

Consent Form

Title of Research Study: Causal Inference and impact of prior beliefs on perception

Investigator Team Contact Information: Dr. Jean-Paul Noel

For questions about research appointments, the research study, research results, or other concerns, call the study team at:

Investigator Name: Jean-Paul Noel Investigator Departmental Affiliation: Department of Neuroscience Phone Number: 615-482-1760 Email Address: noelx071@umn.edu	Student Investigator Name: Tina Liu Phone Number: 7815979191 Email Address: liu02936@umn.edu Student Investigator Name: Maximillian Bluhm Phone Number: 5419745034 Email Address: bluhm114@umn.edu
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Supported By: This research is supported by startup funds by the Department of Neuroscience at the University of Minnesota.

Financial Interest Disclosure: The principal investigator or research team have no conflict of interest. The following disclosure is made to give you an opportunity to decide if this relationship will affect your willingness to participate in this research study:

Key Information About This Research Study

The following is a short summary to help you decide whether or not to be a part of this research study. More detailed information is listed later on in this form.

What is research?

- The goal of research is to learn new things in order to help people in the future. Investigators learn things by following the same plan with a number of participants, so they do not usually make changes to the plan for individual research participants. You, as an individual, may or may not be helped by volunteering for a research study.

Why am I being invited to take part in this research study?

We are asking you to take part in this research study because you meet the age, sex, IQ, and/or other criteria set for inclusion in this study.

What should I know about a research study?

- Someone will explain this research study to you.
- Whether or not you take part is up to you.
- You can choose not to take part.
- You can agree to take part and later change your mind.
- Your decision will not be held against you.
- You can ask all the questions you want before you decide.

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Why is this research being done?

A key step in perceiving our environment is determining what pieces of information go together, and which do not. For instance, when speaking with a friend in a crowded room, we have to infer which auditory and visual signals are being emitted by our friend, as opposed to by other people. We do not fully understand how humans unconsciously attribute hidden causes to the signals they observe, and we hope this study will help us further understand this process. In the long term, this research will help us further understand perception, and potentially benefit individuals with different neurodevelopmental and/or psychiatric conditions defined by an inflexible attribution of signals to causes.

How long will the research last?

This session will last a maximum of 2 hours; 90 minutes of experiment + 30 minutes for setup and clean-up. If you are willing to come in for additional sessions, you can come in for a total of 4 sessions, each being 2 hours long.

What will I need to do to participate?

You will be asked to view simple images, as well as listen to simple auditory “clicks” presented via a speaker. These may happen in isolation, or together. You will be asked to judge whether the streams of auditory and visual stimuli belong to a common cause, or different ones. Additionally, you will wear an EEG cap, measuring tiny fluctuations of voltage across your scalp as you perform these judgments.

More detailed information about the study procedures can be found under “What happens if I say yes, I want to be in this research?”

Is there any way that being in this study could be bad for me?

The greatest risks from participating in this study are (1) moderate boredom from having to repeatedly answer to same question to very small variations of the same visual images and auditory clicks, and (2) the potential for your hair/face to become slightly wet. We will give you a towel at the end of the experiment to dry off.

As part of the research, we may ask questions about how you feel mentally and emotionally. We are providing a list of resources to you in case you or they would like to talk to someone and get help. If you are thinking about hurting yourself or someone else, please tell someone who can help immediately. Call the toll-free 24-hour National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255) to talk to a counselor near you.

Will being in this study help me in any way?

We cannot promise any benefits to you or others from your taking part in this research. There will be no direct benefit to you, as participant, in the short-term, beyond compensation for your time. However, it is possible that in the long-term the results from this study may inform our understanding of neurodevelopmental or psychiatric conditions.

if I do not want to be in this research?

There are no known alternatives, other than deciding not to participate in this research study.

Detailed Information About This Research Study

The following is more detailed information about this study in addition to the information listed above.

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How many people will be studied?

We expect about 270 people here will be in this research study.

What happens if I say *“Yes, I want to be in this research”*?

