ILG research Bursary Proforma

April 2015.

(NB all boxes expand) (See pages 3 & 4 for instructions)

1. **Project Title (maximum 10 words)**

Information discernment and psychophysiological well-being in response to misinformed stigmatization

2. **Principal Investigator**

Dr Geoff Walton geoff.walton@northumbria.ac.uk (Manchester Metropolitan University from August 1st 2016)

3. **Co-Investigator(s)**

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4. **Partner(s)**
5. **Summary of the project – If the project is funded ILG will use this in any publicity material or announcements. (Maximum 300 words)**

It is not known to what extent mis-information (e.g., religious extremism) effects young peoples' (aged 16-24) well-being (including psychophysiological responses) and to what extent information discernment (i.e., the ability to make complex judgments about information) is a protecting factor against ill-being. People aged 16-24 are the most likely users of the Internet (ONS, 2015) and therefore are exposed to mis-information and as a result may develop ill-being, especially via social media use (Booker, 2016).

This collaborative project brings together experts in information literacy, user experience, applied psychology and psychophysiological stress reactivity. The team believes that, information discernment moderates the relationship between mis-information and cardiovascular reactivity in stressful social situation(s). This research has wide implications for policy makers, educationalists and governments, indicating for the first time that information literacy has a social and physical, as well as educational benefit and that it should be added to preventative measures against mis-information.

Here, psychophysiological well-being is determined using challenge and threat cardiovascular reactivity, where challenge reactivity (driven by Sympathetic Adreno-Medullary activation) indicates an adaptive reaction to stress, and threat (driven by Pituitary Adreno-Cortical activation) indicates a maladaptive reaction to stress

(Blascovich & Mendes, 2000). We will break new research ground and make a substantial contribution to the extant literature by exploring how mis-information about religious extremism may affect young peoples' cardiovascular reactivity, and subsequent cognitive functioning. For the first time the extent to which information discernment moderates challenge and threat reactivity will also be investigated.

There are two research questions:

1: To what extent does information discernment (an essential component of information literacy) moderate the effects of mis-information (stigmatized vs. non-stigmatized) on psychophysiological reactivity?

2: To what extent does psychophysiological reactivity influence performance and interpersonal interaction in a collaborative pressurized attention task?

6. **Risk assessment – Please state any risks you envisage on a scale of 1 to 5 with 1 being low and 5 being a high risk**

This research involves an element of deception, which we have rated as level 2. Specifically, we are providing participants with mis-information about religious extremism to elicit a stressor based on stigmatization. Although this research involves deception, the project will go through full ethical approval at all collaborating universities to ensure that risks to participants are minimized. This will involve a full debrief to participants to ensure that they fully understand all aspects of the project and why deception is involved. In addition, all mis-information provided will be corrected so that participants leave the research project with clarification on the manipulations used in the study.
(Risk level 2).

This project also involves the presentation of a psychological stressor to participants through a stigmatized confederate. This confederate will be perceived to be religious with whom individual participants will complete a task in a controlled experimental environment. The use of a confederate is typical of stigmatization research (Blascovich et al, 2000; Mendes et al, 2001) and the stressor is a necessary aspect of this project to enable exploration of the two research questions. A full debrief of the experiment (including the stressor and use of the confederate) will be carried out, where full disclosure will be given to all participants explaining why the deception was necessary and how the findings will be used and disseminated.
(Risk level 3).

The attachment of the cardiovascular recording equipment and collection of cardiovascular data is unlikely to yield any risks so we have rated this as level 1. The recording equipment is non-invasive.
(Risk level 1).

The anonymity of the participants will not be compromised, as we will be only capturing eye movement, such as fixations and gaze plots and not facial expressions (Risk level 1).

The retrospective 'think aloud' protocol as an indicator of information discernment is unlikely to yield any risks so we have rated this as level 1. Participants will watch their

eye movements and asked about their feeling in given situations to capture and clarify judgments about information.
(Risk level 1).

Note: please see section 10 for definitions of the technical terms used within the project.

7. Stakeholders

The stakeholders are;

Young People (aged 16-24)
This project will facilitate awareness of mis-information and the risks this poses to young people between the ages of 16 and 24 because they are the group most affected by these issues.

Information Professionals
Information professionals have the grounding in information discernment and have the expertise to raise awareness and devise educational tools to support this group.

