited from staff and students within the School of Engineering at the University of Glasgow. All participants will be asked to sign a consent form before the experiment begins.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

The research is in accordance with the BPS code of conduct.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

Each participant will be assigned a subject number. All data will be anonymised with the date and subject number so that participants will not be able to be identified and data will only be used for this research study. Data will be stored in password-protected computers which will be stored in a locked office. All consent forms and experimental notes will be stored within a locked filing cabinet.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

1st of February 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

All procedures will be carried out within the Rehabilitation Engineering lab, Room 647/648, James Watt South Building, University of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

At the conclusion of the experiments participants will be verbally debriefed by the experimenter as to why this study has taken place and the results which it may yield. At the end of the experiment participants will be able to contact either the experimenter or supervisor for further information with regards to the outcome of the experiment. Participants will be made aware of the outcome of the experiment through the dissemination of the results via presentations and journal papers.

University of Glasgow

INFORMATION SHEET

1. Study Title: Investigation into the effective application of abdominal functional electrical stimulation in the able bodied population

Investigators: [redacted] Dr. Henrik Gollee
Centre for Rehabilitation Engineering, Department of Mechanical Engineering, Faculty of Engineering, University of Glasgow

2. Invitation:

You are invited to take part in a research study. Before you decide, it is important for you to understand why this research is being done and what it will involve. Please take time to read the following information carefully. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.

Thank you for reading this.

3. Purpose of the study:

Tetraplegia is paralysis which affects all four limbs and the breathing muscles. It is caused by an injury to the spinal cord in the neck area. This paralysis of the breathing muscles leads to a reduced ability to breathe for people with tetraplegia. This reduced ability to breathe leaves the patient at an increased risk of respiratory complications, a leading cause of rehospitalisation and death for people with tetraplegia.

Abdominal functional electrical stimulation (AFES) is a technique designed to help improve the breathing ability of patients with tetraplegia. AFES works by making the stomach muscles contract by applying an electrical pulse to them. To allow AFES to be easily used in a hospital or in a person's home an automatic system was developed. This system detects different breathing situations and triggers AFES accordingly. However it relies on air flow measurements taken at the mouth. This is intrusive and limits the practicality of the system. A piezoelectric belt worn around the stomach or chest gives a signal related to how that part of the body moves. These belts have previously been shown to be a suitable way to monitor breathing in sleep studies. The first aim of this study is to investigate the use of a piezoelectric belt to automatically trigger AFES.

The motor point of a muscle is where the signal from the brain is sent to tell the muscle to contract. It is known that when using functional electrical stimulation (FES) the best muscle contraction will be seen when stimulation is applied close to the motor point of the muscle. However, so far no studies have measured the position of the motor points of the stomach muscles. This study will use electrical pulses to stimulate the motor points of the stomach muscles. The position of this motor point will be measured and compared between different people.

The results of this study will be used to design a similar study in the spinal cord injured population.

4. Why would your participation be useful?

Your participation in this study will provide important information for the design of a similar study involving people with tetraplegia. The data from this study involving tetraplegics will then be used to develop an AFES system which would be used by a tetraplegic person to improve their breathing ability. Techniques to improve respiratory function are exceptionally important for people with tetraplegia as illnesses resulting from respiratory complications are a main cause of death and ill health for this population.

5. Do you have to take part?

No. Taking part in this research is entirely voluntary. It is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are free to withdraw at any time and without giving a reason or prior notice.

6. Procedures

You will be asked to take part in one experimental session which will last approximately 1 hour.

In the first part of the session we will establish the position of the motor point of your stomach muscles. This will be done by using a small bar which is able to apply a small electrical pulse to your stomach muscles. We will move this bar over your stomach and watch your stomach move. When the biggest movement of your stomach is seen we will record this position. We will repeat this 3 more times to get measurements for the motor point on the right and left hand side of both your stomach muscles. This procedure will take approximately 5 minutes.

For the second part of the session two piezoelectric belts will be placed around your stomach and chest over the top of your clothes. These belts can detect changes in the size of your stomach and chest while you are breathing. The signal from these belt will be used to start each burst of stimulation.

AFES will be applied via four pads placed on your stomach called electrodes. AFES will cause your stomach muscles to contract and will also cause a 'pins and needles' type feeling. The stimulation level will be increased slowly until a strong contraction of your stomach muscles is observed while minimising the discomfort to you. Before beginning any measurement we will ask you to familiarise yourself with breathing while wearing the belt and while AFES is turned on. You will then be asked to breathe with AFES turned on for 5 minutes. During this time the AFES will come on in every time you breathe out for one second. When you start to breathe out will be determined from the signal of the belts.

The measurement of the motor points will be repeated at the end of the test in order to measure whether they have moved during the test.

7. Possible Risks:

Electrical stimulation has been used as a rehabilitation tool for many years. Electrical stimulation via surface electrodes positioned on the stomach is a common procedure for the rehabilitation of spinal cord injured and stroke patients. It is not known to be harmful or present a risk of injury, provided that the appropriate safety guidelines given by the manufacturer are followed. You may experience some degree of discomfort from the sensation of the electrical stimulation however the stimulation intensity will be adjusted so that discomfort is kept to a minimum.

All equipment used conforms to the relevant medical device regulations.

8. What if something goes wrong?

There is no further identifiable risk involved in your participation in the study. If you are harmed by taking part in this research project, there are no special compensation arrangements. If you are harmed due to someone's negligence, then you may have grounds for a legal action but you may have to pay for it.

9. Publication of Results:

Results of the study will be submitted for publication, but your identity will not be revealed. Photographs of experiments may be taken, but only with your consent. If you agree to photos being taken, you do so on the understanding that they may appear in publications or on websites describing research results.

10. Who has reviewed this study?

This study has been reviewed and approved by the Ethics Committee of the School of Engineering at the University of Glasgow.

11. Contact for Further Information:

If you would like further information, or if you would like to discuss any aspect of the study, please do not hesitate to contact one of the investigator listed below:

[redacted]
Centre for Rehabilitation Engineering
School of Engineering
University of Glasgow
Glasgow G12 8QQ
[redacted]

Dr. Henrik Gollee
Centre for Rehabilitation Engineering
School of Engineering
University of Glasgow
Glasgow G12 8QQ
Tel: 0141 330 4406
Email: henrik.gollee@glasgow.ac.uk

Thank you very much for considering participation in this study.

Subjects will be given a copy of the Information Sheet and a signed Consent Form to keep.

Centre for Rehabilitation Engineering

Patient Identification Number for this trial:

Participant Consent Form

Project title: Investigation into the effective application of abdominal functional electrical stimulation in the able bodied population

Name of Researchers: [redacted] **and Dr Henrik Gollee** (Please initial boxes)

1. I can confirm that I have read and understood the participant information sheet **version 1.0 dated 20th December 2011**, for the above study and have had the chance to ask questions. ☐

2. I understand that my decision to take part is voluntary and that I am free to stop taking part at any time. ☐

3. I understand my picture may be taken and used to in publications, presentations or on websites where this research will be disseminated, however I will not be able to be identified in these photographs. ☐

4. I agree to take part in the above study. I understand that I will get a copy of this signed and dated consent form. ☐

Name of Participant

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Name of Witness Date Signature

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Name of Researcher Date Signature

1 copy for participant and 1 copy for researcher

REPORT ON ETHICS PROPOSAL
REF# CSE00914 (Version 1)
TITLE: Using social media to monitor crisis events
SUBMITTED BY: [redacted], Student
FROM THE: School of Computing Science
REVIEWERS: Lars Muckli, Monika Harvey, Simon D. Rogers

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The purpose of the proposed research is to conduct analysis of social media streams; specifically to analyse the content to identify information relevant to a particular event occurring in real-time. The domain of interest is crisis event management. This includes collecting content from social media applications such as Twitter, Flickr, YouTube and Tumblr which is all related to crisis events such as the December 2010 M8 motorway snowstorm, the February 2011 Sauchiehall Street fire, and the summer 2011 English riots.

I am applying for ethics approval to obtain permission to use data from social media sources in my research project, and to ensure that I can publish my findings based on this data. All social media users and usernames will be protected and kept confidential in any printed or online material produced.

Ł COMMENT FROM LARS MUCKLI: Please specify hypothesis: Information about what? correctness of information ? timely information? style of communication ? etc..

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

The EU research project, PuppyIR (http://www.puppyir.eu/).

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The experiment involves downloading social media streams â•fi such as those mentioned above â•fi and compliance with each social media application's terms of service, for different crisis events. As a result of this, there are no direct participants for this experiment.

Ł COMMENT FROM LARS MUCKLI: 'Compliance with each social media application's terms of service' Please specify: if and how a media application's terms address scientific analysis of media streams. The Question I have: Social Network user might not be aware that the data is used for scientific purposes. But there might be a statement that makes them aware it is open domain or suchâ•ƒ which would be helpful

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

As previously mentioned, there are no direct participants in this experiment.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

Since the streams from social media applications contain within them information which could be used to identify a user's profile â•fi for example, an indirect or web identity â•fi there is a way to potentially identify a t person.

Ł COMMENT FROM SIMON D. ROGERS: Presumably, given that the information is already in the public domain, this is not a problem.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Unknown.

Ł COMMENT FROM LARS MUCKLI: usually social networking users have an official minimum age i.e. facebook 13

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

No payment will be made to the subject.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Not applicable.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

This proposal is in accordance with the university's guidelines.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

To ensure the anonymity and confidentiality of the users of social media applications for which we have extracted content, we shall anonymise any references to the user's online name.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

01/11/2011

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

The project will be carried out at the School of Computing Science, University of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

Not applicable.

REPORT ON ETHICS PROPOSAL
REF# CSE00914 (Version 2)
TITLE: Using social media to monitor crisis events
SUBMITTED BY: [redacted], Student
FROM THE: School of Computing Science
REVIEWERS: Lars Muckli, Monika Harvey, Simon D. Rogers

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The purpose of the proposed research is to conduct analysis of social media streams; specifically to analyse the content available via these streams to identify information relevant to a particular event occurring in real-time. The domain of interest is crisis event management, and will include collecting content from social media applications such as Twitter and YouTube. Content of interest for this experiment will contain particular keywords related to the event in question (such as the use of hash-tags), and will be filtered in real-time as it is posted by the originating user.

Samples of crisis events include that of the December 2010 M8 motorway snowstorm, the February 2011 Sauchiehall Street fire, and the recent Cyclone Friedhelm, which hit Scotland on December 8 2011, generating much discussion on social media networks.

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

The EU research project, PuppyIR (http://www.puppyir.eu/).

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The experiment involves the downloading of publically available user-generated content via social media streams â•fi such as those mentioned in section 1 above â•fi in compliance with each social media applicationâ• terms of service (ToS), such as those of Twitter, which can be found at the URL https://dev.twitter.com/terms/api-terms/2011-04-13 (as of January 10, 2012).

Whilst ensuring that the software application developed complies with the requirements set out in the ToS, I have sought clarification from Twitter regarding the use of data for scientific purposes. Through their specialist e-mail api-research@twitter.com, I have received confirmation that if the application complies with the ToS, it is suitable for use in a scientific experiment.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

As previously mentioned, there are no direct participants in this experiment.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

Since the streams from social media applications contain within them information which could be used to identify a user's profile â•fi for example, an indirect or web identity â•fi there is a way to potentially identify a t person.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Unknown.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

No payment will be made to the subject.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Not applicable.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

This proposal is in accordance with the university's guidelines.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

To ensure the anonymity and confidentiality of the users of social media applications for which we have extracted content, we shall anonymise any references to the user's online name.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

01/02/2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

The project will be carried out at the School of Computing Science, University of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

Not applicable.

INFORMATION SHEET

As this project will have no direct participants, no information sheet will be required.

CONSENT SHEET

As this project will have no direct participants, no consent sheet will be required.

