MASTER INDEX PAGES

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1 Principal Investigator Agreement for Exempt Research

Principal Investigator Agreement:

1. I agree to follow this protocol version as approved by the IRBs/ERCs.

2. I will conduct the study in accordance with applicable IRB/ERC requirements, Federal regulations, and state and local laws to maintain the protection of the rights and welfare of study participants.

3. I certify that I, and the study staff, have received the requisite training to conduct this research protocol.

4. I will not modify the protocol without first obtaining an IRB/ERC approved amendment and new protocol version unless it is necessary to protect the health and welfare of study participants.

5. I, or the study staff, do not have access to the code linking a participant and his/her specimen (or data) and will make no attempts to individually identify a study participant. Should I, or the study staff, gain access to the code, I will promptly notify the IRB(s)/ERC(s).

6. I will ensure that the data (and/or specimens) are maintained in accordance with the data (and/or specimen) disposition outlined in the protocol. Any modifications to this plan should first be reviewed and approved by the applicable IRBs/ERCs.

7. I will promptly report changes to the research or unanticipated problems to the WRAIR IRB immediately via the WRAIR Human Subjects Protection Branch at (301) 319-9940 (during duty hours) or to the usarmy.detrick.medcom-wrair.mbx.hspb@mail.mil and submit a written report within 10 working days of knowledge of the event.

8. I will prepare continuing review reports at an interval established by the IRB/ERC, and a study closure report when all research activities are completed.

9. I will immediately report to the WRAIR Human Subjects Protection Branch knowledge of any pending compliance inspection by any outside governmental agency.

10. I agree to maintain adequate and accurate records in accordance with IRB policies, Federal, state and local laws and regulations.

_____ _____

Printed Name/Signature Date

Table of Contents

Abbreviations Used in the Protocol and Study:

- AI: Associate Investigator
- ANOVA: Analysis of variance
- ANCOVA: Analysis of covariance
- AR: Army Regulation
- ARL: Army Research Laboratory
- AWS: Amazon Web Services
- CAC: Common Access Card
- CMPN: Center for Military Psychiatry and Neurosciences
- CR: Continuing Review
- CSV: Comma Separated Values
- DoD: Department of Defense
- FBI: Federal Bureau of Investigation
- FedRAMP: Federal Risk and Authorization Management Program
- GLM: General Linear Model
- HAB: Hostile Attribution Bias
- HBMT: Hostile Bias Modification Training
- HSPB: Human Subjects Protection Office
- IA: Information Assurance
- ICD: Informed Consent Document
- IRB: Institutional Review Board
- LSD: Least Significant Difference
- MCAR: Missing Completely at Random
- MOMRP: Military Operational Medicine Research Program
- MPB: Military Psychiatry Branch
- MRMC: Medical Research and Material Command
- MS: millisecond
- MTF: Medical treatment facilities
- MTurk: Amazon Mechanical Turk
- OPSEC: Operational Security
- ORP: Office of Research Protections
- PI: Principal Investigator
- PII: Personally identifiable information
- RA: Research assistant
- SOP: Standard operating procedure
- SPSS: Statistical Package for the Social Sciences
- SSL: Secure Sockets Layer
- USA: United States of America
- USAMRMC: U.S. Army Medical Research and Materiel Command
- WRAIR: Walter Reed Army Institute of Research

2 PRÉCIS

Aggression refers to causing harm to someone who is motivated to avoid that harm (Anderson & Bushman, 2002). One key predictor of aggression is the extent to which the victim believes that the provocateur acted in an intentionally hostile manner (e.g., being shoved on purpose) versus not intending to be hostile (e.g., being shoved by mistake; De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). Hostile attributional bias (HAB) refers to the tendency to attribute hostile intentions to the actions of others when contextual cues are ambiguous (Milich & Dodge, 1984). Hostile interpretations of provoking events are automatic and require slow and effortful mental processing to replace (Gilbert & Malone, 1995; Carlston & Skowronski, 1994, 1995; Winter & Uleman, 1984; Wilkowski, Robinson, & Troop-Gordon 2010). Differences between the cognitive accessibility of hostile vs. non-hostile concepts is an important predictor of HAB and aggression (e.g., Bartlett et al., 2009; Meier and Robinson, 2004; Graham and Hudley, 1994). Training programs that emphasize increasing the accessibility of non-hostile concepts in the face of ambiguous information and reinforce inhibiting rapid hostile attributions may reduce HAB (Hawkins and Cougle, 2013). In a previous study (WRAIR #2574), a training task called Hostile Bias Modification Training (HBMT), developed jointly by WRAIR and ARL significantly reduced HAB on a validated measure. The present study would extend these findings to determine if HBMT can reduce actual expressions of low-intensity, normal aggressive behavior (e.g., angry driving) assessed via anonymous surveys.

