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Expires On:6-Feb-21



Human Participant Ethics Protocol Submission CONFIDENTIAL

0 - Identification					
RIS Human Protocol Nui 38612	mber				
Protocol Title Examining the replicability	of research in psychology	_			
Protocol Type Investigator Submission	1				
Applicant Information					
Applicant Name Dr Kaitlyn Werner					
Rank / Position N/A		Department / Facu UTSC:Dept-Psycho	alty ology - UofT Scarborough		
Business Telephone 416-208-4826		Extension			
Email Address kaitlyn.werner@utoronto.co	ca				
Faculty Sponsor Informa	ition				
Sponsor Name Dr Michael Inzlicht					
Rank/Position		Department UTSC:Dept-Psycho	ology - UofT Scarborough		
Business Telephone 416-208-4826		Extension			
E-mail michael.inzlicht@utoronto	.ca				
Research Type					
Is this course based resea	rch? O Yes No				
Course Code	Title	Level	Session	Section	Start Date
					30-Nov-02
Division	Dep	partment	Unit He	ad Name	

Status: Delegated Review App

OFFICE OF RESEARCH ETHICS

Collaborators/Co-Investigators

Version:0002

Protocol #:17918

Sub Version:0000

Approved On:7-Feb-20

Name	Department	Email	Phone	Designation	Alt Contact
Michael Inzlicht	UTSC:Dept-Psychology	michael.inzlicht@utoronto.ca	416-208-4868	Co-Investigator & Alt	Х
Projected Project Dates					
Estimated Start Date 1-Dec-19		Estimated End Date 31-Dec-21			
2 - Location					
Location of the Research:	□ University of □	Foronto Other	Locations		
Administrative Approval/Co	onsent				
Administrative Approval/Cons	sent Needed: Y	es No			
Community Based Particatory	Research Project? Y	es 📵 No			
Other Ethic Boards Approv	al(s)				
Another Institution or Site invo	olved?	es No			
3 - Agreements and R	eviews				
Funding					
Project Funded? Yes	es 🕟 No				
Explain why no funding is re-	quired				
Have not applied for funding					
Agreements					
Funding/non-funding Agreem	ent in Place? Ye	es 💿 No			
Any Team Member Declared	Conflict of Interest? Ye	es 💿 No			
Reviews					
This research has gone	under scholarly review by thes	sis committee, departmental review	committee, peer review	committee, or some other	equivalent
		tee, supervisor, CIHR, SSHRC, OH			
This review was spe		Practices in Psychological Science (AMPPS). This project is	part of a registered report,	which has rece
The review was spe	·				
	der scholarly review prior to fur	nding			
This review will not go u	ınder a scholarly review				
4 - Potential Conflicts					
Conflict of Interest					
Will researchers, research tea	am members, or immediate fan	nily members receive any personal	benefit? Yes	No	
	,	Protocol #:17918			
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Restrictions on Information
Are there any restrictions regarding access to, or disclosure of information (during or after closure)? Yes • No
Researcher Relationships
Are there any pre-existing relationships between the researchers and the researched? Yes No
Collaborative Decision Making
Is this a community based project - i.e.: a collaboration between the university and a community group? Yes No
5 - Project Details
Summary

Rationale

Describe the purpose and scholarly rationale for the project

Psychological studies have received extensive criticism in recent years for a lack of reproducibility (Open Science Collaboration, 2015). Potentially problematic practices include selective reporting, selective analysis, and lack of direct replications. To address these issues, many laboratories across the globe have begun conducting direct replications of previous findings using a mult-lab approach.