REPORT ON ETHICS PROPOSAL
REF# CSE00966 (Version 1)
TITLE: Cross-modal Associative Memory Task as a biomarker for Alzheimerâ•Žs Disease: Evidence from EEG and fMRI.
SUBMITTED BY: [redacted]
FROM THE: Psychology
REVIEWERS: Helen C. Purchase, Monika Harvey, Stephen Brewster

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The purpose of this study is to further assess the effectiveness and deepen our understanding of a cross-modal associative memory paradigm (spoken word-picture paradigm) as a biomarker for healthy aging. Episodic memory is one of the earliest cognitive components to show change during normal aging. The proposed research employs both EEG and fMRI measures to characterize cognitive and brain function in adults aged 50-65. The EEG data will also be compared with existing datasets from healthy young adults, and healthy adults aged 65-90. The task is designed to generate activity in the medial temporal networks associated with episodic memory. The purpose of the present study is to acquire EEG data with the cross-modal memory paradigm from participants who will also participate in an fMRI study employing the same experimental paradigm. The aim of the overall study is to exploit the good temporal resolution of EEG measures together with the excellent anatomical localisation of the fMRI. This is especially important as the localisation of the area of interest, the hippocampus, is a relatively deep structure within the brain, and is generally not accurately imaged using source localization methods based on EEG. The addition of fMRI data for each individual also offers the possibility of controlling for individual brain anatomy and functional differences.

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

This experiment is not currently funded.

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

This is a within-subject, event-related design with three independent variables; old pairs presented after a long delay, old pairs presented after a short delay and new pairs.
Each participant will undergo an EEG scan whereby ERP measures could be assessed as well as assessment of the behavioural memory test. Around 20 normal healthy adult volunteers between the ages of 50-65 will be recruited. Participants will be scanned using a 128-channel geodesic sensor net. The procedure of electrode attachment is painless and there are no gels or abrasion required minimising discomfort and risk of infection.
Scanning will commence whilst participants are presented with associated spoken word-picture pairs on a computer screen, some of which will be repeated later within the task trials. Participants will be instructed to press appropriate buttons to indicate whether they believe the pairs to be â•Ÿnewâ•Ž (seen previously) or â•Ÿoldâ•Ž (never been seen before). The memory task should take no longer than 20 minutes to complete.
EEG data will be compared to data collected from participants subjected to the same procedures in the

fMRI scanner. Ethics for the fMRI component of this study have already been obtained.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

Participates sometimes report slight drowsiness during testing, but the test phase is divided into two 9 minutes blocks to provide rest time. Participants are informed in advance that they should arrive with clean, dry hair, with no hairspray or other treatments, and that their hair will become damp in the course of testing. The complete procedure, including meeting the subject, preparing and placing the electrode net, collecting the data, and finishing and debriefing typically requires under 50 minutes. The experimental component, in which the subject is seated at the computer and performing the task takes 20 minutes.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

There are no ethical issues associated with this study as all participants are asked to give full consent to participate and are fully aware of their option to pull out of the experiment at any time they may wish to do so.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Normal Healthy 50-65 year olds.
No Children or mentally disabled/handicapped.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

A payment will be offered to participants once they have completed both the EEG and fMRI component of this study.

Ł COMMENT FROM HELEN C. PURCHASE: You should probably say on the information sheet how much the payment is

Ł COMMENT FROM MONIKA HARVEY: Agree with Helen’s comment please add

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Consent form attached.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

As this is a "Standard EEG study" it is in accord with the BPS code of conduct.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

Participants will be assigned a code so that all data relating to them individually will only be accessible to the experimenter themselves.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

EEG scanning will start after January, 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

Glasgow Psychology Department, EEG lab

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

All participants will be fully debriefed after completing both the EEG and fMRI component of the study. This will include the purpose of the study itself and the possible outcomes and include the possibility of further contact with the experimenter with any further issues or for information on the outcomes of the research for interest purposes.

PARTICIPATION INFORMATION SHEET

Invitation

You are being invited to participate in a research study to be conducted by Dr Kerry Kilborn and [redacted]. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please read the following information and discuss it with others if you wish. If there is anything that is not clear or if you would like more information you can contact [redacted] (on [redacted]) or Kerry Kilborn (on 0141 330 4686) and we will be happy to answer your questions. Please take time to decide whether or not you wish to take part.

What is the purpose of this study?

This study aims to assess changes in memory that occur as part of normal, healthy ageing. To do this, we will ask you to carry out a simple memory test. The test is similar to paper and pencil memory tests, but it is carried out on a computer. Also, it uses EEG to help assess how the brain works when people memorize things. An EEG measures the electrical activity of the brain. It works by putting sensors over the scalp to detect this electrical activity. In this study, we want to understand better how memory functions in adults aged 50-90. This is part of a long-term project to study normal memory during the adult lifespan.

Why have I been chosen?

You are aged 50-65, and are generally healthy, and have not been treated for memory problems.

Do I have to take part?

You are free to decide whether or not to take part in this study. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. You would then still be free to stop at any time and without giving a reason.

What is the procedure being tested?

We are studying ways to measure how memory changes as people get older. To do this, we use a simple visual memory test. It consists of a series of pictures on a computer screen which you will be asked to look at and the test technician will ask you to select a left or right button on a machine in answer to a few simple questions related to the pictures.

During the test we will be measuring your brain's activity through a machine called an EEG machine. This machine looks and feels like a hairnet that is connected to a computer. The hairnet is soft, light and comfortable. The test session in total lasts approximately one hour, including setup and finish time. The test was used in several previous studies carried out in the UK with no complaints reported.

What will happen to me if I take part?
If you agree to take part in the study, you will be asked to attend the Psychology Department on one occasion. We will check your vision, and ask some questions about your memory and your general health, and then you will carry out the EEG memory experiment. The visit should last no longer than one hour.

Am I likely to have any side effects from this procedure?
No. Your hair will be a little damp from the hairnet device, but it is simply warm water (and a little baby shampoo). Your scalp may feel slightly itchy during or right after the test, but this will stop as soon as your hair dries. Your clothing will be protected and you will be provided with towels as required. We'll provide you with a comb or brush and hairdryer to dry your hair afterwards. If you have a favourite brush or comb, you may wish to bring it along.

Is there anything I should do to prepare?
Yes. Please do not apply hair preparations such as gels or sprays before you visit for the test. Dry, washed hair is best.

What are the possible benefits of taking part?
There is no direct benefit to the participants in taking part.

What will happen if my results show anything unusual?
Although EEG is sometimes used for certain medical tests, our study is not a medical test, so there is no way for it to show anything unusual.

What will happen to the results of the study?
The results will be written up as a report. Your name will not be present on any documentation for the study and will not be included in any database or report. The results of the study may be used to help design further studies of this procedure.

Who is funding the research study and will I get paid?
This study is funded by the Glasgow University Psychology Department.

CONTACT DETAILS
If at any time during the study you would like to ask a question about it or are concerned about something to do with the study, please contact [redacted] on [redacted], or Kerry Kilborn on 0141 330 4686.

PARTICIPANT CONSENT FORM

Name of Participant: _____
Name of Investigator: Dr Kerry Kilborn, [redacted]

		Please initial each box
1	I confirm that I have read and understand the information sheet (Version 1.0, dated January 2012) for the above study and have had the opportunity to ask questions.	
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving my reason.	
3	I agree to take part in the above study.	

Please sign and personally date this form to indicate that you agree to the above.

Name of Participant

_____

Signature of Participant:

_____

Date: _____

Name (block capitals):

_____

Please Print

SIGNING THIS FORM DOES NOT COMMIT YOU TO THE STUDY.
You will be given a copy of the Participant Information Sheet and your signed consent form to take home with you. If at any time during the study you would like to ask a question about it, please contact [redacted] on [redacted] or Kerry Kilborn on 0141 330 4686.

REPORT ON ETHICS PROPOSAL
REF# CSE00977 (Version 1)
TITLE: Voice Pattern Analysis Study
SUBMITTED BY: [redacted], PhD Student
FROM THE: Computing Science
REVIEWERS: Hester Parr, Simon Garrod, Vincent Macaulay

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The overall research project will use typing patterns and voice patterns to uniquely identify the user of a mobile device. The particular part of the project that is under consideration at this point is gathering mobile device user voice patterns from volunteers in order to create a corpus of such patterns for use as training data for a pattern matching algorithm.

Ł COMMENT FROM VINCENT MACAULAY: The information sheet is very vague about the purpose of the experiment. Please add a paragraph explaining the point of the experiment!

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

This research is not funded.

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The experiment will involve installing an application on the iPhone or iPod Touch devices of up to 25 participants. Each participant will provide their own iPhone or iPod Touch, will be over the age of 16, and no vulnerable adults will participate.

Prior to the application installation on the iPhone/iPod Touch, each participant will be provided with an information sheet that will explain what tasks they must complete, what data will be gathered, and what the data will be used for. After reading the information sheet, the participants will be asked to sign a consent form. The application will then be uploaded to their iPhone/iPod Touch, and the participant will then resume their normal activities. During the course of the following two to three weeks, each participant will invoke the application on their device several times a day (minimum of twice) and record verbal data of their own choice, then close the application. Recordings of any type from other applications on the same iPhone/iPod Touch (such as those from phone calls, voice messages, voice search applications, etc.) will NOT be recorded at any time. The voice data exactly as the participant has recorded it will comprise one pattern - no changes or edits will be made. Each participant will be fully informed that whatever they choose to record in the app will be heard by the experimenter and that they should not record anything of a personal or personally identifying nature. Furthermore, before starting each individual recording session, the participant will be required to acknowledge a warning that the data gathered will be used by the experimenter for voice pattern matching and that the experimenter may listen to the recordings, thus they should only record things that they do not consider private. At the end of a maximum three week testing period, the data from each user will be extracted from their iPhone/iPod Touch and the application will be removed from their iPhone/iPod Touch. This will mark the end of the

experiment.

The participants will be fully informed about what their data will be used for and will be able to cease participation at any time. If a participant chooses to cease participation, the application and all data will be removed from their iPhone/iPod Touch and the data will not be used for any reason. Finally, participants will be provided with copies of any publications that use their data, at their request.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

The participants will be required to take a few minutes each day (at their leisure) to record their voice on their iPhone or iPod Touch using the interface provided by the application. The only restrictions on the information they enter is that it must be in English, and must not be of a personal or personally identifying nature.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

The ethical issues are those of privacy. Since the voice recordings will be at the discretion of the participant, it is in their control as to what information they put into each recording - they have complete control of the information they choose to give. It may be a concern that the application will record voice information from other applications, but this is the purpose of having a separate application to gather this data. The application will only gather information that the participant specifically chooses to record - all other sources will be left private. Each participant will be required to acknowledge receipt of a warning regarding the use of their recordings and a reminder to avoid recording private information before beginning a session. This warning will take the form of an alert box that will appear when they start the voice pattern gathering application. They will be required to acknowledge the warning by tapping a button on the alert box before they are allowed to continue to the recording software.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

The participants will all be adults over the age of 16 who have no mental disabilities or handicaps. The participants will all legally be able to provide their own consent to participate in this experiment.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

No payment will be made to subjects for participating in this experiment.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Participants will be recruited from within my family, research group, and friends. No advertising will take place since a small group of up to 25 participants is all that is required for this experiment. Consent will be obtained by having each participant sign a consent form after being provided with information about the experiment and prior to the application being loaded on their iPhone or iPod Touch.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

The proposal is in accord with both documents.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

1. The participant has the ability to choose what and how much information will be recorded and will be instructed to avoid recording personal or personally identifying information.
2. No information about the participant's identity will be recorded as the voice patterns are recorded
3. Voice patterns from outside the application specifically designed for this experiment will not be gathered under any circumstances.
3. The participant will not be identified by name in any publication or database of information.
4. Before beginning each recording session, the participant will be required to acknowledge a reminder that their recordings may be listened to by the experimenter and that they should not record private information.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

February 15, 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

Information, consent, application upload, data download, and application removal will take place at the School of Computing Science, University of Glasgow. In the case of remote participants who do not have direct access to the School of Computing Science, University of Glasgow, the information and consent forms will be emailed to the participant and scanned and emailed back to the experimenter once signed. The application will then be emailed to the participant who will load it onto their device. At the end of the experiment, the data will be emailed back to the experimenter via a facility for such included in the application. Should the participant be concerned about the safety of emailing this information, instructions on how to download the data, encrypt it, and email it from a secure email address will be provided. Upon successful receipt of the data the participant will be given instructions on how to remove the application from their device.

