Consent Form for Participation in a Research Study
University of Massachusetts Amherst

Researcher(s): Rosemary Cowell
Study Title: Testing a Unified Theory of Perception and Memory in the Medial Temporal Lobe

---

Introduction: You are being asked to participate in a research study. Your participation is voluntary. If you are a student your decision whether or not to participate will not have any affect on your academic status. Please feel free to ask questions at any time if there is anything you do not understand.

Purpose of this fMRI investigation. The goal of these experiments is to investigate how the brain represents visual patterns, objects and scenes, and how these neural representations allow us to perceive the world and remember what we have seen in the past. You are being asked to participate because you are a normal healthy adult. Your participation allows us to determine basic principles of brain organization, and how that organization relates to behavior. The data obtained through your participation will be included with that from other subjects as part of a scientific study to appear in the peer-reviewed literature. These results may be useful for understanding how the brain functions.

Study Procedure: MRI: This is a special three-dimensional picture of the brain using magnetic waves. You will lie inside a narrow tube and hold still for about 1.5 hours. Throughout the study you will be visible to the experimenter by means of a video camera and you will be in direct verbal communication with MRI personnel. You will view stimuli using a mirror and movie screen specially designed to work with the MRI machine and your responses will be in the form of button presses or hand movements. You will be asked to take part in a brief practice task or learning task, using a laptop computer, before entering the scanner. In the practice and in the scanner, you will be presented with visual stimuli in the form of abstract shapes, line drawings or photographs of objects, faces or scenes, or written words. Stimuli will appear for several seconds each, and will be presented sequentially in blocks of 30 to 100 stimuli. For each stimulus, you will be asked to respond with a button press. At the start of each block, written instructions on the screen will inform you of the response that you are being asked to make, e.g., "For each stimulus, indicate whether it is the same as the previous stimulus (Left Button=Same; Right button=Different)". On some trials ("null trials"), no visual stimulus will appear, but a dot will remain in the center of the screen and you will be required to keep your eyes on the dot. For these trials you will be asked to provide a different response, e.g., "Hit any button whenever you see the dot get dimmer". The response required for null trials will also be described in written instructions at the start of each block. Between each block, there will be a break of at least 1 minute. You may request a longer break, if desired. You may also be asked to complete another type of task, in which you will simply see a flashing stimulus appear on the screen, and you will be asked to keep your eyes on a dot at the center of the screen, without making any button presses. During the experiment it is very important for participants to remain as still a possible since the brain imaging technique is very sensitive to movement. Please ask the experimenter any questions that may arise while you are doing the task(s).

The purposes of this study are not described in detail because if they were, there might be a predictable effect on your responses. After the experiment, you will have an opportunity to discuss any questions pertaining to the study with the research team.

The Data Collected in this Study: Several types of brain image data may be collected as part of this investigation. This will include one or more of the following:

- A low-resolution scout image for use in aligning the scanner's field of view (~15 seconds)
- A low-resolution anatomical image of your brain structure for use in data processing (~2 minutes)
- One or more series of brain images collected over time that track brain function during the performance of a cognitive or behavioral task (typically 5 to 10 minutes in length)
- A high-resolution anatomical image of your brain structure for use in the display of results (~10 minutes)

- A diffusion-weighted image for assessing white matter fiber orientation often used in data analysis and modeling (~10 minutes)

Data concerning your age, gender, handedness, task performance, etc. will also be collected as part of the study.

What if there is an unexpected finding on my MRI scan?
The investigators for this research project are not licensed or trained diagnosticians or clinicians. The testing performed in this project is not intended to find abnormalities, and the images or data collected do not comprise a diagnostic or clinical study. The investigators and the University of Massachusetts Amherst are not responsible for failing to find abnormalities. However, on occasion the investigators may perceive an abnormality. When this occurs, UMASS Amherst researchers will consult with a specialist. If the specialist determines that additional inquiry is warranted, the researcher will contact you. In such a case, you are advised to consult with a licensed physician to determine whether further examination or treatment would be prudent. The investigators, radiologist, and the University of Massachusetts Amherst are not responsible for any decision you make with regard to examination or treatment. Although the images collected for this research project do not comprise a diagnostic or clinical study, the images can be made available to you for clinical follow-up.