In these instances, a main group of researchers writes a registered report (i.e., a manuscript proposal including the introduction and planned methods), which is then evaluated through traditional peer review at the designated journal. Once approved (including the specific study methods), the lead researchers receive an "in-principle" acceptance meaning that as long as the research is conducted as described in the initial manuscript, it will receive a full acceptance regardless of the results (e.g., even if the findings are null or counterintuitive in some way). In the context of multi-lab studies, after receiving this initial acceptance the lead researchers put out a call and labs around the world can sign up to conduct their own independent replication study that will eventually contribute to the broader manuscript. This is where our studies come in (i.e., we are one of the labs to sign up to conduct an independent replication). Thus, even though the content of the specific studies in this protocol may vary, this procedure structure will be the same (i.e., there will always be an already approved pre-registeration or registered report describing the methods and rationale in great detail, thus making the studies easier to evaluate in a similar manner).

For the specific studies described in this protocol, below are links to the registered reports (including the journal-approved rationale and methods):

- Study 1: https://osf.io/69gxp/
- Study 2: https://psyarxiv.com/zeux9/

References:

Open Science Collaboration. (2015). Estimating the reproducibility of psychological science. Science, 349(6251). doi:10.1126/science.aac4716

Methods

Describe formal/informal procedures to be used

Study 1: Stereotype threat and math performance (Cognitive processes of problem-solving skills)

Research suggests that stereotype threat might lower mathematics test performance among female test takers. However, many studies used suboptimal analyses; the literature might be subject to publication bias; and the cross-cultural generalizability of the effect remains unknown. To address these concerns, we will conduct a direct replication of Johns, Schmader, and Martens (2005), who found that threatened women perform worse than men, and that this effect can be alleviated by altering test instructions.

Participants will be randomly assigned to one of the three experimental conditions: Half of the participants will be assigned to the stereotype threat condition and the other half will be equally distributed over the teaching-intervention and the problem-solving conditions. Participants will be tested in groups and so all participants within the same experimental group will be in the same condition. Participants will complete this study in groups of 5-10 at a time. The research assistant will welcome the participants, give a short introduction, and have them complete a consent form. Upon agreeing to participate, the research assistant will play an audiotape of a male voice out loud describing the instructions of the task. The clip includes the test description of either the problem-solving, the teaching-intervention, or the stereotype threat condition (transcripts and a full protocol are available in the attached supplemental materials). After the audio descriptions, the research assistant will repeat the instructions and ask whether there are any questions about the task. Participants in the stereotype threatand teaching-intervention condition will first provide some demographic information (i.e., gender) after the instructions, but indicate their ethnicity after the mathematics task. Participants in the problem-solving condition will provide this information after the mathematics task, to avoid any stereotype threat effects that may result from indicating ones gender or minority/majority status. Participants will then have 20 minutes to complete the mathematics test (either marked as a problem-solving task for the participants in the problem-solving condition or as a mathematics task in the other conditions). Participants will be allowed to use scrap paper, but no calculator. After 20 minutes, the research assistant will ask the participants to close the task booklets and to start working on the remaining questionnaires, which consists of two manipulation checks, an anxiety scale, demographic information (for the problem-solving group), the Domain Identification Questionnaire, the Gender Identification Questionnaire, a measure of stereotype awareness, and general questions concerning the experiment. Finally, the participants will be thanked, compensated, and debriefed. Participants will be explicitly instructed to not discuss the true nature of the study with their peers.

Study 2: True knowledge and luck when making decisions (Language and Decision Making)

According to the Justified True Belief (JTB) account of knowledge, a person can only truly know something if they have a belief that is both justified and true (i.e., knowledge is justified true belief). This account was challenged by Gettier (1963), who argued that JTB does not account for certain situations, later called Gettier type cases, wherein a person is justified for believing something to be true and yet would probably not be said to have knowledge because they only got the right answer because of luck. Lay people's intuitions may lead them to say that this sort of lucky justified true belief is not a case of genuine knowledge (referred to as Gettier intuitions). While some research has shown that people may generally demonstrate Gettier intuitions (e.g., Machery et al., 2015), Turri and colleagues' (2015) Experiment 1 demonstrated that people may not use this intuition for all Gettier type cases. We aim to provide a robust estimate of the Gettier intuition effect size by closely replicating this experiment while conceptually replicating it across similar stimuli.