The data entry by participants will be performed at a place and time of their choice.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

The participants will be given a sheet with contact information for the experimenter (email address) if they wish to receive feedback on the outcome of the experiment. They will also be offered copies of any publications that result from the data gathered as part of this experiment. The debriefing process will ensure that the participant knows that the application has been removed from their iPhone/iPod Touch and that no residual software is left behind. Furthermore, the participants will be told that voice patterns are no longer being recorded from their device and that all data they provided as part of the experiment has been removed from their iPhone/iPod Touch.

The aim of this experiment is to gather audio voice patterns on mobile devices. The experiment will take several minutes each day over the course of the next two to three weeks. At the start of the experiment, an application will be uploaded onto your iPhone or iPod Touch. Next, you will be given instructions on how to use the application and how much and what type of information you will be required to record each day. At the end of the two to three week period, you will provide your iPhone or iPod Touch to the experimenter who will remove the voice pattern data gathered and the application from you iPhone or iPod Touch, and the device will be returned to you immediately. The removal process will take no more than a few minutes – you will not be required to leave your iPhone or iPod Touch with the experimenter. If you are unable to provide your device for removal, instructions on how to install and remove the app and send the data to the experimenter will be provided.

You will use the app provided to record samples of your voice. Since your actual voice and what you say will be recorded and provided to the experimenter, you should not record anything that is private or about you specifically (i.e., your name, credit card number, passwords, etc.). You will be required to acknowledge a warning prior to starting each recording session. The warning will remind you that the recordings you're about to make will be used as part of a pattern matching experiment and that they may be listened to by the experimenter. No information or voice recordings will be made from any other application (such as phone calls, voice searches, voicemail, or voice memos) other than the application provided by the experimenter will be recorded. At the end of the experiment, the application and data will be removed from your iPhone or iPod Touch. You will not receive any compensation for participating in this experiment.

In order for the experiments conducted here to closely mimic real-life situations involving speaking on a mobile device, please follow the guidelines below:

1. Record anything you wish to say. You will have the ability to play back any recording, so a suggestion is that you use the app as a voice memo reminder system. Recordings should be in English, not other languages. Please don't curse!
2. Record your voice in a quiet area if possible, and do not allow others to speak while you're recording. It should be your voice in the recording, not that of others, or of ambient background noise.
3. Do not record personal information such as bank account, credit card, or national insurance numbers, etc. Do not record information you wouldn't want others to hear, such as a discussion about a colleague.

All results will be held in strict confidence, ensuring the privacy of all participants. No personally identifying participant information will be stored with the data. Electronic data will be stored in a password protected computer account; paper data will be kept in a locked drawer within a locked office. Please note that you may withdraw from the experiment at anytime without prejudice, and any data already recorded will be discarded and the application will be removed from your iPhone or iPod Touch. Your participation in this experiment will have no effect on your marks for any subject at this, or any other university. If you have any further questions regarding this experiment, please contact:

[redacted]

This study adheres to the BPS ethical guidelines, and has been approved by the College of Science and Engineering Ethics Committee of The University of Glasgow (¡number¿). While you are free to discuss your participation in this study with the researcher (contactable via email at [redacted] *), if you would like to speak to someone not involved in the study, you may contact the chair of the College of Science and Engineering Ethics Committee (http://www.gla.ac.uk/colleges/scienceengineering/information/staff/committees/ethicscomm*

Voice Pattern Gathering Experiment (Ethics Approval: number) **Consent Form**

The aim of this experiment is to gather audio voice patterns on mobile devices. The experiment will take several minutes each day over the course of the next two to three weeks.

At the start of the experiment, an application will be uploaded onto your iPhone or iPod Touch. Next, you will be given instructions on how to use the application and how much and what type of information you will be required to record each day. At the end of the two to three week period, you will provide your iPhone or iPod Touch to the experimenter who will remove the voice pattern data gathered and the application from you iPhone or iPod Touch, and the device will be returned to you immediately. The removal process will take no more than a few minutes – you will not be required to leave your iPhone or iPod Touch with the experimenter. If you are unable to provide your device for removal, instructions on how to install and remove the app and send the data to the experimenter will be provided.

You will use the app provided to record samples of your voice. Since your actual voice and what you say will be recorded and provided to the experimenter, you should not record anything that is private or about you specifically (i.e., your name, credit card number, passwords, etc.). You will be required to acknowledge a warning prior to starting each recording session. The warning will remind you that the recordings you're about to do will be used as part of a pattern matching experiment and that they may be listened to by the experimenter. No information or voice recordings will be made from any other application (such as phone calls, voice searches, voicemail, or voice memos) other than the application provided by the experimenter will be recorded. At the end of the experiment, the application and data will be removed from your iPhone or iPod Touch. You will not receive any compensation for participating in this experiment.

All results will be held in strict confidence, ensuring the privacy of all participants. No personal participant information will be stored with the data. Electronic data will be stored in a password protected computer account; paper data will be kept in a locked drawer within a locked office. Please note that you may withdraw from the experiment at any time without prejudice, and any data already recorded will be discarded and the application will be removed from your iPhone or iPod Touch. Your participation in this experiment will have no effect on your marks for any subject at this, or any other university.

If you have any further questions regarding this experiment, please contact:

[redacted]

This study adheres to the BPS ethical guidelines, and has been approved by the College of Science and Engineering Ethics Committee of The University of Glasgow (number). While you are free to discuss your participation in this study with the researcher (contactable via email at [redacted]*), if you would like to speak to someone not involved in the study, you may contact the chair of the College of Science and Engineering Ethics Committee (http://www.gla.ac.uk/colleges/scienceengineering/information/staff/committees/ethicscommitte*

I have read this information sheet, and agree to voluntarily take part in this experiment:

Name: _____ Signature: _____

Email: _____ Date: _____

REPORT ON ETHICS PROPOSAL
REF# CSE00971 (Version 1)
TITLE: Age - related changes in visual episodic memory: An ERP Study
SUBMITTED BY: [redacted], Postgraduate
FROM THE: Psychology
REVIEWERS: Joemon Jose, Marie-Helene Grosbras, Stephen Brewster

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The proposed research aims to use a visual memory paradigm in conjunction with Electroencephalography (EEG) to investigate changes in episodic memory across the 65 - 90 year old age range. The basic purpose is to identify a set of candidate biomarkers of ageing. This study is a follow-up from earlier studies that used a crossmodal memory paradigm. The proposed research uses a simple visual-only paradigm and will form part of a collaborative study of age â•fi related differences

Ł COMMENT FROM MARIE-HELENE GROSBRAS: But please update the consent form to include the following statements, whcih have been agreed upon by the ethis committee:

I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, without my medical care or legal rights being affected,WHILE BEING ENTITLED MY PER HOUR PAYMENT

I understand that the study is not a diagnostic test and would have no potential for detecting an abnormality in my brain, should an abnormality exist.

I understand that the research data may be accessed by researchers working at or in collaboration with the Univesrity of Glasgow in similar ethically approved studies, but that at all times my personal data will be kept confidential in accordance with data protection guidelines.

Ł COMMENT FROM JOEMON JOSE: support the above comments

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

This research project will be self â•fi funded

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

Subjects will undertake a test of visual acuity and contrast sensitivity prior to the experiment and also undertake the Mini - Mental State Examination test MMSE. Information regarding education level, native language, and occupation status will also be collected. Following this, participants will be measured for net fitting which should take no longer than 10 minutes to apply. The experiment will require 30 elderly participants aged from 65 â•fi 90. Participants are likely to be individuals who live around the Glasgow are (see also 4 & 6).

A 20 minute visual memory task will be employed consisting of pictures of simple coloured line drawings in which subjects will identify between old (previously presented) and new (never before presented) items. This will consist of 110 items with 270 trials. There will be two equal blocks of 135 trials with 55 new items within each block. 50 of the items will be presented after a short delay and 50 will be presented after a long delay. Items will be displayed on a computer screen for 3 seconds with a 4 second interval between each. Repeated items will present after 5 intervening items in the short delay and after 6 in the long delay. The experiment will be conducted in one of the experimental booths in the Department of Psychology on Hillhead Street. While participants are carrying out the experiment, their brain activity will be recorded using standard EEG equipment.

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. Participants will be informed that they may cease participation at any time if they no longer wish to participate in the experiment.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

I do not see any ethical issues involved in this 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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Adult volunteers aged 65-90 who are generally healthy and have not been treated for memory problems or neurodegenerative disease will be recruited. We require normal or corrected-to-normal vision, as assessed by the Bailey-Lovie LogMar distance visual acuity chart and the Pelli - Robson contrast sensitivity chart at 1 metre.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

Participants will be paid ´£6 for participation.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Participants will be recruited by adverts detailing the purpose and duration of the experiment. The adverts will be distributed through existing local contacts (i.e. Elderly Forums) and through the Psychology subject pool resource.

Written informed consent will be obtained from participants prior to the study.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

As this is a "Standard EEG study" it is in accord with the BPS code of conduct.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

Participantâ•Žs data will be labeled with a number and subsequent analyses of the data will use the subject number rather than the participantâ•Žs name. None of the data will be identifiable as belonging to any specific participant.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

1st February 2012 (or as soon as ethical approval is obtained)

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

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

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

After the experiment participants will be briefed about the purpose of the research. They will be given contact details of the investigators on the Study Consent Form (attached) for further questions and concerns. If they are interested, they will be given a more detailed description of the experiment and its aims. All participants will be asked if they would like to receive a summary of the findings. To this end, we will offer to email or mail a summary on request.

Ł COMMENT FROM MARIE-HELENE GROSBRAS: Are participants given feed-back about their memory performance? That might be a concern to some of them, so it might be worth informing them of what kind of inforamtion they will get (or not) on their cognitive aging.

PARTICIPATION INFORMATION SHEET

Invitation

You are being invited to participate in a research study to be conducted by Dr Kerry Kilborn and [redacted] Before you decide, it is important for you to understand why the research is being done and what it will involve. Please read the following information and discuss it with others if you wish. If there is anything that is not clear or if you would like further information you can contact [redacted] (on [redacted]) or Dr Kerry Kilborn (on 0141 330 4686) and we will be happy to answer your questions. Please take time to decide whether or not you wish to take part in this study.

What is the purpose of this study?

This study aims to assess changes in memory that occur as part of normal, healthy aging. In order to do this, we will ask you to carry out a simple memory test. The test is similar to paper and pencil memory tests, but it will instead be carried out on a computer. EEG will also to be used to help assess how the brain works when people memorize certain items. An EEG measures the electrical activity of the brain. It works by putting sensors over the scalp to detect this electrical activity. In this study, we want to understand better how memory functions in adults aged 65-90. This is part of a long-term project to study normal memory during the adult lifespan.

Why have I been chosen?

You are aged 65-90, and are generally healthy, and have not been treated for memory problems.

Do I have to take part?

You are free to decide whether or not to take part in this study. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. You would then still be free to stop at any time and without giving a reason.

What is the procedure being tested?

We are studying ways to measure how memory changes as people get older. To do this, we use a simple visual memory test. It consists of a series of pictures on a computer screen which you will be asked to look at and the test technician will ask you to select a left or right button on a machine in answer to a few simple questions related to the pictures.

During the test we will be measuring your brain's activity through a machine called an EEG machine. This machine looks and feels like a hairnet that is connected to a computer. The hairnet is soft, light and comfortable. The test session in total lasts approximately one hour, including setup and finish time. The test was used in several previous studies carried out in the UK with no complaints reported.

What will happen to me if I take part?
If you agree to take part in the study, you will be asked to attend the Psychology Department on one occasion. We will check your vision, and ask some questions about your memory and your general health, and then you will carry out the EEG memory experiment. The visit should last no longer than one hour.

Am I likely to have any side effects from this procedure?
No. Your hair will be a little damp from the hairnet device, but it is simply warm water (and a little baby shampoo). Your scalp may feel slightly itchy during or right after the test, but this will stop as soon as your hair dries. Your clothing will be protected and you will be provided with towels as required. We'll provide you with a comb or brush and hairdryer to dry your hair afterwards. If you have a favourite brush or comb, you may wish to bring it along.