The General Public
This research will be of use to parents enabling them to recognize the effect of stigmatization and misinformation on family well-being.

Educators (teachers and academics)
This research can more broadly be used to educate the public about stigmatization and its ill effects. This can be done at a government (local and national) level and by educators of young people.

Policy Makers
Policy makers can use the evidence generated to advise on the strategic direction for young peoples' well-being in these different information environments.

Health Professionals
Health professionals will be interested in this research because this project explores whether misinformation links to cardiovascular responses, which could lead to some health care recommendations.

Employers
This research would be of interest to employers to increase awareness regarding the effects of stigmatization on well-being and inter-racial collaboration in the work place.

8. Aims and Objectives

Aims:

This project seeks to understand how mis-information regarding religious extremism influences psychophysiological reactivity and the subsequent interaction between participants and stigmatized (or un-stigmatized) confederates. Further, the link between mis-information and psychophysiological reactivity and this is moderated by information discernment will also be explored (Walton & Hepworth, 2013; Walton, 2013; 2015, Walton & Cleland 2014; 2016 in press). In this study, we are misinforming participants about religious extremism to stigmatize religious people. We will use a

stigmatized confederate (a perceived religious person) to act as a stressor to participants, who has been described to participants with negative stereotypical attributes (e.g., holds religious extremist viewpoints).

We aim to examine how religious stigmatization (introduced via misinformation) influences challenge and threat psychophysiological reactivity and subsequent cognitive and interpersonal function, and to what extent this relationship is moderated by information discernment.

Objectives:

1. To determine whether information discernment (an essential component of information literacy) moderates the effects of mis-information (stigmatized vs. non-stigmatized) on psychophysiological reactivity.

2. To determine whether psychophysiological reactivity influences performance and interpersonal interaction in a collaborative pressurized attention task.

9. Milestones

	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Literature Review	x	x	x									
Recruit Participants	x	x	x									
Pilot			X	X	X							
Main Experiment						x	x	x	X			
Analysis										X	X	
Final report											x	X
Dissemination	x	x	x	x	x	x	x	x	x	x	x	x
Research group		x			x			x			X	
Steering group			x			x			x			x

10. Description (Maximum 1,000 words)

Context
This is a small pilot to furnish a proof of concept to underpin a much larger study across three regions, the North East, Greater Manchester and the North West Midlands.

Methodology

Participants
In-line with sample sizes typical in stigmatization research (e.g., Mendes et al., 2001) the team will recruit 50 male participants between the ages of 16 and 24. The use of males only in this research is necessary due to differences in how males and females interact with digital media (Case, 2012); that is, a homogenous sample is required for this research.

Design
The project will use a between-groups design with the use of two groups. Each group (Group 1 = non-stigmatized, Group 2 = stigmatized) will be allocated participants using systematic randomization.

Participant Screening
The study will commence with the pre-screening of participants for demographic information (e.g., age), religious preference, strength of religiosity, and to what extent they use digital media. Participants will be excluded if they have strong religiosity or they do not use digital media. Levels of information discernment will also be determined using a quantitative questionnaire based upon the work of Andretta (2005) and Walton & Hepworth (2013). This measure will also be used as a moderator during data analysis.

Data Collection
Phase one: Participant orientation, familiarization, and calibration of data collection equipment. Using elements from the world café approach (a Participatory Research in Action method [PRA]; Tavares et al. 2011) a relaxed and welcoming environment for participants will be created.
(10mins).

Phase two: Here participants are systematically, randomly, and blindly allocated into group A or B. Next participants in Group A will complete an on-line reading task containing mis-information that stigmatizes religiosity. In contrast, participants in Group B will be given an on-line reading task which has no stigma attached regarding religiosity. Both tasks have the same template, duration, and format with the only difference being stigma vs. non-stigma written and visual content. This information will not be the main focus of the material presented to participants, but will form only part of it. In essence, this is to protect against participant suspicion and associated biased responses. The eye-tracking equipment will be calibrated and data will be gathered from the participants' eye movements (cascades and fixations). Participants will be asked to a complete a written summary of the task(s) and this process will act as a manipulation check (e.g., have they interpreted the different information in the direction intended by the research team) (Rayner, 1998).
(30mins).