This study will be conducted online. Upon signing up for the study via the Department of Psychology SONA system, participants will be asked to read the consent form. Once they have provided their informed consent, participants will be presented with three brief vignettes describing different scenarios where a hypothetical person makes an attribution about some aspect of their environment and it's the participants' job to decide whether this attribution is based on true

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knowledge or luck (full details of these vignettes, see materials in the attached appendices). Each vignette will be randomly assigned to a belief condition and counter-balanced so that each participant experiences all three vignettes ("Darrel", "Gerald", and "Emma") and all three belief conditions once (knowledge control, Gettier case, and ignorance control). Participants will be directed to their randomly assigned reading condition for each vignette. After participants have read each assigned vignette, they will then be asked to respond to several questions before moving on to the next vignette. As in Turri et al. (2015), participants will first respond to a knowledge attribution question followed by comprehension question to control for understanding. Then, participants will answer a question about whether it was reasonable or unreasonable for the hypothetical person to believe what they believed (Turri et al., 2015). For measuring these two dependent variables and the comprehension control variable, we will use the same procedure used in the original study (Turri et al., 2015). That is, participants will not be allowed to go back to a previous page and change their answer, and questions will always be asked in the same order (knowledge/ comprehension/ reasonableness) for each vignette. After reading through each of the three vignettes, participants will complete a series of demographic questions.

Copies of questionnaires, interview guided and/or other instruments used

Document Title	Document Date
Study 1 Materials - Math Tests (All versions)	2019-11-20
Study 1 Materials - Surveys (All versions)	2019-11-20
Study 1 Materials - Task Instructions (scripts for audioclips)	2019-11-20
Study 2 Materials - Survey	2019-11-20

Clinical Trials
Is this a clinical trial? Yes • No
6 - Participants and Data
Participants and/or Data
What is the anticipated sample size of number of participants in the study? 200
Describe the participants to be recruited, or the individuals about whom personally identifiable information will be collected. List the inclusion and exclusion criteria. Where the research involves extraction or collection personally identifiable information, please describe where the information will be obtained, what it w include, and how permission to access said information is being sought.
Study 1: We propose to collect 200 participants for this study. In order to participate, participants should be between the ages of 18-25 and must have enrolled in or completed at least one mathematics, research methodology, or statistics course. Study 2: We propose to collect 100-150 participants for this study. There are no inclusions/exclusion criteria - anyone who is eligible to participate in the Department of Psychology SONA pool is free to sign up and participate.
Is there any group or individual-level vulnerability related to the research that needs to be mitigated (for example, difficulty understanding consent, history of exploitation by researchers, or power differential between the researcher and the potential participant)?
Recruitment

Is there recruitment of participant?

Yes

Recruitment details including how, from where, and by whom

Participants will be recruited through the Department of Psychology subject pool, as well as through advertisements made throughout the campus (e.g., flyers, classroom announcements in relevant classes [e.g., math classes]). Since neither the PI or the advisor will not be teaching the Introduction to Psychology class (the class from which students in the participant pool are recruited), we will have no relation (including teacher) with any of the potential participants.

Is participant observation used? Yes No

Will translation materials be used/required? Yes

Attach copies of all recruitment posters, flyers, letters, email text, or telephone scripts

Document Title	Document Date
Study 1 Sona Recruitment Ad	2019-11-27
Study 2 - SONA ad	2019-11-27