Is there anything I should do to prepare?
Yes. Please do not apply hair preparations such as gels or sprays before you visit for the test. Dry, washed hair is best.

What are the possible benefits of taking part?
There is no direct benefit to the participants in taking part.

What will happen if my results show anything unusual?
Although EEG is sometimes used for certain medical tests, our study is not a medical test, so there is no way for it to show anything unusual.

What will happen to the results of the study?
The results will be written up as a report. Your name will not be present on any documentation for the study and will not be included in any database or report. The results of the study may be used to help design further studies of this procedure.

Who is funding the research study and will I get paid?
This study is self – funded and you will be paid £6 for your participation.

CONTACT DETAILS

If at any time during the study you would like to ask a question or have any concerns regarding the study, please contact [redacted] on [redacted], or Dr Kerry Kilborn on 0141 330 4686.

Age – related differences in Memory

PARTICIPANT CONSENT FORM

Name of Participant: _____
Name of Investigator: [redacted]

		Please initial each box
1	I confirm that I have read and understand the information sheet (Version 1.0, dated 18th January, 2012) for the above study and have had the opportunity to ask questions.	
2	I understand that my participation is voluntary and that I am free to withdraw at any time, without giving my reason.	
3	I agree to take part in the above study.	

Please sign and personally date this form to indicate that you agree to the above.

Name of Participant

_____

Signature of Participant:

_____

Date: _____

Name (block capitals):

_____

Please Print

SIGNING THIS FORM DOES NOT COMMIT YOU TO THE STUDY.

You will be given a copy of the Participant Information Sheet and your signed consent form to take home with you. If at any time during the study you would like to ask a question, please contact [redacted] on [redacted] or Dr Kerry Kilborn on 0141 330 4686.

REPORT ON ETHICS PROPOSAL
REF# CSE00972 (Version 1)
TITLE: Interference with self awareness by modulation of gamma synchrony : a tACS Study
SUBMITTED BY: Gregor Thut, Prof
FROM THE: Psychology
REVIEWERS: Aleksandra Vuckovic, Klaus Kessler, Stephen Brewster, Vincent Macaulay

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The purpose of this research is to test if interfering with gamma synchronization (especially around 40 Hz) between the anterior cingulate/medial-prefrontal and posterior cingulate/medial parietal region will briefly affect the participant's ability to reflect on him/herself.

The research is based on our previous MEG study [ref1.1] in which we have shown increased gamma synchronization between the two regions during self reflection. Here, we want to specifically test whether gamma synchrony between these two areas causally leads to improved performance in self reflection, using a task similar to the one used in ref1.1.

In order to do so, we plan to stimulate these two areas through rhythmic transcranial stimulation at gamma frequency, and then to assess the behavioural consequences of this stimulation, while healthy participants engage in the self reflection task (quantifiable by behavioural measures). Comparisons with performance in control tasks and stimulation at control frequencies will allow the study of the neuronal underpinning of self awareness.

At the Centre of Cognitive Neuroimaging, we regularly employ the technique of rhythmic transcranial magnetic stimulation (TMS) to briefly and weakly modulate the synchronization of ongoing rhythmic brain activity of a restricted part of the brain, while we study how this affects behaviour (e.g. [ref1.2-4]). TMS is a standard protocol category as accepted by the ethical committee (FIMS-0419, accepted 09.04.2008). We here want to use the technique of transcranial alternating current stimulation (tACS), instead of rhythmic TMS.

Transcranial alternating current stimulation (tACS) is a non-invasive, safe technique for stimulation of the human brain. tACS stimulates in alternating (oscillating) patterns over two areas, and has been shown to affect behaviour in healthy volunteers depending on the stimulation frequency [cf ref1.5-6], most probably by interfering with underlying brain oscillations in the frequency-band of stimulation [cf ref1.7], (e.g. with gamma-oscillations by gamma-stimulation). tACS is a common investigational device used in Cognitive Neuroscience, and Psychology in healthy participants (analogous to TMS), but with no reported side effects (for details see points 4-5 below).

Referecences

[1.1] Lou HC, Gross J, Biermann-Ruben K, Kjaer TW, Schnitzler A (2010). Coherence in consciousness: paralimbic gamma synchrony of self-reference links conscious experiences. Hum Brain Mapp 31: 185-92.

[1.2] Thut G, Veniero D, Romei V, Miniussi C, Schyns P, Gross J (2011). Rhythmic TMS causes local entrainment of natural oscillatory signatures. Curr Biol 21: 1176-85.
[1.3] Romei V, Driver J, Schyns PG, Thut G (2011). Rhythmic TMS over parietal cortex links distinct brain frequencies to global versus local visual processing. Curr Biol 21: 334-7.
[1.4] Romei V, Gross J, Thut G (2010). On the role of prestimulus alpha rhythms over occipito-parietal areas in visual input regulation: correlation or causation? J Neurosci. 2010: 8692-7.
[1.5] Feurra M, Paulus W, Walsh V, Kanai R (2011). Frequency specific modulation of human somatosensory cortex. Front Psychol 2:13.
[1.6] Kanai R, Chaieb L, Antal A, Walsh V, Paulus W (2008). Frequency-dependent electrical stimulation of the visual cortex. Curr Biol 18: 1839-43.
[1.7] Zaehle T, Rach S, Herrmann CS (2010). Transcranial Alternating Current Stimulation Enhances Individual Alpha Activity in Human EEG. PLoS ONE 5: e13766.

Ł COMMENT FROM STEPHEN BREWSTER: I havent read the papers on tACS. I hope it is safe. It would be good to ensure we have an informed opinion from a brain imaging expert.

Ł COMMENT FROM KLAUS KESSLER: Yes it is widely used and safe to the best of the communities' knowledge.

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

This study is funded by the CCNi indirect contributions to G. Thut.
[redacted] is funded by the MINDLab UNIK initiative at Aarhus University, which is funded by the Danish Ministry of Science, Technology and Innovation.

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The behavioural paradigm involves presenting adjectives one by one on a monitor (in analogy to ref3.1). The participant rates each adjective as to its match with him/herself (rating block). After this, the participant is required to recall his/her previous judgement of the series (retrieval block), but now shown in a different order. It is during the retrieval blocks where fronto-parietal gamma-synchrony is associated with self reflection (ref 3.1). We will stimulate with tACS at gamma-frequency during the retrieval process while measuring reaction time and accuracy (main condition). In one group of participants (n=15), this main condition will be compared against performance in two control tasks at the same tACS frequency (tasks involving retrieval of judging a public figure, and counting syllables in similarly presented adjectives) (Task-control Group 1). In another group (n=15), the main condition will be compared against performance of the same self-referential task, but at two different control stimulation frequencies (stimulation at theta frequency and sham) (Frequency control Group 2).

Procedure:
3.1. General information:
Participants are first given general information about tACS. They are fully informed of the contraindications through the information form and are encouraged to ask questions if unsure about any part of the procedure. They are also informed that they may withdraw from the study at any time without prejudice.

3.2. Screening for inclusion/exclusion criterion
Before each study, participants are screened to ensure that they do not present with any contraindication for tACS. They are required to complete and sign a safety questionnaire in the presence of the experimenter (see document attached).

3.3. Experiment-specific instructions, obtaining informed consent and familiarization of the participant with the experimental setting.
We first explain the procedure and the task to the participant, who will also read the
Information form, and the consent form. Participants will be encouraged to ask any questions they might have before signing the consent form and any time thereafter. Once informed consent is obtained, we will familiarize the participant with the technique, experimental setting and task. This will also involve short tACS stimulation (of 30 sec) at the intensity and frequency used in the experiment (1mA). It is possible that stimulation at this intensity may lead to skin sensations (see ref3.2) in which case we will decrease intensity until no such sensations are reported anymore.
Typically, 3.1-3.3 is done one day before the experiment

3.4. Experiment:
3.4.1 Participants:
30 participants (15 per group) will be enrolled, who are all likely to be undergraduate or graduate students at the University of Glasgow.

3.4.2 tACS. tACS consists in the application of two stimulation electrodes to the scalp. One electrode will be placed over Fz and Pz (locations from international 10-20 system). During the stimulation phase a sinusoidal current with a maximum intensity of 1mA is passed between the two electrodes for 12 minutes per Subject (in 3 blocks of 4 minutes). This is in line with current best practice and safety guidelines for applications in healthy participants in Cognitive Neuroscience and Psychology (see 4.2 below). tACS frequencies used are: 40Hz (gamma), 5Hz (theta) and â•œshamâ•š (no stimulation),

3.4.3 Behavioural paradigm structure:
The experiment consists of 2 main blocks (rating followed by retrieval). 120 adjectives will be presented during the rating block, followed by a 4-min break, and repetition of the 120 adjectives during the retrieval block. This will take about 30 min (12-min rating, 4-min break, 12-min retrieval). During rating, the participant is asked to rate each adjective on a scale of 1-4 as to a fit with him/herself. During retrieval, the same list is presented in randomized order, now with the task of recalling ones previous judgement by selecting if the word was either fitting or not. tACS will be conducted during 4 minutes in the middle of the retrieval block, ie retrieval block structure is 4-min off-tACS, 4-min on-tACS, 4-min off-tACS. This procedure will allow to capture potential offline effects of tACS [3.3]. No tACS will be applied during initial rating.

Depending on group (1 or 2), these main experimental blocks will be repeated twice, for recording performance in control tasks (1. reflection on famous person, 2. counting syllables in adjectives) or control stimulation conditions (1. tACS at theta frequency=5Hz or 2. with sham=no stimulation but electrodes mounted). A unique set of adjectives will be given in each of these repetitions.

3.4.4 EEG recordings
In addition to behaviour, we will record EEG from a few (n=5) electrodes during off-tACS blocks, avoiding interference with tACS but allowing to monitor changes in brain activity [ref 3.2].

3.4.5. Duration of experiment: Each of the 3 blocks lasts about 30 minutes. This will be spread over two recording sessions taking place on a different day (none of these sessions therefore exceeding 1hr of duration).

3.4.6. Equipment
We are equipped with a commercially available tDCS/tACS device from the Magstim company (UK).

3.4.7. References
[3.1] Lou, H. C., J. Gross, K. Biermann-Ruben, T. W. Kjaer, and A. Schnitzler. (2010). Coherence in consciousness: paralimbic gamma synchrony of self-reference links conscious experiences. Hum Brain Mapp 31, 185-92.
[3.2] Pogosyan A, Gaynor LD, Eusebio A, Brown P (2009). Boosting cortical activity at Beta-band frequencies slows movement in humans. Curr Biol. 19(19):1637-41.
[3.3] Zaehle T, Rach S, Herrmann CS (2010). Transcranial Alternating Current Stimulation Enhances Individual Alpha Activity in Human EEG. PLoS ONE 5: e13766.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

4.1. The behavioural tasks consist of a classical self awareness paradigm.

4.2. tACS does not affect the participant other than producing mild discomfort at the beginning of stimulation for a few seconds.

Low-intensity tACS (< 2mA) is a non-invasive, safe technique for stimulation of the cerebral cortex through applying small oscillating electrical currents to parts of the brain close to the scalp. tACS modulates the membrane potential at the stimulation regions in an oscillatory manner and increase the probability that endogenous brain activity with a similar frequency becomes synchronized [ref4.1].

Recommended (safe) stimulation parameters for transcranial current stimulation (tCS) in human participants are: Current densities (A/cm2) and total charge levels (current density x total stimulation duration (s) [C/ cm2]) are not to exceed 25 mA/ cm2 [ref4.2] and 216 C/ cm2 [5] respectively. Our stimulation protocol will be strictly below these levels. For a single session of 4 min tCS (used here), the expected current density will be normally 0.003 mA/ cm2 and the estimated total charge will be 4.8 C/ cm2 (or even 50% lower due to attenuation of the electrical current by scalp and skull). Even if the total charge is extrapolated for 3 consecutive sessions of 4-min of repeated tCS application as used here (14.4 C/cm2), we will act strictly within the recommended safety limits. Please note that previously tACS studies in healthy participants went up to 250Hz (with 10 minutes of stimulation at 1mA) with no reported side effects or safety concerns (ref 4.4), with parameters well above our study (our study: max-frequency of 40Hz at a max-intensity of 1mA for a total of 12min).