The study would utilize up to 400 volunteers (200 completers) recruited via an online commercial recruitment platform to participate in an online study. Volunteers will be asked to participate at two time-points. At time-point one, volunteers would be randomly assigned to complete one of two versions of HBMT. One version is designed to train the brain (rehearse and reinforce) to seek positive interpretations of ambiguous social cues and to inhibit thoughts and behaviors related to hostility. The second is a placebo version that is not expected to affect attitudes, cognitions, or behaviors. These versions were validated in a prior study (WRAIR #2574). Volunteers will also complete some brief surveys to assess state emotion, trait anger, and HAB. Volunteers will be asked to return between 24 and 96 hours later to complete another brief measure of HAB, state emotion, and a brief self-report survey about their online (public behavior only), driving, and other behaviors over the preceding 24 hours. We hypothesize that volunteers who receive the genuine training will display the less hostile bias and report lower anger and aggression in their daily behaviors when assessed at the second time-point.

If successful, these findings would provide evidence that HBMT is effective in affecting real-life behaviors and help convince potential stakeholders of the value of HBMT. Future research could validate effectiveness in operational units as well as with unhealthy populations (e.g., anger management groups). Future research could also test the effectiveness of HBMT on behavioral health outcomes for usage by clinicians and portable use by individuals with unhealthy hostile bias and problems with social aggression when isolated from traditional behavioral health care (e.g., far forward deployed units).

3 STUDY SUMMARY

3.1 Objectives

Primary objective of the present protocol is:

a. Evaluate the effect of hostile bias modification training (HBMT) on real-life behaviors (reducing typical public displays of aggression) and emotions (reducing anger).

Secondary objective of the present protocol is:

b. Identify shifts in HAB as an underlying cognitive mechanism linking HBMT to behavior change.

3.2 Target Population and Number of Volunteers

The target population for this study is adult male and female volunteers. The study requires up to 400 volunteers (200 completers) successfully complete the study to run statistical analyses. We anticipate up to 50% drop-out between study session 1 and 2 as attrition is high in MTurk populations (Mason and Suri, 2012). A "completer" is defined as completing the HBMT with at least 60% of the stems completed correctly and participating at both T1 and T2.

3.3 Study Design, Methodology, and Experimental Manipulations

The study consists of a two group design. Assignment to each of the two experimental conditions is determined randomly upon the volunteers' arrival to the study webpage. However, the website will be programmed to achieve equal sample size across the two groups. The duration of participation for each volunteer is estimated to be about 60 minutes (total, including both time-points). Volunteers will complete the following as part of the study:

a. HBMT: Volunteers will complete a computer-based hostile bias modification training where they are instructed to complete word fragments (words with missing letters) to form non-aggressive words. The word fragments are based on similar stimuli used in prior research on hostile bias (Anderson, Carnagey, & Eubanks, 2003; DeWall & Bushman, 2009). This task was validated in a previous study (WRAIR # 2574).
b. Angry Cognitions Scale/HAB measure: This measure asks respondents to read hypothetical scenarios and indicate how they would interpret and respond to them. It was developed by Martin and Dahlen (2007) and will be used as a measure of HAB.
c. Trait anger Scale: Brief measure of trait anger validated by Wilk et al., (2015).
d. State Aggression Survey: This survey is adapted from several others in the literature to measure variance along the normal spectrum of aggressive behaviors in daily life that the average person might display (Álvarez-García, et al., 2016; Deffenbacher, et al., 2001; Deffenbacher, J. et al., 2002). The survey specifically asks about driving behaviors (e.g., yelling at other drivers), and public online behaviors (e.g., posting mean comments on social media), as well as generic public displays of aggression items (e.g., Gotten angry and slammed a door).

e. State Emotion Survey: A short measure of state (current or recent) emotions over the preceding 24 hour period adapted from Goldberg et al., (2006) and Quartana and Burns (2007).
f. Demographic questions: Volunteers will be asked to provide their age (whole number, not birth date), highest level of education, and gender. These will be used as statistical controls in analyses.

