

General Information Brochure

This General Information brochure contains important information if you consider participating in one of the studies run by the OIST Embodied Cognitive Science Unit. Please read it carefully before agreeing to participate.

Our Unit is interested in investigating adaptive behavior as it emerges from an interplay between the brain, body and environment. We employ a diversity of methods, some of which require volunteers to participate in various experiments that test e.g., perception, communication, social interaction. In these experiments we typically record participant's behavior, such as movement trajectories, perceptual judgements, reaction times, but also take physiological measurements like muscle activation, heart rate or electrical brain activity. Some of our experiments also require participants to use novel tools or interact with a robot. Despite this diversity of methods, all of them are non-invasive and have negligible to minimal risk. However, to further ensure your safety, participation in our studies requires that several conditions are met. These conditions will be checked prior to your participation by means of a *Screening Form*.

Each study that we carry out has been reviewed and approved by an independent ethics committee: the OIST *Human Subjects Research Review Committee*. If you are a member of OIST community, you can find out more about the approval process by going to this website: <https://groups.oist.jp/rs/human-subjects-research>. Otherwise please contact us for more information.

Here we answer some questions you might have about participating in one of our studies.

1. What determines who is selected for participation?

Most studies run by our Unit do not employ any specific selection criteria as we are interested in general properties of human behavior and cognition.

When responding to an advertisement about our studies, you will need to fill in a form that might include questions about your handedness (whether you are right- or left-handed), vision (whether it is normal or corrected), your mother tongue, or whether you suffer from some illnesses (e.g., epilepsy). Specific questions that will be asked, depend on the research questions and methods employed in any given study. Their purpose is generally to ensure good quality of data so that it can be easily compared between different participants or to promote the safety of all participants. Thus, for example, data collected from somebody with poor vision not corrected with lenses or glasses might show a high number of errors that are solely due to the vision problem and not anything related to research hypotheses. On the other hand, accepting someone with epilepsy into a study that uses electroencephalography might trigger a seizure and so needs to be avoided.

When the goal of the study is to investigate cognition in special populations, such as people with specific disorders (e.g., autism, ADHD), or specific behavioral profiles (e.g., bilingual), recruitment material will mention this explicitly.

2. What will I be asked to do?

Around 48 hours before participation in the experiment, you will receive an information package from the researcher that contains 3 information sheets:

- *General Information Brochure*: the present document
- *Equipment Information*: a document that describes all measurement devices and experimental interfaces used in our studies
- *Study Information Brochure*: a document that provides more specific information about the study you signed up for, including a list of equipment that will be used, which can be cross-referenced with the *Equipment Information* sheet

You are required to have read this information before arriving to the experiment. This is to allow you sufficient time to reflect on your participation.

Generally, no extra preparation is required before the experiment. It is important that you are fit, alert and that you did not drink alcohol or use drugs the night before.

On the day and time that you agreed with the researcher, you will be picked up from the waiting area and led to the experimental room. The researcher will explain the aims of the study, what kind of responses will be involved and the measurement techniques that will be applied to you. You will be given a chance to ask any further questions you might have about participation. Then you will be asked to sign 2 forms:

- a *Screening Form* that confirms you are qualified to participate in the study
- an *Informed Consent Form* that confirms that you have been sufficiently informed about the study and are willing and able to participate voluntarily.

Subsequent procedures depend on the research method that is being used. You can read more about this in the information brochures on EEG, other physiological recordings and human-robot studies if these apply to the specific study you signed up for.

3. Do I have to participate?

Even if you know the Unit's Principal Investigator (Tom Froese) or other researchers involved in the study, you are under no obligation to participate in it. This is especially true for cases in which you have a special relationship with the researchers (for instance, you are their friend, student or collaborator). In fact, if you have a current working or personal relationship of this type, you will not be allowed to participate in the study. In case of potential future relationships that can be difficult to predict, you are not expected to agree to participate in the study, your decision to participate should be entirely voluntary and you will not face any negative consequences if you do not sign up for the study.

It is important that you understand that even after you agree to participate and sign the consent form, you have the right to withdraw from the experiment without giving a reason. You will not face any

negative consequences or disadvantages as a result of your withdrawal, and you will still receive the agreed remuneration for your time involvement.

If you wish to withdraw from the study before it begins, please e-mail the Lead Researcher, whose contact will be given in the recruitment material. If you wish to withdraw from an ongoing experiment, a verbal request to the researcher present in the room is sufficient. After your participation in the experiment is concluded, there is still a possibility to delete your collected data until it has been used in a published resource (conference paper, journal article etc.). At this point your anonymized data will be uploaded to a data sharing platform for the purpose of ensuring scientific transparency and replicability. Consult Section 5 of this document for more details on our data management policies.

4. What will I gain from participating in a study?

Participation in our studies contributes to advancing our knowledge about adaptive behavior and cognition but has no direct or indirect benefits to your physical or mental health. All data collected in the experiment from different participants will be analyzed on a group level (e.g., comparing average responses of people that participate in different experimental conditions). We will not use the data to make any individual assessment of your behavior or mental capacities.