References
[4.1] Zaghi S, Acar M, Hultgren B, Boggio PS, Fregni F (2010) Noninvasive brain stimulation with low-intensity electrical currents: putative mechanisms of action for direct and alternating current stimulation. Neuroscientist. 16(3):285-307.
[4.2] Agnew, W.F., and McCreery, D.B. (1987). Considerations for safety in the use of extracranial stimulation for motor evoked potentials. Neurosurgery 20, 143-147.

[4.3] Yuen, T.G., Agnew, W.F., Bullara, L.A., Jacques, S., and McCreery, D.B. (1981). Histological evaluation of neural damage from electrical stimulation: considerations for the selection of parameters for clinical application. Neurosurgery 9, 292-299.
[4.4] Moliadze V, Antal A, Paulus W. Boosting brain excitability by transcranial high frequency stimulation in the ripple range. J Physiol. 2010 Dec 15;588(Pt 24):4891-904.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

The main ethical issue is that no participant will be put at risk. Although no side effects have been reported, tACS can change brain activity for a few minutes [ref5.1]. Psychopharmacological agents (including some recreational drugs), lack of sleep, and having had a seizure in the past, are factors that can potentially negatively interact with effects of tACS on brain activity to elicit a seizure. Although no seizures, nor other side-effects have ever been reported with tACS, we will take a conservative (safe) approach and carefully screen subjects of any possible contraindication that would apply to transcranial magnetic stimulation (TMS), another technique frequently used for non-invasive brain stimulation in healthy subjects in Cognitive Neuroscience and Psychology.

Each participant will therefore be informed of exclusion criteria and will have to complete and sign a screening questionnaire.
Contraindications include:
- People with metal fragments or implants in the head, since these objects could be heated by the tACS.
- People with pacemaker since tACS could interfere with the device
- People with personal or family history of epilepsy since they might be susceptible to seizures.
- People under medication or drugs, which might increase the seizure probability.
- Women who are pregnant or who think they might be pregnant. Although there is no data to support that tACS might be harmful to a foetus, as a matter of natural precaution our policy is not to include pregnant women in our studies.

The information and screening questionnaires will be given by a qualified person aware of potential risks. Also, participants will be informed that tACS used for research cannot have any diagnostic value.

There are no ethical issues involved in the behavioural paradigms as undertaken here.

Ref
[5.1] Zaehle T, Rach S, Herrmann CS. (2010). Transcranial Alternating Current Stimulation Enhances Individual Alpha Activity in Human EEG. PLoS ONE 5(11): e13766.

Ł COMMENT FROM ALEKSANDRA VUCKOVIC: Are they going to be informed that they can leave the study at any time?

Ł COMMENT FROM KLAUS KESSLER: It is part of the consent form

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Participants will all be normal adult volunteers.

Ł COMMENT FROM ALEKSANDRA VUCKOVIC: How do you define adult, >18, any upper limit?

Ł COMMENT FROM KLAUS KESSLER: The default is 16.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

It is standard policy to give a compensation of ´£6/hours to participants.

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

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, and screening questionnaires will be completed by all participants (handedness, tACS safety).

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

The experiments are in accord with the BPS code of conduct.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

Participantsâ•Ž anonymity will be assured by only referring to a subject number for data storage and analysis. Records of personal details will only be kept if subjects agree (for example to contact them for other studies).

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

We would like to start late spring 2012.

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

The experiments will be carried out in one of the laboratories in the Centre of Cognitive Neuroimaging (CCNi), School of Psychology, University of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

Participants will be given contact details of the principle-investigator and the experimenters. They will be encouraged to ask questions about the experiment as well as more general questions about the techniques involved â•fi any time before, during and after the experiment.

Study Information Form -
transcranial Alterating Current Stimulation (tACS)

***Title of Project*: Interference with self awareness by modulation of gamma synchrony: a tACS Study**

Investigators: [redacted] **(visiting researcher), Joachim Gross, Gregor Thut**

You are being invited to take part in a research study. Before you decide to participate, it is important for you to understand why the research is being conducted and what it will involve. Please take time to read the following information carefully and discuss it with others, if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether or not you wish to take part.
Thank you for reading this.

1. What is the purpose of this study?

At the Centre for Cognitive Neuroimaging, we are conducting research which aims at identifying the brain processes that accompany human mental activities, such as those involved in perception, memory and action. In some of these studies, we use transcranial alternating current stimulation (tACS) to briefly modulate the ongoing activity of a restricted part of the brain, while we study how this affects behaviour. If we observe an effect of tACS, then it means that the stimulated brain region was involved in the process taking place.

Today, you will be asked to perform a task which is about yourself (task 1, self judgement). You will be presented with adjectives on a computer monitor. You will have to rate how accurately these adjectives describe yourself. Depending on the experimental group you are in, you may also be asked to rate adjectives as to their match with others (task 2, judgment of a famous person), or simply to count the syllables in the adjectives (task 3). We would like to probe for changes to task performance while tACS is applied over specific areas of the brain. Because we are also interested how this is changing brain activity, we will record your brain activity from a few electrodes placed on your scalp.

Task performance will take about 30 minutes (including breaks), during which we will stimulate for 4 minutes with tACS. We will ask you to perform 3 such 30-minute blocks, but this will be spread over two days, such that each session in the laboratory will be less than 1 hour.

2. What is tACS?

Transcranial direct current stimulation (tACS) is a non-invasive, safe technique for brain stimulation. It works by application of small electrical currents to parts of the brain close to the scalp. Given the

absence of side effects, tACS has become a common investigational device in cognitive neuroscience, and psychology in healthy participants. tACS involves placing two electrodes on the scalp through which a weak electrical current will pass. This current passes through the skull and stimulates a small area of the brain lying underneath the electrodes. Electrodes consist of 35 cm2 squares of spongy material soaked in saline solution; they are maintained on the scalp by using an elastic band.

tACS does not use X-rays and the electrical current does not have harmful effects. You may feel a tingling sensation under the electrodes for a few seconds at the beginning of stimulation. The time scale of the effect on cognition is in the order of minutes.

3. Is there any condition that prevents me from participating in a tACS study?

tACS is not recommended for certain people. For your safety, you will be asked to fill out a tACS Safety Screening Questionnaire,

It is not safe to have tACS if you have any metal in your body. Teeth fillings are safe but you should discuss other metal dental work (i.e., braces) with the researcher beforehand. For your safety, you will be asked to remove any metallic items (i.e., jewellery, coins) before the experiment.

It is unknown whether tACS given to a pregnant woman could harm the unborn child. It is therefore current practice not to include pregnant women, as a matter of natural protection.

tACS will change your brain excitability for a few minutes. Psychopharmacological agents (including some recreational drugs), lack of sleep, and having had a seizure in the past, are factors that can potentially negatively interact with these effects of tACS to elicit a seizure. Although seizures have not been reported with tACS, we ask you only to participate in this study (to enhance safety/ minimize risks), if:
(1) you have had a full night's sleep the night before the study;
(2) you have not drunk more than 3 units of alcohol the previous night;
(3) you have not used recreational drugs within the 24 hour period prior to testing,
(4) you do not take medication,
(5) you have no personal history of epilepsy.

For all these reasons, it is important that you answer accurately to the attached questionnaire.

4. What will happen to me if I take part?

Before taking part in this study, you will be asked to fill out a safety screening questionnaire, which will ask about your medical history, any medication you are currently on, about recent alcohol and recreational drug use. It will also ask whether you might be pregnant. You will be required to fill out this questionnaire, as well as a consent form, prior to testing.

tACS during the task

During the experiment, you will be sitting comfortably in a chair. Painless, but sometimes mildly uncomfortable, weak electric current will be applied over your scalp for a total of up to 12 minutes spread over 3 blocks. During tACS, you will be asked to carry out a task which involves presentation of adjectives on the monitor and manual responses on the keyboard.

The total time spent in the lab will be about an 90 minutes (includes mounting the electrodes for recording of brain activity) and will be spread over two days (i.e. less than an hour per day).

5. What are the possible risks of tACS?

tACS is a painless procedure, with no known risks other than temporary mild local discomfort at the electrode sites. tACS can temporarily affect some cognitive or perceptual processes, and the time scale of this effect is up to a few minutes. As a precaution, you should not drive for one hour after receiving tACS.

6. What are the possible benefits of taking part?

tACS studies carried out at the CCNi are tests, not treatments. They also have no diagnostic value. Should an abnormality exist in your brain (although this is highly unlikely), this would not be seen in the data acquired in the context of the experiment.
It is hoped that the information obtained here will help our understanding of the functions of the human brain.

7. Confidentiality - Who will access the data?

The data will be stored on a secure network and only members of the Centre for Cognitive Neuroimaging (CCNI) of the University of Glasgow will have access to the data. It is possible that the data may be used by researchers working within CCNi for other similar ethically approved research protocols, where the same standards of confidentiality will apply.

8. Can I ask questions about the research project?

You may ask more questions about the study at any time, before, during and after the study. The investigator(s) will provide their telephone number so that they are available to answer your questions or concerns about the study.

9. Can I Withdraw from the study

Your participation in this research project is voluntary and you may withdraw at any time, including during the procedure, without prejudice. You will then be entitled to your per/hour payment**.**

10. Can the investigator interrupt the study

At any time during the testing, the investigators have the right to terminate the study for any reasons.

11. Will I receive financial compensation

You will receive £6 per hour/ course credit for your participation to this study as a compensation for your time and inconvenience.

This research study has been approved by the College of Science and Engineering (CSE ######)

Contact details

Name and contact of PI : _____

Name :	Prof Gregor Thut
Address:	Centre for Cognitive Neuroimaging & School of Psychology, 58 Hillhead Street, Glasgow G12 8QB.
Telephone:	0141 330 33 95
Email:	g.thut@psy.gla.ac.uk

Contact details of a researcher independent from the study, but knowledgeable of the techniques employed:

Name :	Dr Marie-Helene Grosbras
Address:	Centre for Cognitive Neuroimaging & School of Psychology, 58 Hillhead Street, Glasgow G12 8QB.
Telephone:	0141 330 5264
Email:	m.grosbras@psy.gla.ac.uk

STUDY INFORMED CONSENT - tACS

(This form must be completed prior to any scanning)

Study title:

☐ I confirm that I have read and understood the Study Information Sheet provided to me for the above study and have had the opportunity to ask questions.

☐ I confirm I am aware of the possible risks and contra-indications, including pregnancy (as outlined in the Study Information Sheet *and* tACS Safety Screening Questionnaire).

☐ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, and without my medical care or legal rights being affected, while being entitled to my per/hour payment.

☐ I understand that the research data may be accessed by researchers working at or in collaboration with the CCNi in similar ethically approved studies, but that at all times my personal data will be kept confidential in accordance with data protection guidelines.

I have initialled the above boxes myself and I agree to take part in the study.

_____

SIGNATURE OF VOLUNTEER

Name: _____ Date: _____

_____

SIGNATURE OF WITNESS

Name: _____ Date: _____

Subject ID _____

Centre for Cognitive Neuroimaging
Institute of Neuroscience and Psychology
University of Glasgow
58 Hillhead street, Glasgow G12 8QB
Tel: +44 (0)141-330 5089, email: info@psy.gla.ac.uk

REPORT ON ETHICS PROPOSAL
REF# CSE00981 (Version 1)
TITLE: DigiGraff
SUBMITTED BY: [redacted] RA
FROM THE: School of Computing Science
REVIEWERS: Christoph Scheepers, Helen C. Purchase, Paddy O'Donnell

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

The research is intended as a first step to investigate the role of location in social media creation. Due to the rise of smartphones with sophisticated onboard sensors, an increasing amount of user generated content is geographically tagged with the location of its creation. However, little work has been carried out to determine the use to which this data can be put when the user is collocated in the physical environment. Currently, message based social media services, such as twitter, append the location where the user happens to be when the social media (such as a tweet) is created. The user is not required to give thought to the relationship between the media they create or browse, and the location where it was created.