You will interact with a researcher at the University of Minnesota. This research project can involve up to 4 sessions of 2 hours. However, currently you are not asked to commit to all 4 sessions. This session, today, will last up to 2 hours, including setup and clean-up. You will be presented with very simple images and/or auditory stimuli, and asked to make a simple judgment regarding this stimuli. The judgment will be a simple choice between two options. Additionally, you will wear an EEG cap, measuring incredibly small voltage fluctuations that occur naturally on everyone's scalp. It should not be painful - please alert the experimenter if it is. You will be given breaks every 10-12 minutes, or at any other time you request one. Participation is completely voluntary, and you can decide to stop the experiment at any time. You will be compensated with \$30/hour for your time. At the end of the 2 hours, we may ask you for permission to contact you in the future for further experiments. If you decided to come back, you will be compensated with \$30/hour for each hour you spend with us. If you complete all 4 sessions, we will compensate you with an extra \$60 (as if you would have participated in a 5th session). Your data will never be disseminated in a manner that is identifiable back to you, however, we do hope to use your data as part of the larger collective in understanding, on average, how and why people make judgments as to causality, and how brain responses react and anticipate these judgements.

What happens if I say *“Yes”, but I change my mind later?*

You can leave the research study at any time and no one will be upset by your decision.

If you decide to leave the research study, contact the investigator so that the investigator can stop the computer program dictating the presentation of auditory and visual stimuli, remove the EEG cap, and compensate you for your time.

Choosing not to be in this study or to stop being in this study will not result in any penalty to you or loss of benefit to which you are entitled. This means that your choice not to be in this study will not negatively affect your right to participate in future experiments and be compensated for the time you did spend with us. Deciding to terminate the study early will also not impact any present or future medical care, your academic standing as a student, or your present or future employment.

Will it cost me anything to participate in this research study?

- There will be no cost to you for any of the study activities or procedures.

What happens to the information collected for the research?

Efforts will be made to limit the use and disclosure of your personal information, including research study and medical records, to people who have a need to review this information. We cannot promise complete confidentiality. Organizations that may inspect and copy your information include the Institutional Review Board (IRB), the committee that provides ethical and regulatory oversight of research, and other representatives of this institution, including those that have responsibilities for monitoring or ensuring compliance.

We may publish the results of this research or sharing the resulting data. However, we will keep your name and other identifying information confidential.

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We will not be able to link your or responses to you, so we will not be able to provide you with personal feedback or referrals based on your responses to questions. If you are concerned about your mood, please refer to the attached resource referral information sheet. Please tell someone who can help right away. You can call also call the toll-free 24-hour National Suicide Prevention Lifeline at 1-800-273-TALK (1-800-273-8255) to talk to a counselor near you.

If we learn about any of the following, we may be required or permitted by law or policy to report this information to authorities:

- Current or within the preceding three years child or vulnerable adult abuse or neglect;
- Communicable, infectious or other diseases required to be reported under Minnesota's Reportable Disease Rule;
- Certain wounds or conditions required to be reported under other state or federal law; or
- Excessive use of alcohol or use of controlled substances for non-medical reasons during pregnancy.

Will I receive research test results?

NO

Most tests done on samples in research studies are only for research and have no clear meaning for health care. The investigator(s) will not contact you or share your individual test results.

What will be done with my data and specimens when this study is over?

We will use and may share data and/or specimens for future research. Data collected in this study may be made available for others to use, including for future research studies on similar or different topics, teaching, or other purposes. This could include for profit companies. Our goal is to make more research possible. We will not ask for your consent before using or sharing them. We will remove identifiers from your data and/or specimens, which means that nobody who works with them for future research will know who you are. Therefore, you will not receive any results or financial benefit from future research done on your specimens or data.

Will anyone besides the study team be at my consent meeting?

You may be informed by the study team that an auditor may observe your consent meeting. Observing the consent meeting is one way that the University of Minnesota makes sure that your rights as a research participant are protected. The auditor is there to observe the consent meeting, which will be carried out by the people on the study team. The auditor will not document any personal (e.g. name, date of birth) or confidential information about you. The auditor will not observe your consent meeting without your being informed ahead of time.