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Protocol	#:1	791	l৪

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Compensation	
Will the participants receive compensation? Yes No Type of Compensation	
Financial	
☐ In-kind	
Course credit	
Compensation Justification Details Study 1 will last approximately 45-60 minutes. Accordingly, participants from the subject pool will either receive 1.0 course credit (as per the department policy) and non-subject pool participants will receive \$10 for their time.	
Is there a withdrawal clause in the research procedure? Yes No	
Is compensation affected when a participant withdraws?	_
Participants will receive full compensation without penalty if they decide to withdraw. This is explicitly stated in the consent forms.	
7 - Investigator Experience	
	_
Investigator Experience with this type of research	
Please provide a brief description of the previous experience for this type of research by the applicant, the research team, and any persons who will have direct contact with the applicants. If there is no previous experience, how will the applicant and research team be prepared?	
1. The supervisor of this laboratory, Michael Inzlicht, has been conducting this type of research for over 20 years, with no complaints of any of the procedures. The postdoc, Kaitlyn Werner, has also been conducting this type of research for over 6 years, with no complaints of any of the procedures. 2 and 3. All research team members (e.g., research assistants) will be fully trained on the procedures before conducting the experiment. All procedures and task paradigms will first be tried with consenting and fully-informed members of the research team acting in the role of the subject.	
Are community members collecting and/or analyzing data? Yes • No	
8 - Possible Risks and Benefits	
Possible Risks	
Potential Risk Details:	
Physical Risks (Yes (No	
Psychological/emotional Risks Yes No	
Social Risk Yes • No	
Legal Risk Yes No	
Potential Benefits	
Benefit Description These studies will provide participants the opportunity to view, firsthand, the type of research conducted by social psychologists. Those who choose to participate will have the opportunity to observe and contribute to social psychology research. Participants will also have an educational experience that will	
9 - Consent	
Consent Process Details	_
Participants will give informed consent prior to completing the study (see uploaded documents, Study 1 - Consent Form and Study 2 - Consent Form)	_
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Uploaded letter/consent form(s)

Document Title	Document Date
Study 1 Consent Form - Updated	2020-01-21
Study 2 Consent Form - Updated	2020-01-21

Study i Consent Form - Opdated	2020-01-21		
Study 2 Consent Form - Updated	2020-01-21		
Is there additional documentation regarding consent such as screening materials	s, introductory letters etc.	: O Yes No	
Uploaded letter/consent form(s)			
Will any information collected in the screening process - prior to full informed con retained for those who are later excluded or refuse to participate in the study?	sent to participate in the	study - be Yes No	
Is the research taking place within a community or organization which requires for involvement of the individual participants	ormal consent be sought	prior to the Yes No	
Are any participants not capable (e.g.: children) of giving competent consent?			
10 - Debriefing and Dissemination			
DeBrief			
Will deception or intentional non disclosure be used? Yes No			
Deception Justification Details			
Intentional non-disclosure will be used because participants' knowledge of the p diminish the quality of the results. We will thoroughly debrief our participants after is because we did not want to bias participants' responses and instead have the debriefing statement (for both Study 1 and Study 2), as well as include a more the	er the study is complete. em respond as naturally a	The reason for non-disclosure at the start of the study as possible. We provide this explanation in the	
Will a written debrief be used? Yes No			
Written Debrief Documents			
Document Title	Document Date		
Study 1 Debriefing Form - Updated	2020-01-21		
Study 2 Debriefing Form - Updated	2020-01-21		
Do participants/communities have the right to withdraw their data following the de	ebrief? • Yes	No	
Withdrawal Process Details			
Study 1. The informed consent and debrief forms state that participants are free to withdralso be told that they can withdraw immediately following debriefing. In such an Study 2. The informed consent and debrief forms state that participants are free to withdraw because this is an online study, participants are instructed in the consent form to collect any personally identifying information within the survey, we will not be ab	event, any responses wi raw at any time during the o stop the survey and clo	Il be removed and subsequently destroyed. e study, and will still receive their course credit. see the web browser. However, because we do not	
Information Feed Back Details following completion of a participants participation	,		
Participants will be given a written (Study 1) or electronic (Study 2) debriefing. Pinformation.	· · ·	vited to ask questions or email the PI for additional	
Procedural details which allow participants to withdraw from the project Participants will be explicitly told in the consent and debriefing forms that that th negative consequences for withdrawing from the study). If they withdraw during their incomplete data will be discarded. If they do not decline by informing the re	the study, participants w	ill be asked if we can keep their data; if they decline,	
Not Applicable			
What happens to a participants data and any known consequences related to the removal of said participant			
Should a participant wish to withdraw and inform the research team at any point	t up until after the debrief	ing, their data will be discarded. There are no	