The purpose of this work is to encourage users to think more carefully and in more detail about location when creating and browsing social media. This will allow us to better understand it and create novel interactions with location-base social media.

This initial step seeks to evaluate digigraff, a digital projection graffiti system. Digigraff uses an iPhone handset and a small mobile projector, powered via the phone, to allow users to create digital annotations that can be projected onto a physical surface such as a wall or pavement. Users create annotations by drawing on the iPhone touchscreen. Using the projector, they align the annotation to a physical surface. By pressing a button, the annotation and its location in the environment is stored on a central server. Users can view annotations that they and other users have created by scanning in the environment with the iPhone. Any annotations that have been left in the immediate area are illuminated (by being projected on the same surface they were created on) as the iPhone (and thus the projector) is passed over the annotation location. In this way we provide a close coupling between the annotation and its location, encouraging the user to think more deeply about the relationship between both.

We intend to answer four research questions about the use of DigiGraff, and as such, the role of location in the creation and browsing of social media.

RQ1. What types of annotation do users create with Digigraff and what is their intended role?

RQ2. What uses to users make of annotations they find that have been created by others?

RQ3. What use do users make of DigiGraff in their day-to-day lives.

RQ4: What are the practical issues when interacting with the DigiGraff system.

These research questions will be investigated through a qualitative study. The results of which will lead to new research questions that are likely to form further ethical requests. Our studies here are intended to

be exploratory.

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

This work is funded under the EU FP7 Haptimap project

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The proposed study is a qualitative user study designed to collect more subjective views of the utility of DigiGraff in-situ. 24 participants (in groups of 4 at a time) will participate in the study for a period of approximately one week. We hope to recruit groups that know each other and thus will have a motivation to create and browse for annotations.

The study consists of three phases and will be administered remotely (as our aim is to collect real world use). Experimenter contact is limited to phases 1 and 3. The phases are outlined below:

Phase 1
Upon recruitment, participants will read and sign a consent form and fill out a demographic questionaire (attached). Participants will then be briefed on the DigiGraff application they will use and its features. They will be provided with a short tutorial of DigiGraff and how to operate it. Participants will then be supplied with an iPhone running the DigiGraff system coupled to a small digital projector. The application will allow a user to create annotations and attach them to physical objects as well as browse the environment for annotations left by themselves or other people.

Phase 2
Participants will be asked to use the DigiGraff system to browse for and create digital annotations in their environment over the following week. We will not set a time limit or number on the annotations they must create, but we will "check in" either via email or a phone call at least every two days to ensure there are no problems with the equipment.
We will record the annotations created, their locations, as well as a physical trace of user movement (derived from the iPhone GPS unit) when browsing for and creating annotations.

Phase 3
At the end of the week participants will return and be interviewed on their use of DigiGraff and the utility they felt it had. The equipment will also be returned at this point.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

1. reading and signing the consent form
2. reading and completing the demographic questionnaire
3. Interacting with the application to create annotations
4. Interacting with the device to browse annotations in the environment.
6. discussing their experiences at the end of the experiment.

These activities are minimal risk

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

1. Participants should understand that they themselves are not being tested.

2. Participants should be made aware that their personal safety is of highest importance and care should be taken when using the application. The participants should ensure they are in a safe location before attempting to create or browse annotations.

3. As many of the participants may be students, they should be informed that their performance is not linked to their university marks.

4. Participants should be informed that all data is collected in confidence, and is stored in anonymized form. In particular they should be aware of the location data that is being collected whenever the application is running.

5. Participants should be informed that if they become uncomfortable at any point, they should stop immediately, terminate the application to stop data collection and immediately contact the research team.

6. Participants should be informed that they may withdraw from the experiment at any time without prejudice, and that any data already recorded will be overlooked.

7. Participants should be made aware that they should take care when using the projector (during browsing and creating annotations) that they do not distract others in the environment. The projectors we use have much lower power than standard digital projectors (such as those used for powerpoint presentations), so this is unlikely. However, it is something participants should consider.

Ł COMMENT FROM HELEN C. PURCHASE: Participants need to be reassured that if they lose/damage the equipment, they will not be held liable. I am concerned about the line: "You should also be careful not to shine the light from the projector at people." What are the possible consequences of the participants doing this? Could it damage other people's eyes? I think that if participants are being advised NOT to do something, they should be told the full consequences of what would happen if they DID do it.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Participants will be staff, undergraduate and postgraduate students of the University of Glasgow

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

NO

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

Participants will be recruited by posters on appropriate notice boards around campus and individual contact with participants from previous studies who consented to be contacted about participation in future studies. Consent will be obtained via the attached consent form. We will NOT be using any university mailing lists to recruit participants.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

YES

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

A participant consent form, providing an overview of the experiment and the data that will be collected, its means of storage and the purposes of its use will be used. In addition,this sheet will also provide contact details of the experimenter, as well as giving the participant an option to receive the summarised results of the data after it has been analysed.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

February 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

Phases 1 & 3 will take place at the school of computing science. Phase 2 will take place in areas around the west end of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

The participant will be verbally debriefed at the end of the experiment and offered an information form that contains a copy of the consent form contents and experimenter contact details. In addition the consent form will contain a check box that should be ticked if the participants would like a summary of the general experimental outcomes.

Participant Information Sheet: DigiGraff

The aim of this study is to better understand the relationship between social media creation (such as posting on facebook or using twitter) and the geographic location that is often added to the messages that are created. This is increasingly common when using social media services on mobile devices where location is often added when posting a message. We want to understand user understanding of this relationship and how it can be used to create more useful interaction with location tagged data. In this study we will ask you to create and browse messages on a novel social media system, called DigiGraff, that tries to more closely link messages and their location. We ask that you use DigiGraff for the next week. At the end of the week we will discuss your use and experiences of it. DigiGraff uses an iPhone to allow you to sketch annotations that can then be pinned to locations in the environment. DigiGraff also allows you to browse the environment to see annotation your or others have left. You do this by interacting with a small handheld projector that is attached to the iPhone. You will be given training and instructions on the use of the iPhone and projector.

During your participation, the following information will be collected :

- Your responses to a standard demographic questionnaire
- Your responses on a standard workload questionnaire
- A log of your physical movement through the environment when using DigiGraff
- The annotations you create and browse
- Your responses in a discussion after the study

All transcriptions will be anonimised, ensuring the privacy of all participants. All recordings will be held securely in a locked office and later deleted after transcription.

Your participation in this experiment will have no effect on your marks for any subject at this, or any other university.

You may withdraw from the experiment at anytime without prejudice, and any data already recorded will be overlooked.

Your physical safety should be considered of highest importance. In particular, you should ensure that you are in a safe location to during application use and when browsing or creating annotations. You should also be careful not to shine the light from the projector at people.

If you have any further questions regarding this experiment, or any problems during your participation, please contact:

[redacted]
School of Computing Science
18 Lilybank Gardens, Glasgow
email: [redacted]
tel: +44 0141 [redacted]

Participant Consent Form: DigiGraff

The aim of this study is to better understand the relationship between social media creation (such as posting on facebook or using twitter) and the geographic location that is often added to the messages that are created. This is increasingly common when using social media services on mobile devices where location is often added when posting a message. We want to understand user understanding of this relationship and how it can be used to create more useful interaction with location tagged data. In this study we will ask you to create and browse messages on a novel social media system, called DigiGraff, that tries to more closely link messages and their location. We ask that you use DigiGraff for the next week. At the end of the week we will discuss your use and experiences of it. DigiGraff uses an iPhone to allow you to sketch annotations that can then be pinned to locations in the environment. DigiGraff also allows you to browse the environment to see annotation your or others have left. You do this by interacting with a small handheld projector that is attached to the iPhone. You will be given training and instructions on the use of the iPhone and projector.

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If you have any further questions regarding this experiment, or any problems during your participation, please contact:

[redacted]
School of Computing Science
18 Lilybank Gardens, Glasgow
email: [redacted]
tel: +44 0141 [redacted]

I have read this information sheet, and agree to take part in this experiment:

☐ Tick this box if you would like to receive a summary of the results of all participants after completion of the experiment

Name: _____ Email Address :_____

Signature: _____ Date: _____

REPORT ON ETHICS PROPOSAL
REF# CSE00979 (Version 1)
TITLE: SELF MOTION INTEGRATION IN THE HUMAN BRAIN
SUBMITTED BY: Lars Muckli, Reader
FROM THE: Psychology
REVIEWERS: Aleksandra Vuckovic, Monika Harvey

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

This is a â standard fMRI studyâ .
The experiment will investigate the methods of integration in human self-motion cognition. Specifically this research will look at how visual and auditory cues regarding self motion are integrated. Psychophysics experiments show that bayesian integration occurs which means participants took the reliability of the cues into account. In this study we look at the connectivity of regions expected to be involved, with the hypothesis that their connectivity will reflect the integration strategies discovered in previous psychophysics work. For example, the visual-motion sensory region (Medial Superior Temporal area, MST) is expected to have greater connectivity with the integration region (Ventral Intraparietal Sulcus, VIP) when the visual stimulus is more coherent.
A second research question looks at whether cross-modal adaptation occurs in the integration region (VIP). This will provide evidence to confirm or contradict electrophysiological findings in animals, in which individual neurons were found to respond to motion stimuli from both visual and auditory modalities. A third analysis will look at cross-modal decoding of the same region. The results would reinforce the adaptation findings. Finally, the participant's responses show how the stimuli are perceived. The final question looks at whether the perceived or actual direction of motion more accurately predicts the activity in both the sensory and integration regions.
The participants will be a small number of healthy adults. They first will be trained on the discrimination task. Once the training is successful, they will perform the same task, but this time from within a Magnetic Resonance Imaging (MRI) scanner. Activity in the regions we expected to be involved in the sensing and integration of the stimuli will be recorded, along with the stimuli used, and the participants response accuracy and direction. Statistical methods to answer the above questions will be used to analyse the data.

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

Neuroinformatics Doctoral Training Centre at the University of Edinburgh.

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

The investigation will be conducted according to the â standard fMRI experimentâ guidelines.

-Participants

Ten healthy adult participants will be included in the study. Participants will be recruited by the Centre for Cognitive Neuroimaging (CCNI) in the Department of Psychology at the University of Glasgow. The sample size proposed is consistent with similar studies. Each patient will undergo just one contact session. The total time in the study will be about 160 minutes (35 minutes training, 110 minutes in the scanner and 15 minutes administration, etc). Approximately 95 minutes of actual scanning will take place (including the anatomical scan).

Because the participants have already taken part in scans with the CCNI, it is deemed that no screening session is needed prior to meeting them on the day of the scan.

-Screening

The participants will still need to complete a standard MRI screening questionnaire. This questionnaire seeks to exclude potential risks of performing an MRI study (due to the effects of the magnet). For example, if people have a cardiac pacemaker or other implant, or other health conditions (e.g., heart condition, asthma, kidney disorder, etc.).

-Training

This session will occur immediately before scanning, and will allow the participants to become familiar with the stimuli and method of response. The participants will learn the task over several training blocks, reaching their plateaux accuracy before beginning the scanned sessions.

-MRI Scanning

This study uses both event related and block designs, devised to determine whether connectivity is altered with different coherence conditions.

The experimental stimuli consist of the sound of moving through a virtual environment, and simulated visual motion over a plane of circular disks. For both modalities the apparent direction is slightly to the left or right of centre. Both stimuli have had their coherence reduced; by the addition of noise in the auditory stimulus and by random perturbing the directions of the disks, in the visual stimulus.

--Block Design (bimodal stimulus)

Each block consists of 6 trials, three leftward moving and three rightward moving. After each 3 second trial, the participant will be given 0.84 seconds to respond with a button press to indicate if the motion was left or right. All the trials in one block will be of the same coherence type (either greater visual coherence, or greater auditory coherence). One scanning session will consist of 20 blocks. These sessions are intended for the connectivity analysis (and for some of the decoding questions, regarding perceived vs actual motion direction). This session will be used 4 times in the scanner.