Whom do I contact if I have questions, concerns or feedback about my experience?

To reach the research team: Please see the "Investigator Contact Information" section at the beginning of this form.

To reach someone outside of the research team: This research has been reviewed and approved by an IRB within the Human Research Protections Program (HRPP). To share feedback privately with the HRPP about your research experience, call the Research Participants' Advocate Line at [612-625-1650](tel:612-625-1650) (Toll Free: 1-888-224-8636) or go to z.umn.edu/participants. You are encouraged to contact the HRPP if:

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- Your questions, concerns, or complaints are not being answered by the research team.
- You are having difficulty reaching the research team.
- You want to talk to someone besides the research team.
- You have questions about your rights as a research participant.
- You want to get information or provide feedback about this research.

Will I have a chance to provide feedback after the study is over?

The HRPP may ask you to complete a survey that asks about your experience as a research participant. You do not have to complete the survey if you do not want to. If you do choose to complete the survey, your responses will be anonymous.

If you are not asked to complete a survey, but you would like to share feedback, please contact the study team or the HRPP. See the “Investigator Contact Information” of this form for study team contact information and “Whom do I contact if I have questions, concerns or feedback about my experience?” of this form for HRPP contact information.

Will I be compensated for my participation?

If you agree to take part in this research study, we will pay you \$30/hour for your time and effort. This amount will be pro-rated if you decide to discontinue the study at any point. Additionally, if you participate in all 4 sessions of this experiment, you will be compensated with a bonus \$60. This bonus will be given at completion of the 4th session.

Payment will be made using a pre-paid debit card called Greenphire ClinCard. It works like a bank debit card. We will give you a debit card and each time you receive a payment for participation in this study, the money will be added to the card after each completed visit.

You may use this card at any store that accepts MasterCard or you can use a bank machine to remove cash. However, there may be fees drawn against the balance of the card for cash withdrawals (ATM use) and inactivity (no use for 6 months). We will give you the ClinCard Frequently Asked Questions information sheet that answers common questions about the debit card. You will also receive letters with additional information on how you can use this card and who to call if you have any questions. Be sure to read these letters, including the cardholder agreement, for details about fees.

The debit card system is administered by an outside company. The company, Greenphire, will be given your name, address, and birthdate and social security number. They will use this information as part of the payment process. Greenphire will not receive any information about your health status or the study in which you are

Optional Elements:

The following research activities are optional, meaning that you do not have to agree to them in order to participate in the research study. Please indicate your willingness to participate in these optional activities by placing your initials next to each activity.

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Yes,
I agree

No,
I disagree

The investigator may audio or video record me to aid with data analysis. The investigator will not share these recordings with anyone outside of the immediate study team.

The investigator may audio or video record me for use in scholarly presentations or publications. My identity may be shared as part of this activity, although the investigator will attempt to limit such identification. I understand the risks associated with such identification.

The investigator may contact me in the future to see whether I am interested in participating in other research studies by Dr. Noel.

Signature Block for Capable Adult:

Your signature documents your permission to take part in this research. You will be provided a copy of this signed document.

Signature of Participant

Date

Printed Name of Participant

Signature of Person Obtaining Consent

Date

Printed Name of Person Obtaining Consent

WITNESS STATEMENT:

The participant was unable to read or sign this consent form because of the following reason:

- ☐ The participant is unable to read the information
- ☐ The participant is visually impaired
- ☐ The participant is non-English speaking
- ☐ The participant is physically unable to sign the consent form. Please describe:

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☐ Other (*please specify*):

For the Consent of Non-English Speaking Participants when an Interpreter is Used:

As someone who understands both English and the language spoken by the subject, I represent that the English version of the consent form was presented orally to the subject in the subject's own language, and that the subject was given the opportunity to ask questions.

Signature of Interpreter

Date

Printed Name of Interpreter

OR:

Statement from a Non-Interpreter:

As someone who understands both English and the language spoken by the subject, I represent that the English version of the consent form was presented orally to the subject in the subject's own language, and that the subject was given the opportunity to ask questions.

Signature of Individual

Date

Printed Name of Individual