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consequences for withdrawing from the study - participants will still receive full compensation.
Not Applicable
List reasons why a participant can not withdraw from the project (either at all or after a certain period of time)
Study 1. N/A - Participants are free to withdraw from the study at any time.
Study 2. Participants are able to withdraw at any point throughout the online study, however, because data collection is online and we do not collect any personally identifying information, we will be unable to trace and remove individual responses. This is explicitly stated in the informed consent (see "Withdrawal Procedu section of Study 2 - Consent Form).
Not Applicable
11 - Confidentiality and Privacy
Confidentiality
Is the data confidential? Yes No
Will the confidentiality of the participants and/or informants be protected? Ves No
List confidentiality protection procedures
All data and question responses will remain confidential. Participants will be instructed not to put their names on any questionnaires, and their digital respons will never be associated with their name. When reporting the results of the studies, they will be only reported as group means, standard deviations, and correlations, and other aggregate measures. No individual responses will be reported. In online versions of data, all personally identifying information will be removed.
Are there any limitations on the protection of participant confidentiality? Yes No
Is participant anonymity/confidentiality not applicable to this research project? Yes No
Data Protection
Describe how the data (including written records, video/audio recordings, artifacts and questionnaires) will be protected during the conduct of the research ar subsequent dissemination of results Any hard copy materials (Study 1) will be kept in a locked research room, where only trained research assistants and the supervising professor have access.
Original copies will be destroyed after 7 years. Any electronic data (Study 1 and Study 2) will not contain any personally identifying information and will be stored indefinitely by the researchers and will be uploaded to a online public data repository (i.e., the Open Science Framework, osf.io).
Explain for how long, where and what format (identifiable, de-identified) data will be retained. Provide details of their destruction and/or continued storage. Provide a justification if you intend to store identifiable data for an indefinite length of time. If regulatory requirements for data retention exists, please explain.
Original copies will be discretely destroyed after 7 years, as recommended by the American Psychological Association. However, some data (excluding all personal information) will have been uploaded to the Open Science Framework (https://osf.io/), and thus will be available for an indefinite amount of time. This necessary to facilitate the open-science movement, where researchers can check and re-analyze data analyses from other researchers.
Will the data be shared with other researchers or users? Yes No
Please describe how and where the data will be stored and any restrictions that will be made regarding access. How will participant consent be obtained? If do is to be made open access, please describe how and where they will be maintained.
Data (with all personal identifying information removed, including 'date of participation') will be uploaded online to the Open Science Framework (https://osf.ic where it can be downloaded by other researchers or members of the scientific community in order to confirm that our own analyses were correct and open, a well as to potentially conduct secondary data analyses with permission of the authors. There is a separate consent section (separate signature) for participan to sign to release their data for this purpose. If participants choose to participate in the study but do not release their data, then their participant identification code will be noted and their data will be excluded from the version of the data uploaded to the Open Science Framework.
12 - Level of Risk and Research Ethics Board
Level of Risk for the Project
Group Vulnerability Low
Passage Piels Lau
Research Risk Low
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Risk Level 1	
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Explanation/Justification

Explanation/Justification detail for the group vulnerabilty and research risk listed above