Volunteer recruitment and data collection will be done online by ARL AI's and/or staff with assistance from volunteerscience.com (the online experimental platform). Volunteers will be recruited via Amazon Mechanical Turk (MTurk) to the experimental webpage and complete informed consent electronically. A description of this clinical trial will be available on http://www.clinicaltrials.gov. Additionally a copy of the informed consent may be posted to a public website no later than 60 days after enrollment is completed.

Time-point 1: Volunteers will be randomly assigned to complete either the real or fake HBMT. Volunteers will also complete a brief vignette reading HAB activity, a brief measure of trait (what is typical for them) aggression, and state (how they have felt recently) anger.
Time-point 2: Volunteers will be asked to return no sooner than 24 hours and no later than 96 hours from when they completed time-point 1 to complete a following up HAB assessment (second vignette interpretation task) and brief surveys asking about aggressive behaviors and state anger during the preceding 24 hour period.

Mechanism for inviting volunteers back to complete time-point 2: The two-time point nature of this study will be explained to volunteers in both the study advertisement and in the ICD. Additionally, a feature on MTurk will allow the volunteerscience.com to send a daily e-mail to time-one volunteers inviting them back to time-point two. This can be done without MTurk revealing the e-mail addresses of the volunteers. The e-mail will remind volunteers to please return at any point between 24 hours and 96 hours from when they completed the first time-point.

Upon completion of each time-point, the webpage will thank volunteers for their participation. Volunteers will be paid part of the payment at the end of time-point one and the remaining payment after completing time-point two (see section 10.6).

3.4 Efficacy Data Collected

Main endpoints for the study include: self-report measures of HAB and self-report measures of daily aggressive behaviors.

3.5 Statistical Procedures

SPSS will be used for statistical analyses. Specific tests to be used are described in Section 9.

4 STUDY OBJECTIVES

4.1 Primary Objectives

a. To determine the efficacy of HBMT in reducing anger and aggressive behavior in daily life.
b. To determine the longevity and depreciation of HBMT effects on real life anger and aggression over time (between 24-96 hours post HBMT).

4.2 Secondary Objectives

a. Test the underlying role of HAB as a mechanism linking HBMT to changes in anger and aggressive behavior.

5 HYPOTHESES

5.1 Primary Hypotheses

a. Hypothesis 1: Relative to volunteers in the fake-training condition, those volunteers who receive the real HBMT at time-point one will report less state anger and aggression at time-point two.
b. Hypothesis 2: Effects of HBMT on state anger and aggression in daily life will be mediated by between group differences in HAB.

5.2 Secondary Hypothesis

a. The effects of HBMT on anger and aggression will diminish over time. In other words, larger effects of HBMT will be observed for volunteers returning sooner (vs later) after time-point one.
b. We anticipate the most robust impact of HBMT on anger and aggression on high versus low stress days (per self-report).

6 BACKGROUND AND MILITARY RELEVANCE

6.1 General Background

Aggression refers to causing harm to someone who is motivated to avoid that harm (Anderson & Bushman, 2002). Reactive or counter-aggression refers to aggression that results from being provoked or threatened as opposed to unprovoked aggression perpetrated for utilitarian goals (Dodge & Coie, 1987). However, provocations do not always result in reactive aggression. Indeed, the psychological literature is replete with examples of variables that moderate reactive aggression (See Anderson & Bushman, 2002). One key moderator is the extent to which the victim believes that the provocateur acted in an intentionally hostile manner (e.g., being shoved on purpose) versus not intending to be hostile (e.g., being shoved by mistake; De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002). Hostile attributional bias (HAB) is the tendency to attribute hostile intentions to the actions of others when contextual cues are ambiguous (Milich & Dodge, 1984). Elevated HAB is observed in both reactive aggressors and premeditated aggressors. Individual differences such as trait hostility (e.g., Wingrove and Bond,

2005; Wilkowski et al., 2007) and gender (e.g., Matheson et al., 2011) are also correlated with HAB.

There are many reasons why people may attribute hostile intentions to the ambiguous actions of others. For instance, HAB is predicted by situational factors. These include exposure to real or imagine violence, such as violent video games or music (Anderson et al., 2003; Bartlett et al., 2009), social exclusion (DeWall et al., 2009), intoxication (See Osgood and Muraven, 2018), or even exposure to alcohol related information (Subra et al., 2010). Furthermore, developmental factors such as rejection from peers in childhood (Coie and Dodge, 1988) and harsh parenting (Weiss, Dodge, Bates, and Pettit, 1992), can predispose strong HAB.