--Event Related Design (unimodal stimulus)

Each trial will have coherence in only one modality (visual or auditory), and will have the direction of motion either left or right of centre. A fifth trial type will be the null trial, and will consist of a blank screen, containing just the fixation cross. The session will consist of 125 trials, taking a total of 8 minutes. This session will be used 5 times in the scanner.

--Localiser
To identify two of the regions of interest (VIP and MST), a series of functional localisers must also be run during the experiment. These consist of five conditions: the first is a whole screen self-motion-consistent stimulus, in which the dots move inwards, outwards and rotate. The second is a 3x3 grid, each square containing a similar stimulus to the first. The third and fourth stimuli are the same as the first, except that only the left or right third of the screen is displayed. The final stimulus consists of stationary dots. The participant is required to perform a simple, unrelated, task to ensure fixation; simply report the number of times the fixation cross is blue. This session occurs once and takes about 15 minutes.

--Anatomical
A standard anatomical image will also be taken, which will take about 8 minutes.

--Other data Recorded
Besides recording the fMRI and anatomical images, the experiment will also record the participants' choices during the training and MRI sessions.

--Equipment
Besides the fMRI scanner, we will also use ear-phones to provide the auditory stimulus and a button box to allow the participant to provide their responses. We will use either anaglyph glasses or MRI-compatible goggles to give the visual stimulus depth. The eye-tracking equipment will also be used to check for reliable fixation. Without this checkthe results could be confounded by eye motion as region MST also responds to eye motion and VIP to the eye's direction.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

There is no documented side effect to being scanned by MRI.
Participants are made aware of the contra-indications by a detailed information form. In addition with a qualified person, each volunteer reads through and signs a safety questionnaire.

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

The ethical issues associated with fMRI studies have been described in the â standard fMRI experimentâ protocol. All safety guidelines, as well as guidelines for using fMRI facilities at the CCNi, will be strictly followed. At all the scans, investigators who are highly experienced in using fMRI will be present, and will be assisted by highly experienced staff. Participants will be given all the necessary information regarding the technique and procedure, as provided in the Template for standard fMRI experiments. They will be given full contact information for the responsible investigators.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Participants will be normal, healthy, young adult volunteers.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

Participants will receive compensation of ´£30 (´£27.60 for taking part, and ´£2.40 for travelling costs).

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

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

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

"Standard fMRI studies" (such as this study) are in accord with the BPS code of conduct.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

Participantsâ anonymity will be assured by only referring to a subject number during analysis and data storage. Records of personal details will only be kept if subjects agree (for example to contact them for other studies). These details will remain at the Glasgow CCNi which has secure physical storage of this information.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

ASAP, Feb 2012.

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

The project will be carried out in the Centre for Cognitive Neuroimaging, in the Department of Psychology, University of Glasgow.

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§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) for further questions and concerns. If they are interested, they will be given a more detailed description of the experiment and its aims.

Study Information Sheet – MRI

Title of Project: Self motion integration in the human brain

You are being invited to take part in a research study. Before you decide, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. If there is anything that is not clear or if you would like more information, please ask us. Take time to decide whether or not you wish to take part.

Thank you for reading this.

What is the purpose of this study?

Understanding how humans combine sensory information to perceive the world is a continuing and important aspect of neuroscience. A particularly interesting area is how we integrate cues regarding our own motion through the environment.

This experiment will investigate the methods of integration in human self-motion cognition. Specifically this research will look at how and where visual and auditory cues regarding self motion are integrated.

The participants will be a small number of healthy adults. First, you will be able to learn and practice the task. Once the training is successful, you will perform the same task, but this time from within an MRI (Magenetic Resonance Imaging) scanner. We will record both the activity in the regions we believe to be important to the task and the responses you give during the experiment. A computer program will then be used to analyse the data to see if the integration is as predicted, and whether the regions contain the information we expect.

Why have I been chosen?

You have been chosen because you have already volunteered to participate in the Centre for Cognitive Neuroimaging Research Panel, coordinated at Psychology Department, or you volunteered to participate in research studies using functional magnetic resonance imaging.

Who is organizing this study?

This study is organized by [redacted]

What will happen to me if I take part?

Before you take part, a member of staff will ask you some questions to ensure that you have no metal within you before you enter the strong magnetic field of the MRI scanner. You may be asked to remove coloured contact lenses and to change (we provide training suits in case there is metal on your clothes). There will be a 30 minute training session, before entering the scanner, to allow you to learn how to do the task. You will then be asked to lie in the scanner and the scanning will start. The scanning can be noisy so we shall give you headphones and earplugs to reduce this noise. If you are very claustrophobic, that is if you feel very uncomfortable in small closed environment, then it may not be appropriate for you to be scanned.

During the scan itself, you will be asked to watch a projection of a virtual environment, and listen to the sounds of objects as you move past them. You will experience three seconds of video and audio. These stimuli will simulate movement across flat ground. After the stimulus you will respond by pressing a button to indicate if the motion was rightwards or leftwards. This simple trial will be repeated many times to allow us to detect the small changes in the MRI signal. A final, simple task will be asked of you at the end of the MRI study. To allow the regions of interest to be identified, we will display a series of simple

patterns. During these stimuli you will be required to keep your eyes on the central cross, and report, every so often the number of times the cross is blue. We may ask you to wear red-blue '3d' glasses during the training and experiment, to give depth to the 3d stimulus.

All the tasks you will be asked to do will always be explained to you before you sign the consent form, and will never involve any painful stimulation. We will repeat the instructions before each task. At all times you will remain in contact with us through the intercom and you will have a buzzer in your hand, in case you want us to stop the scan and come into the scanner room.

We will ask you in all cases to try to keep your head as still as possible. To help you do so, we will place foam pads under your neck and on the side of your head.

The scanning session will take about 110 minutes, although you will not actually be scanned for more than 95 minutes of this time.

In total, including the training, administration and MRI scan, the whole experiment will take no more than 2 hours, 45 minutes.

What is the device involved?

We can learn a great deal about how the brain works by looking at the blood flow to different parts of the brain whilst the brain performs different tasks. We measure brain function using images taken with a magnetic resonance imaging scanner. This scanner uses a strong magnetic field to create detailed images of brain structure and function. By taking a series of images whilst you perform a task we can build up a picture of the brain areas activated by this type of task. The scan does not involve any injections or X-rays.

What are the possible risks/side effects of taking part?

The scanner can be loud when it takes images, and you will be given earplugs and headphones to block out some of the sound. Also, the scanner space is quite reduced, and people who are uncomfortable in small or confined spaces may not be able to participate. If this applies to you, remember that you may withdraw from the study at any time without explaining why. MRI is generally thought to be a safe, non-invasive imaging technique. There are no known risks or side effects, except that in less then 5% of people the scanning might induce a peripheral nerve stimulation (felt as small twitches); this is not dangerous but might induce discomfort. In some very rare cases, being in the magnetic field may also trigger vertigo (dizziness). In the unlikely case you experience one of these feelings, please alert us and withdraw from the study, should you wish to do so. Although there is no evidence of danger, as a natural precaution we do not wish to include any women who may either be pregnant or have any reason to believe they may be pregnant.

What are the possible benefits of taking part?

We will reimburse you for your time and travel, and you will have the pleasure of knowing that you have made a contribution to our understanding of the relationship between brain and behaviour. However, there will be no direct benefits accruing in terms of your treatment.

What happens at the end of the study?

The results of this study may be published in a journal or used for teaching purposes. The results may also be presented at scientific meetings, or in talks at academic institutions. Results will always be presented in such a way that data from individual volunteers cannot be identified.

Confidentiality - who will have access to the data?

The data will be stored on a secure network and only members of the Centre for Cognitive Neuroimaging (CCNi) of the Psychology Department at University of Glasgow and

those working on the study at the University of Edinburgh will have access to the data. It is possible that the data may be used by researchers working with CCNi for other similar ethically approved research protocols, where the same standards of confidentiality will apply. In all cases your name will not be used and your data will be identified only by a 5 digit code.

Will my General Practitioner (GP) be informed?

This is not a diagnostic scan. Your GP will not be routinely informed if your participation in this study has been as a normal volunteer. Brain images will NOT be routinely examined for abnormalities by a trained neuro-radiologist. Like faces, brains come in all shapes and sizes, however, so that there are many normal variations of what the scan shows. There is a chance of less than 1:100 that your scan may, by chance, show a significant abnormality of which you are unaware.

There is no guarantee that abnormalities will be picked up. It is possible, however, that an abnormality is detected, by chance, in the scan of a normal volunteer by the radiographer or one of the investigators. This is referred to as incidental finding. If this happens, your brain scan will be examined by a trained neuro-radiologist who will provide an expert opinion on the importance of the incidental finding for your health, and on the potential health benefit of disclosing this information to you. There are three possible cases:

- Unlikely net benefit: If the incidental finding is a condition not likely to be of serious importance for your health, or whose likely health importance cannot be ascertained, that finding will not be disclosed to you or your GP.
- Possible net benefit: If the incidental finding consists of a nonfatal condition that could possibly be grave or serious but that cannot be avoided or improved, then when you are likely to deem that information important, that finding will be disclosed to you with appropriate guidance. You may also choose not to be informed should such an unlikely finding apply to you. In that case, please tick the appropriate box on the consent form.
- Strong net benefit: In the very unlikely case of a life threatening condition or a condition likely to be grave and that can be treated or improved, this information will be disclosed to you and you will be appropriately advised. Further action will be decided which could involve further imaging and/or a discussion between you and your GP or an appropriate clinician.

What if new information becomes available?

If the new information pertains specifically to the health of the volunteer, the volunteer may be informed (see previous paragraph). Otherwise, new information will be published through traditional scientific channels (journal articles, conference presentations).

What will happen to the study results?

In accordance with good research practice, they will be kept securely for a minimum of 10 years and possibly indefinitely in the CCNi data archive.

Will I receive a financial compensation?

Yes; You will receive £10 per hour for your participation in this study. The study will take no longer than 2hours, 45 minutes. Including £2.40 travel costs, the total payment for the whole study will be £30.

Can I ask questions about the research project?

Yes; We will answer all questions you may have that are related to the research project to which you agree to participate. You can contact the investigators at any time in the future. Contact details are provided at the bottom of this information sheet.

Can I withdraw from the study?

Yes. You participation to this research project is voluntary, and you may withdraw

from the research at any time and for any reason, without explaining why, and this will not affect your medical care or legal rights.

Can the investigators interrupt the study?

The research may be interrupted by the researchers at any time, and for several possible reasons such as new requirements for the selection of participants, for example.

Are there compensation arrangements if something goes wrong?

In the unlikely event of anything untoward happening, the University of Glasgow provides insurance for claims.

This research study has been approved by the Ethics Committee of the Faculty of Information and Mathematical Sciences at University of Glasgow.

Contact details of Principle Investigator

Name: [redacted]
Address:
Telephone:
Email:

Thank you for considering taking part in this study. Our research depends entirely on the goodwill of potential volunteers such as you. If you require any further information, we will be pleased to help you in any way we can.

STUDY INFORMED CONSENT - MRI
(This form must be completed prior to any scanning)

Study title: Self motion integration in the human brain

☐ I confirm that I have read and understood the Study Information Sheet provided to me for the above study and have had the opportunity to ask questions.

☐ I understand the risks and contraindications including pregnancy.

☐ I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason, without my medical care or legal rights being affected.

☐ I understand that this is not a diagnostic scan but that should, by chance, something abnormal be noticed, an expert neuro-radiologist will examine my scans. There is no guarantee, however, that if there is an abnormality, it will be detected.

☐ I do not wish to be informed if a nonfatal condition likely to be grave or serious but that cannot be avoided or ameliorated is discovered in my brain (non mandatory for participating).

☐ I understand that the research data may be accessed by researchers working at or in collaboration with the CCNi in similar ethically approved studies but that at all times my personal data will be kept confidential in accordance with data protection guidelines.

I have initialled the above boxes myself and I agree to take part in the study.

