

PARTICIPANT INFORMATION LETTER

PROJECT TITLE: Cognition and the Brain

APPLICATION NUMBER: 2018-259H

PRINCIPAL INVESTIGATOR: Professor Richard Ryan

Dear Participant,

You are invited to participate in the research project described below.

What is the project about?

The research project investigates the biological processes (i.e., neural basis) that underlie tasks that require mental action and thought (i.e., cognitive tasks), particularly mental maths.

Who is undertaking the project?

This project is being conducted by Professor Richard Ryan and Dr. Stefano Di Domenico at the Institute for Positive Psychology and Education of the Australian Catholic University. Professor Ryan has over 40 years of research experience within the fields of motivational and clinical psychology. Dr. Di Domenico is a postdoctoral fellow with extensive research experience within the field of personality and social neuroscience.

What will I be asked to do?

You will be asked to answer a series of mental math questions (e.g., $7 + 14 = 21$, YES or NO) while having your brain activity recorded. These questions will be presented on a computer. You will also be asked to complete a set of questionnaires. Your brain activity will be monitored with functional near-infrared spectroscopy (fNIRS) and involves wearing a headband around your forehead. The questionnaires will ask you about your demographic background, your feelings during the computer task, and your personality. You will also be asked to complete a test of general cognitive ability.

Are there any risks associated with participating in this project?

There is minimal risk associated with participating in this study. The brain monitoring technology is completely safe and the questionnaires you will be asked to complete are regularly used in psychological research without negative consequences. In the past, some participants have reported mild discomfort with the headband around their forehead and/or with sitting in front of the computer during brain recording. We will make every effort to help you feel as comfortable as possible: You will be asked to help the experimenter place the headband comfortably and you are welcomed to adjust your seating to your liking. If you do experience any distress you can seek help from Beyondblue (Mental health support service) on 1300 22 4636 or Lifeline (A crises support service) on 13 11 14 or their online crisis support chat (www.lifeline.org.au). As a student of ACU it is also possible to access the ACU counselling services via the ACU Student Portal.

Can I withdraw from the study?

Participation in this study is completely voluntary. You do not have to participate. If you agree to participate, you can stop at any time. You will be compensated at a prorated amount (\$20.00 per half hour) in the event that you decide to discontinue at any point after the start of your participation. If you

withdraw from the study, your data will be identified through your assigned participant ID and data will be discarded.

How much time will the project take?

The experiment will take approximately 1 hour and 30 minutes to complete.

What are the benefits of the research project?

You will have the opportunity to observe, experience, and learn about the technology used in this research. The main benefit of this study however, is to help us gain understanding of human cognition. This research will shed light on the brain processes involved in mental maths using novel technology (fNIRS). We thus expect this research to be of wide interest to many different areas of psychology. You will also be compensated for your participation in this study with a \$60.00 WISH gift card (which can be used at Woolworths Group stores).

Will anyone else know the results of the project?

The results of this study may be reported in conference presentations and journal articles using aggregated data. We also believe in open science and will make anonymous data available for other researchers. Once published, averaged reports of the data will be made available on the Self-Determination Theory website (<http://selfdeterminationtheory.org/>).

Will I be able to find out the results of the project?

If you are interested in viewing the aggregated deidentified results of this study, please feel free to contact our researcher, Dr. Jasper Duineveld (see contact information below).

Who do I contact if I have questions about the project?

If you have questions at any time about the study or the procedures, you may contact our researcher:
Dr. Jasper Duineveld
Institute for Positive Psychology and Education
Australian Catholic University
Phone: +612 9701 4702
Email: jasper.duineveld@acu.edu.au

What if I have a complaint or any concerns?

The study has been reviewed by the Human Research Ethics Committee at Australian Catholic University (review number 2018-175H). If you have any complaints or concerns about the conduct of the project, you may write to the Manager of the Human Research Ethics Committee care of the Office of the Deputy Vice Chancellor (Research).

Manager, Ethics
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Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

Yours sincerely,
Professor Richard Ryan