In general, HAB is more likely to occur in individuals and situations where non-hostile interpretations are less salient than hostile interpretations. Indeed, differences in the cognitive accessibility of hostile vs. non-hostile concepts is an important predictor of HAB and aggression. For example, research participants who complete ambiguous word fragments to form hostile-themed words, tend to attribute more blame and react more aggressively to provocations from confederates (e.g., Bartlett et al., 2009). Further, cognitive priming tasks have successfully moderated blame attributions of negative events (Meier and Robinson, 2004; Graham and Hudley, 1994). Indeed, even priming conceptually related ideas such as hot vs. cold temperature can moderate the likelihood of HAB (DeWall and Bushman, 2009). In a similar vein, manipulations that disrupt higher-order cognitive functions (e.g., cognitive load) can lead to heightened aggression in response to provocations (Osgood and Muraven, 2016).

The psychological literature provides several reasons hostile attributions are often more salient than non-hostile attributions. First, contextual cues related to the harm incurred as a result of a provocation are *often* more salient than cues related to mitigating factors (Finkel et al., 2012; Giancola et al., 2009). For example, suppose an individual cuts others in line at a checkout counter. The offense and the resultant inconvenience to others is obvious, whereas possible mitigating factors (e.g., a store employee may have told the person to cut the line) are often less noticeable. This perception bias is more likely when attention is restricted (Osgood & Muraven, 2017). Second, general attributional biases, such as the fundamental attribution error (Ross, 1977) often operate by overemphasizing the role that an individual's intentions played in their behavior and underestimating the influence of situational factors. This issue is compounded when an individual makes attributions quickly as the less accessible non-hostile concepts may take more time to surface and affect cognition.

HAB is an automatic process that requires slow and effortful controlled processing to override (Gilbert & Malone, 1995; Carlston & Skowronski, 1994, 1995; Winter & Uleman, 1984; Wilkowski, Robinson, & Troop-Gordon 2010). In other words, following provocation, a person's immediate appraisal of the situation is typically hostile, with less hostile considerations taking more time to surface.

To increase the likelihood that ambiguous provocations will be interpreted as non-hostile, people must inhibit making attributions or responding with aggressive behaviors until enough time has passed to consider non-hostile explanations for the provocation. For example, Finkel, DeWall, Slotter, Oaten, and Foshee (2009) found that participants responded more aggressively to their partner's hypothetical infidelity if forced to respond immediately than if made to wait 10

seconds. Similarly, Osgood and Muraven (2016) reduced aggression in provoked research volunteers by imposing extra time to think about reasons to inhibit aggression. Training programs that emphasize increasing the accessibility of non-hostile concepts in the face of ambiguously hostile information and reinforce inhibiting rapid hostile attributions may reduce HAB. Indeed, Hawkins and Cougle (2013) demonstrated a computer-based HAB training that involved repeated exposure to either hostile or non-hostile explanations for a series of hypothetical provocations reduced HAB and aggressive behavior.

Hostile Bias Modification Training (HBMT) is a new computer task training for reducing HAB developed by scientists at WRAIR and ARL. The training is based on the Go/No-Go task (Fillmore et al., 2006) and Lexical Decision Task (Lepore and Brown, 2002). The training is theorized to reduce bias by affecting two key factors that drive HAB: relative cognitive accessibility of hostile concepts and rapid attribution-making/aggressive responding in response to ambiguously hostile cues. The training is designed to prime trainees to interpret ambiguous information as non-hostile (by increasing the saliency of non-hostile concepts) and to behaviorally commit to that interpretation quickly. Further, the training is designed to condition the individual to inhibit responding to hostile interpretations before reconsidering the possibility the information may be non-hostile. Relatedly, the training conditions the individual to inhibit responding (behaviorally) to hostile cues. Thus, the training is thought to induce a non-hostile attribution bias while simultaneously training the inhibition behavior in response to provoking cues. In a recent study (WRAIR #2574), online volunteers who completed one session of real HBMT displayed significantly less HAB when asked to interpret the motives of characters in hypothetical vignettes than volunteers who completed a fake version of the training. Although WRAIR #2574 demonstrated HBMT can affect HAB and anticipated behaviors in hypothetical situations, it did not assess real behaviors. Therefore, it is still unclear if and how HBMT is able to affect actual behaviors and anger in real life. The present study would answer this question.