_____
SIGNATURE OF VOLUNTEER

Name: _____ Date: _____

_____
SIGNATURE OF WITNESS

Name: _____ Date: _____

Subject ID _____

Centre for Cognitive Neuroimaging
Department of Psychology
University of Glasgow
58 Hillhead street, Glasgow G12 8QB
Tel: +44 (0)141-330 5089, email: info@psy.gla.ac.uk

REPORT ON ETHICS PROPOSAL
REF# CSE00992 (Version 1)
TITLE: Use of the Clyde River Laboratory game
SUBMITTED BY: Helen Purchase, Senior Lecturer
FROM THE: Computing Science
REVIEWERS: Christoph Scheepers, Simon Garrod

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

This project is a level 3 software development project. Usually the evaluation of such software is covered by internal ethics procedures in the School of Computing Science. However, this software is designed for school children, and needs to be evaluated in the context of a school class.

This is not a research project - the data will not be published.

Three undersgraduate students will observe a class of approximatety 20 pupils using software developed by the students.

The students will never be alone in the room with the pupils - disclosure is not required. They will be accompanied at all times by the [redacted] and the class teacher.

1. The students will never be alone with the pupils
2. There will be around twenty pupils at a time in their regular computer room
3. The student will observe the pupils using the software system they have developed, taking observational notes
4. They will only interact with the pupils individually if the pupils ask them a question, or seek help
5. They will not collect any individual data - the pupils will not be interviewed individually and will not have to fill in any questionnaires
6. They will observe the class teacher or [redacted] discussing the system with the pupils afterwards, taking observational notes
7. We will have signed agreement from the [redacted] and the Class Teacher (see attached consent form)

Ł COMMENT FROM SIMON GARROD: Are you seeking parental permission there should be a standard protocol for using schoolkids as participants?

Ł COMMENT FROM CHRISTOPH SCHEEPERS: What information will be given to the pupils?

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

Not funded

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

Students will observe pupils using the system, taking observational notes. The pupils will be given a printed set of five small tasks to encourage extensive use of the system.

The evaluators will use an observational checklist (to know what is to be recorded during the evaluation), a pen or pencil,a notepad to record any additional data, and will each have a copy of the tasks.

[redacted] and the teacher will be provided with a question sheet to use in discussing the system with the pupils after they have used the system.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

The pupils will have an opportunity to explore a novel computer game. This will take part in their usual computer class, and will be led by the class teacher and [redacted] The pupils know and have worked with [redacted] before, so they will be comfortable in this environment. They will be asked in advance whether they wish to play this game, and any pupil can opt out if they do not want to do so (an alternative activity will be provided).

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

Pupils might feel uncomfortable being observed, but such observation is not unusual in classrooms. No individual personal data will be collected. No data will be published. All information collected via observation will simply be presented in an evaluation chapter of a third year project report. The pupils will be aged [redacted] (from the [redacted] has indicated that parental consent is not necessary "as the children are not participating in something outside of the school and the headteacher is happy to go along with it."

Ł COMMENT FROM SIMON GARROD: See answer to 1.

Ł COMMENT FROM CHRISTOPH SCHEEPERS: Again, information given to pupils is not clear. Pointing out that they are used to (being uncomfortable with) being observed may not be enough.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Pupils will be at St. Mary’s Primary School, Lanark. They will be [redacted] yrs old, and will take part in this activity as part of their normal school activities.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

no

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

No recruitment of pupils will be necessary, as the activity will be part of their normal school activities.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

Yes

Ł COMMENT FROM SIMON GARROD: See 1.

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

No individual personal data of any sort will be collected. The undergraduate students have no links with the school, and so will not know any of the pupils personally.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

20th February 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

St. Mary's Primary School, Lanark

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

After the pupils have used the system, [redacted] will discuss the use of the system with the pupils and the teacher in an open dicussion forum. He and the undergraduate students will be able to answer any questions at that time.

REPORT ON ETHICS PROPOSAL
REF# CSE00992 (Version 2)
TITLE: Use of the Clyde River Laboratory game
SUBMITTED BY: Helen Purchase, Senior Lecturer
FROM THE: Computing Science
REVIEWERS: Christoph Scheepers, Simon Garrod

1. DESCRIBE THE BASIC PURPOSES OF THE PROPOSED RESEARCH

This project is a level 3 software development project. Usually the evaluation of such software is covered by internal ethics procedures in the School of Computing Science. However, this software is designed for school children, and needs to be evaluated in the context of a school class.

This is not a research project - the data will not be published.

Three undergraduate students will observe a class of approximatety 20 pupils using software developed by the students.

The students will never be alone in the room with the pupils - disclosure is not required. They will be accompanied at all times by the [redacted] and the class teacher.

Our [redacted] contact, [redacted] (from the [redacted] has indicated that parental consent is not necessary "as the children are not participating in something outside of the school and the headteacher is happy to go along with it." (We have discussed this matter in advance with the chair of the ethics committee).

1. The students will never be alone with the pupils
2. There will be around twenty pupils at a time in their regular computer room
3. The student will observe the pupils using the software system they have developed, taking observational notes
4. They will only interact with the pupils individually if the pupils ask them a question directly, or seek help
5. They will not collect any individual data - the pupils will not be interviewed individually and will not have to fill in any questionnaires. No software logging information will be collected.
6. They will observe the class teacher or [redacted] discussing the system with the pupils afterwards, taking observational notes
7. We will have signed agreement from the [redacted] and the Class Teacher (see attached consent form)
8. The teacher will introduce the game to the pupils at the start of the class. We will ask her to:
* introduce the three students to the pupils by name
* tell the pupils that the students have created a new game for them
* tell the pupils that the students want to see if they like using the game
* tell the pupils that if they don’t want to play the game, then there is an alternative activity that they can do
* tell the pupils how to start the game, and then ask them to play the game

Ł COMMENT FROM SIMON GARROD: However, it is not clear whether this project has parental permission.

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

Not funded

3. DESCRIBE THE DESIGN OF YOUR EXPERIMENT (E.G. CONDITIONS, NUMBER OF PARTICIPANTS, PROCEDURE AND EQUIPMENT WHERE APPROPRIATE) SEE BPS ´§2 & ´§8

Students will observe pupils using the system, taking observational notes. The pupils will be given a printed set of five small tasks to encourage extensive use of the system.

The evaluators will use an observational checklist (to know what is to be recorded during the evaluation), a pen or pencil,a notepad to record any additional data, and will each have a copy of the tasks.

[redacted] and the teacher will be provided with a question sheet to use in discussing the system with the pupils after they have used the system.

4. DESCRIBE HOW THE PROCEDURES AFFECT THE PARTICIPANTS

The pupils will have an opportunity to explore a novel computer game. This will take part in their usual computer class, and will be led by the class teacher and [redacted] The pupils know and have worked with [redacted] before, so they will be comfortable in this environment. They will be asked in advance whether they wish to play this game, and any pupil can opt out if they do not want to do so (an alternative activity will be provided).

5. STATE WHAT IN YOUR OPINION ARE THE ETHICAL ISSUES INVOLVED IN THE PROPOSAL (SEE BPS ALL SECTIONS)

Pupils might feel uncomfortable being observed, but such observation is not unusual in classrooms. The class teacher will allow those students who do not want to be observed to undertake a different activity in a separate area of the classroom - the undergraduate students will not collect any observational data from those students who are doing this alternative activity.

No individual personal data will be collected. No data will be published. All information collected via observation will simply be presented in an evaluation chapter of a third year project report. The pupils will be aged [redacted] has indicated that parental consent is not necessary "as the children are not participating in something outside of the school and the headteacher is happy to go along with it."

Ł COMMENT FROM SIMON GARROD: Do you have [redacted] indication in writing? If anything were to go wrong.

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... GIVE A BRIEF DESCRIPTION HERE AND FILL IN THE CHILDREN RESEARCH ETHICAL PLAN. THE FORM MUST BE UPLOADED TOGETHER WITH THE CONSENT AND INFORMATION FORMS.

Pupils will be at St. Mary's Primary School, Lanark. They will be [redacted] yrs old, and will take part in this activity as part of their normal school activities.

7. STATE IF PAYMENT WILL BE MADE TO SUBJECT

no

8. DESCRIBE THE PROCEDURES FOR ADVERTISING, FOR RECRUITING PARTICIPANTS, AND FOR OBTAINING CONSENT FROM PARTICIPANTS (SEE BPS ´§3)

No recruitment of pupils will be necessary, as the activity will be part of their normal school activities.

9. STATE WHETHER THE PROPOSAL IS IN ACCORD WITH THE BPS CODE OF CONDUCT OR THE ESRC FRAMEWORK OF RESEARCH ETHICS

Yes

10. DESCRIBE HOW THE PARTICIPANTS' ANONYMITY AND CONFIDENTIALITY WILL BE MAINTAINED
(SEE BPS ´§7)

No individual personal data of any sort will be collected. The undergraduate students have no links with the school, and so will not know any of the pupils personally.

11. DATE ON WHICH PROJECT IS EXPECTED TO BEGIN AND END

20th February 2012

12. LOCATION AT WHICH THE PROJECT WILL BE CARRIED OUT

St. Mary's Primary School, Lanark

13. DESCRIBE HOW PARTICIPANTS 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) (SEE BPS ´§5 & ´§10)

After the pupils have used the system, [redacted] will discuss the use of the system with the pupils and the teacher in an open dicussion forum. He and the undergraduate students will be able to answer any questions at that time.

Information Sheet for the Clyde Foundation Online Laboratory evaluation: [redacted] **and Class** Teacher (St. Mary's Primary School, Lanark)

A team of five undergraduate students at Glasgow University have created an 'online laboratory' game intended for late primary school pupils to investigate living things in the Clyde River. The online game presents images of living things, and allows the pupils to zoom in on these images, and 'flip' them – in the same way that might be done in a real laboratory under a microscope. The laboratory exercises are part of a quiz: the intention being that pupils will want to spend time in this online laboratory in order to improve their own, and their school's, scores.

The evaluation will entail three undergraduate students observing school pupils using the game in the classroom, and providing help to the pupils when requested.

- The students will be accompanied by [redacted] of the Clyde River foundation at all times.
- The data collected will be observational data only – the pupils will not need to fill in any questionnaires, or be interviewed. No personal data will be collected from the pupils.
- The undergraduate students will not knowingly intervene with the natural environment that the pupils are used to.
- Pupils should be given the opportunity to opt out of using the game if they do not wish to take part. (Some other activity will need to be provided for those who opt out).
- Adobe Flash would need to be installed on the computers if necessary; it will be removed afterwards.
- The observational period will not last more than an hour for each class observed.

If you have any questions about the evaluation, please do not hesitate to contact:

[redacted]

Helen Purchase
Senior Lecturer
School of Computing Science
University of Glagow
Tel: 330 4484
helen.purchase@glasgow.ac.uk

Consent Form for the Clyde Foundation Online Laboratory evaluation: [redacted] Class Teacher (St. Mary's Primary School, Lanark)

A team of five undergraduate students at Glasgow University have created an 'online laboratory' game intended for late primary school pupils to investigate living things in the Clyde River. The online game presents images of living things, and allows the pupils to zoom in on these images, and 'flip' them – in the same way that might be done in a real laboratory under a microscope. The laboratory exercises are part of a quiz: the intention being that pupils will want to spend time in this online laboratory in order to improve their own, and their school's, scores.

The evaluation will entail three undergraduate students observing school pupils using the game in the classroom, and providing help to the pupils when requested.

- The students will be accompanied by [redacted] at all times.
- The data collected will be observational data only – the pupils will not need to fill in any questionnaires, or be interviewed. No personal data will be collected from the pupils.
- The undergraduate students will not knowingly intervene with the natural environment that the pupils are used to.
- Pupils should be given the opportunity to opt out of using the game if they do not wish to take part. (Some other activity will need to be provided for those who opt out).
- Adobe Flash would need to be installed on the computers if necessary; it will be removed afterwards.
- The observational period will not last more than an hour for each class observed.

I confirm that I have read and understood the information sheet and agree to the students (accompanied by [redacted] observing the pupils using the online system in:

Signature:_____

Position: _____

Date:_____

Class to be observed _____

Date and time _____