Phase three: The measurement of baseline cardiovascular responses will take place in this phase. Here, participants are at rest whilst seated and connected to the Finometer to enable baseline monitoring for 10 minutes. Next, a confederate enters the laboratory and audio instructions inform the participants that they are to work with a confederate (whose artificially created persona is religious). The participants are told they have to complete a pressured attention task with the confederate. The stressor is in having to

work with someone who has just been stigmatized. We hypothesize that Group A will view the interactive task as a threat (and thus show threat Cardio-vascular reactivity; change from baseline) and have poorer attentional control, whereas Group B would view the task as a challenge (and thus, show challenge Cardio-vascular reactivity; change from baseline) and have better attentional control. Cardio-vascular responses will be measured using a Finometer, which provides markers that enable the objective assessment of challenge and threat responses; namely, cardiac output (CO) and total peripheral resistance (TPR). An underlining aim of this experiment is to measure ways in which information is interpreted and whether stress is a determining factor in levels of information discernment.
(20mins).

Phase four: In this phase each participant will be asked to perform a 'retrospective' thinking aloud task (Hyrskykari et al, 2008) and express their experience(s) while watching a playback of the phase two task. The gaze replay is intended to operate as a memory cue, helping the participants to remember what they were thinking while completing the pressurized attention task. A full debrief of the experiment will then be carried out, where full disclosure will be given to all participants explaining why the deception (i.e., stigma vs. non-stigma instructions and confederate) was necessary and how data will be used and disseminated.
(20mins).

Data Analysis
We will run a between groups Multivariate Analysis of Covariance (MANCOVA) to assess the differences in cardiovascular reactivity (CO, TPR), gaze behaviour (including fixations) and cognitive function between Group A and Group B. In addition, information discernment will be included as a covariate to enable us to explore its moderating effects on cardiovascular reactivity and cognitive function. Further, content analysis will be used to analyze qualitative differences in retrospective think aloud data between Groups A and B.

11. Dissemination strategy (maximum 500 words)

A blog and Twitter account will be set up at the outset of the project. Regular weekly updates on project progress will be posted throughout the lifetime of the project. The blog will contain all information about the project and will update with findings, analysis and conclusions as they become ready.

Professional and research conferences will be targeted for dissemination (see outputs for specific conferences).

A range of high quality peer reviewed journals will be targeted (see Outputs for specific titles).

At the end of the project all individual research findings will be expressed in 140 characters and disseminated via Twitter.

Following completion of the project press releases will be developed for distribution via universities marketing departments.

Produce an accessible project summary (e.g., a leaflet) for a range of audiences including schools, local authorities, students unions, and the media.

12. Outputs

Following completion of the project we will have created a new methodology and protocols for understanding the psychophysiological effects of information discernment.

Two Peer reviewed publications in the following journals:
Personality and Social Psychology (impact factor 5)
Journal of Information Literacy

Professional journals:
CILIP Update short report
CHI Computer Human Interaction short report
The Psychologist (The British Psychological Society's member's magazine)

Research papers presented at:
BPS annual conference 2018
Librarians' Information Literacy Annual Conference (LILAC) 2017
Information Seeking in Context (ISIC) conference 2018
European Conference on information Literacy (ECIL) 2017

Data from this project will underpin a larger collaborative and inter-disciplinary research grant application by the team to one of the following; Wellcome Trust, Esmee Fairbairn, AHRC or ESRC.

13. Evaluation strategy

The project will be evaluated through regular and continuous evaluation by the project team (including research assistant) through face-to-face and Skype meetings.

A steering group will be created and will be comprised of the research team plus two independent senior researchers not involved in the project to act as critical friends. One person will be drawn from Sport Psychology and the other from Information Sciences to ensure that the project is robust and remains focused.

14. Financial breakdown

Research Assistant 1 – 250 hours (Experiment, blog and training)	£3,877.50
Research Assistant 2 – 75hrs (confederate)	£ 827.25
RA 1 travel 10 trips Stoke – Manchester	£ 176.00
RA2 travel 10 trips Stoke – Manchester	£ 176.00
Matt Pointon travel 4 trips (Newcastle/Stoke, Newcastle/Manchester)	£ 343.20
Conference fees , travel and accommodation X4	£4,000.00
Shopping voucher prize as inducements to participate	£ 200.00
Misc travel	£ 400.00
Total	**£9,999.95**