Expiration Date on the Viability of the Collected Data: *Data gathered from this study will be maintained by the investigator for five years or as required by journal, federal or state regulation.*

Storage of De-identified Data: Neuroimaging data collected in this study may be stripped of ***all*** identifying information and archived indefinitely on DVDs to be stored for future research use. If you do not wish your data to be stored in this way, please indicate this choice to the experimenter.

Health Benefits to You: There are no direct benefits to you in participating in an fMRI study of brain function. These data are collected purely for the purposes of research and do not have a clinical or diagnostic value.

Risks to Your Health: The risks of participation in the MRI scanning procedure are minimal. Special considerations are made for the following:

1. *Metal:* The MRI machine produces a constant, strong magnetic field (3 Tesla), so if you have metal implants and clips within your body they may be influenced by the magnetic field and shift in position. Thus, if you have such implants you must inform us and withdraw from the study. Metal earrings and necklaces also must be removed prior to the study. If you have shrapnel, surgical implants, or other pieces of metal in your body that cannot be removed, you may not be able to participate in studies involving the MRI scanner. In many cases, people having dental appliances in their mouths can participate but should notify the investigator to be certain.

2. *Women of child bearing potential:* The risks of an MRI scan to the unborn fetus are unknown. We strongly recommend pregnant women do not take part in this research study. By signing this form you are indicating to the best of your knowledge that you are not pregnant. If you are uncertain then the study can be rescheduled to a later date.

3. *Hearing:* Functional MRI scanning produces a loud (92 dB) high frequency tone that can cause hearing damage if appropriate hearing protection is not used. Adequate hearing protection in the form of foam ear-plugs will be provided and required.

4. *Claustrophobia:* The functional scanning coil fits closely around your head, so if you feel anxious in confined spaces, you may not want to participate. If you decide to participate, and then at a later time decide to discontinue, just let us know and we will stop the experiment.

Your Right to Withdraw from the Study: You may withdraw from the study at any time and for any reason. Your decision whether or not to participate in this study, or a decision to withdraw will not involve any penalty or loss of benefits to which you are entitled.

Financial Considerations for Participating: There are no costs to you for your participation in this study. If you are not a student receiving Dartmouth College T-point credits, you will be paid for your participation at a rate of $20 per hour.

Your Right to Data Confidentiality: All information you provide will be kept confidential except as required by law. Your name will not be used in any publication that may result from this study. The manufacturer of the MRI scanner (Siemens) may request the use of images acquired in this study, although they will not have access to the names of any subjects. Your data may also be shared with other researchers around the world or with a publicly available data archive. In such cases, every reasonable effort will be made to remove identifiers from the data that would indicate any connection to you (e.g. the removal of your name, address, SSN, etc.).

Your Right to Revoke Consent to Participate in this fMRI Study: At any time now or in the future you feel that your data should no longer be used for research purposes, you have the right to revoke the consent you gave in signing this document. Please communicate your desire to have your data removed from the investigator's database by contacting the investigator(s) or person(s) listed below. Keep in mind that if your anonymized brain image data have been shared with other researchers or placed in a centralized archive, then it may be impossible to have these copies deleted.

Study Funding: This study is funded by "start-up funds" (State of Massachusetts) and by a grant from the National Science Foundation awarded to Dr. Rosie Cowell, Assistant Professor of Psychological and Brain Sciences at the University of Massachusetts, Amherst.

Investigator Contact Information: This research is being conducted by members of the Department of Psychological and Brain Sciences at UMass Amherst (laboratory of Dr. Rosie Cowell). For further information about this study, you may contact:

Investigator or Contact Person(s):	Dr. Rosie Cowell
Phone Number:	413-687-7855(cell) or 413-545-1832(office)
Email Address:	rcowell@psych.umass.edu
IRB Number:	2013-1886

If you have further questions about this project or if you have a research-related problem, you may also contact the Psychology Department Chair via Laura Wildman Hanlon (413) 545-2387. If you have any questions concerning your rights as a research subject, you may contact the University of Massachusetts Amherst Human Research Protection Office (HRPO) at (413) 545-3428 or humansubjects@ora.umass.edu.

INFORMED CONSENT:
I HAVE READ THE ABOVE INFORMATION ABOUT THIS STUDY AND HAVE BEEN GIVEN AN OPPORTUNITY TO ASK QUESTIONS.

I AGREE TO PARTICIPATE IN THIS STUDY AND HAVE BEEN GIVEN A COPY OF THIS CONSENT FOR MY OWN RECORDS.

_____
Printed Name

_____
Participant's Signature and Date

_____
Investigator's Signature and Date