Participation is reimbursed by means of gift cards, according to the standard hourly rates stipulated by our Unit:

Study type	Rate
Behavioral measures only study	¥500
EEG study	¥1500
Study that involves interaction with a robot	¥1000
Study that involves other physiological measures	¥1000

For a study that falls into more than one category above, the highest rate applies.

The price variability between different types of experiments is proportional to the amount of inconvenience linked to participation. Experiments that involve only behavioral measures, typically require an interaction with a certain paper-based or computer-based interface. For instance, you might be asked to view certain stimuli on the screen and respond by means of button presses, fill in some questionnaires or engage in interaction with other people. Apart from time involvement and potential boredom they do not cause any inconvenience. Experiments that include physiological recordings might require attaching electrodes to the skin or attaching or putting a small sticker to the forehead for eye tracking. Experiments that include interaction with the robot might require instructing you on how to interact with the robot safely. Both of these procedures result in time and effort spent on preparation in addition to performing actual experimental tasks. Finally, EEG measurements also require preparation, which additionally involves the use of conductive gel on the electrodes attached to the scalp. You might feel the need to wash your hair after participating in such a study, which translates into a higher level of inconvenience compared to other types of studies. Please see the description of specific procedures linked to different measurements in our Equipment Brochure.

5. What will happen to my data?

If you register to participate in one of our studies, you will have to fill out a general questionnaire about your demographics and your clinical history. As explained in section 1, this information is initially required in order to determine if you meet the inclusion criteria for participating in any of the research methods, such as EEG, or to decide whether you are a suitable candidate for a particular experiment. It is guaranteed that all information will be handled carefully. Personal data won't be shared with anyone other than staff of the designated research team.

Experimental data collected during the study are treated confidentially. Your data collected during the experiment is stored and further processed under a unique, randomly generated, subject code. The link between your personal data and the code is saved in a separate reference table. In principle, the researcher knows the combination between you and the code during your participation. However, given that the code is a random combination of strings and numbers and that many individuals participate in the experiment, this information is unlikely to be retained in the researcher's memory.

After the completion of the study, the reference table that links your personal data to your code, as well as your signed Consent Form, will be handed to the Unit's Lab Coordinator. The Lab Coordinator will deposit this data in a secure location for a period of 5 years. This is necessary to enable you to withdraw the data at a later time (but within the storage period) should you so desire. You can do that by sending an e-mail request to the Lab Coordinator or the Unit's PI (see their contacts in section 8). The Lab Coordinator will then retrieve your subject code from the reference table and execute a data deletion script that removes all your collected data from our storage. After the storage period is over, sensitive data and associated reference tables will be destroyed.

In the spirit of open science, your anonymized experimental data may be shared with other researchers for strictly scientific purposes, such as reproducing the results of analyses that will be reported in publications based on your data. The data will be uploaded without the subject code so all connection between you and the data will be severed at this point. Be aware that it will not be possible to delete individual data once it has been uploaded in this anonymized form. Additionally, data in this format may also be used in future studies by us or other researchers as stimuli for other participants or reanalyzed with different measures and under different hypotheses. You will need to agree to such sharing of data by ticking a specific clause in the *Informed Consent Form*.

In case participation involves recording additional sensitive data like audio or video, the researcher will inform you about this and you will need to give a specific consent for the use of this type of data. Video and audio recordings will be stored in a secure dedicated portion of the OIST server, accessible only to the researchers involved in the study. In all cases your privacy will be protected according to Japanese law.

6. What happens in case of any accidents, adverse effects or incidental findings?

We take utmost care in preventing any accidents from happening. However, should anything unexpected happen during the experiment, we will follow a standard emergency protocol in resolving the situation. In addition, in case of any unexpected sickness or injury during the experiment, all costs for treatment and transportation will be covered by OIST.

Some of the measurements such as recording electrical activity from the scalp (EEG) or muscles (EMG) require attaching electrodes to your skin. This is generally painless and safe but might result in mild skin irritation in some people. This typically resolves on its own.

Our experiments are not designed for clinical diagnosis and researchers have no clinical training. Participation in any of the experiments can therefore not be considered as a clinical or screening test. In exceptional circumstances the new data collected may give indications concerning your health conditions. If you want to be notified about this, you need to tick a specific clause in the Informed Consent Form. If you agree, you will be notified by the researcher and given an opportunity to bring your raw data to a specialist of your choice.

7. How can I see the results of the study?

As mentioned above, you will not be provided with individual results of your participation in the study. You may, however, be informed about general results once the collected data leads to a scientific publication. The links to publications stemming from work in our research Unit are posted on the Unit's website: <https://groups.oist.jp/ecsul/posts>.

8. Who can I contact for more information?

If you are unable to make it to the appointment (on time), please inform the responsible researcher as soon as possible. You may also contact this researcher for additional information about the study or if you would like to withdraw from participation.

In case of complaints about an experiment, contact the responsible experimenter, the Unit's Lab Coordinator Kaori Yamashiro (kaori.yamashiro@oist.jp) or the Unit's PI Tom Froese (tom.froese@oist.jp).