Group vulnerability is low because the populations studied comprise healthy male and female university students. Research risk is also low because participants will complete basic surveys and math problems (Study 1) or about mundane hypothetical scenarios (Study 2). For Study 1, the surveys are about their everyday experiences and the math problems are part of the standard university experience (especially since we are recruiting participants with experience in math-based courses). However, because the task may elicit feelings of anxiety among some participants, we have included a section describing the resources available to particpants in the debriefing statement (see attached). Specifically, participants will be repeatedly encouraged throughout the study that they can withdraw at any time. In the debriefing, anyone who experiences any notable feelings of anxiety are encouraged to notify the research assistant who can guide the participant to the appropriate resources (e.g., contacting the lead researcher or health and wellness centre). The contact information for the university health and wellness centre is provided in the event that participants want to contact them after they leave the study session. For Study 2, participants are merely asked to evaluate information about mundane hypothetical scenarios that do not relate to the participants' in anyway (and thus are not designed to elicit any personal or distressing responses).

esearc		

REB Associated with this project | Social Sciences, Humanities & Education

13 - Application Documents Summary

Uploaded Documents

Document Title	Document Date
Response to revisions	2020-01-21
Study 1 Materials - Math Tests (All versions)	2019-11-20
Study 1 Materials - Surveys (All versions)	2019-11-20
Study 1 Materials - Task Instructions (scripts for audioclips)	2019-11-20
Study 2 Materials - Survey	2019-11-20
Study 1 Sona Recruitment Ad	2019-11-27
Study 2 - SONA ad	2019-11-27
Study 1 Consent Form - Updated	2020-01-21
Study 2 Consent Form - Updated	2020-01-21
Study 1 Debriefing Form - Updated	2020-01-21
Study 2 Debriefing Form - Updated	2020-01-21

14 - Applicant Undertaking

I confirm that I am aware of, understand, and will comply with all relevant laws governing the collection and use of personal identifiable information is research. I understand that for research involving extraction or collection of personally identifiable information, provincial, federal, and/or international laws may apply and that any apparent mishandling of said personally identifiable information, must be reported to the office of research ethics.

As the Principal Investigator of the project, I confirm that I will ensure that all procedures performed in accordance with all relevant university, provincial, national, and/or international policies and regulations that govern research with human participants. I understand that if there is any significant deviation in the project as originally approved, I must submit an amendment to the Research Ethics Board for approval prior to implementing any change.

I have read and agree to the above conditions

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RIS Protocol

Number: 38612

Approval Date: 7-Feb-20

PI Name: Dr Kaitlyn Werner

Division Name:

Dear Dr Kaitlyn Werner:

Re: Your research protocol application entitled, "Examining the replicability of research in psychology"

The Social Sciences, Humanities & Education REB has conducted a Delegated review of your application and has granted approval to the attached protocol for the period 2020-02-07 to 2021-02-06.

Please note that this approval only applies to the use of human participants. Other approvals may be needed.

Please be reminded of the following points:

- An **Amendment** must be submitted to the REB for any proposed changes to the approved protocol. The amended protocol must be reviewed and approved by the REB prior to implementation of the changes.
- An annual Renewal must be submitted for ongoing research. Renewals should be submitted between 15 and 30 days prior to the current expiry date.
- A Protocol Deviation Report (PDR) should be submitted when there is any departure from the REB-approved
 ethics review application form that has occurred without prior approval from the REB (e.g., changes to the study
 procedures, consent process, data protection measures). The submission of this form does not necessarily indicate
 wrong-doing; however follow-up procedures may be required.
- An **Adverse Events Report (AER)** must be submitted when adverse or unanticipated events occur to participants in the course of the research process.
- A Protocol Completion Report (PCR) is required when research using the protocol has been completed. For
 ongoing research, a PCR on the protocol will be required after 7 years, (Original and 6 Renewals). A continuation of
 work beyond 7 years will require the creation of a new protocol.
- If your research is funded by a third party, please contact the assigned Research Funding Officer in Research Services to ensure that your funds are released.

Best wishes for the successful completion of your research.

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