6.2 Military Relevance

Hypersensitivity to ambiguous threats, hostile bias, and the resultant inappropriate application of aggression are documented problems that reduce force readiness (Wilk et al., 2015), particularly following combat deployments. This research will continue to test a platform that could be developed into a tool for Soldiers to alleviate hypersensitivity to perceived threats following combat deployments. Further, if this experiment is successful, it would justify future efforts to test this training in a mobile platform that could be used by operational forces in far forward environments where traditional behavioral health care is inaccessible. Under the Military Operational Medicine Research Program (MOMRP) Task Area W1A (Real-time Assessment and Intervention Development), the U.S. Army Medical Research and Materiel Command (USAMRMC) is conducting research addressing the potential utility of computerized cognitive processing optimization tools designed to enhance resilience and mitigate psychological injury. The results of this protocol will produce empirical evidence concerning the efficacy of HBMT for reducing anger and aggression in life. Approval of MOMRP (RAD III) core funding for this project was the result of a vetting process that requires explicit consideration of military relevance.

7 STUDY DESIGN

7.1 Overview and Duration of Volunteer Participation

In the present study, we propose to examine the effectiveness of HBMT on reducing anger and aggression in up to 400 volunteers (200 completers) divided into two experimental conditions (n = 100 completers in each group). The duration of participation for each volunteer is approximately 60 minutes total across both time-points (see Section 7.8 for procedure breakdown with estimated times).

7.2 Determination of Sample Size

200 volunteers (100 completers per condition) are needed to achieve statistical power of 80% and equal groups. The previous (and only other) study to test HBMT found a large effect of the real (vs. placebo) training on HAB (d = .78), when HAB was assessed immediately after HBMT. However effect sizes are expected to be smaller in the present study as actual behavior is being assessed and there is a greater time delay (24-96 hours) between HBMT and the behavioral assessment. We will divide this effect size approximately in half (d =.4) in our prediction for the second study. Given this effect size, a minimum of 200 completers who follow all task instructions will be needed to achieve 80% power.

7.3 Population to be Studied

The target population for this study is adult male and female volunteers from the general population.

8 METHODS

8.1 Pre-Study Procedures: Advertisements and Recruitment of Volunteers

Adult volunteers meeting eligibility (see Section 8.4) will be recruited by non-coercive means according to applicable US Army Regulations (ARs). Volunteers will be recruited via postings listed on Amazon.com Mechanical Turk (MTurk). MTurk allows researchers to use Amazon.com to recruit participants for online experiments in exchange for a small fee and payment to each participant for their time. This form of recruitment offers several advantages. Namely, it allows for a sample that is relatively more representative of the general (internet using) population than local convenience samples, substantially faster data collection, and larger sample sizes. Several recent empirical analyses of the strengths and weaknesses of MTurk samples have concluded that MTurk samples are of comparable or better quality than undergraduate subject pools (the most common source of volunteers in psychology research; Paolacci & Chandler, 2014). Researchers have determined that MTurk samples are also more representative of the national-population than local convenience samples (Berinsky, Huber, & Lenz, 2012). Furthermore, research testing classic psychological effects using MTurk versus undergraduate students on the same experiments report equivalent results (Goodman, Cryder, & Cheema, 2013). These reports recommend using MTurk for computer experiments where minimal experimenter involvement is needed. Consequently, MTurk has become a popular methodology for collecting data in social-science studies, with over 700 recent articles using

MTurk for participant recruitment (Berinsky, Huber, & Lenz, 2012). Of special relevance to the present research, MTurk volunteers have been used in recent research by US Army research laboratories and US Army research scientists (e.g., Asher et al., 2017; Onal et al., 2014; Rajivan et al., 2016; Roy et al., 2017). HBMT was specifically tested using an MTurk sample previously (WRAIR #2574) with large effect sizes observed.

8.2 Study Location

Volunteers will complete the study via their own internet-connected personal computers. All data will be collected by AI's at ARL utilizing the Volunteerscience.com platform, which is fully integrate-able with MTurk. Volunteerscience.com staff may provide technical assistance with programming the computer tasks designed by the study PI and AI's. Prospective participants will click a link on MTurk, which will redirect them to the experiment web-page hosted by volunteerscience.com. Data is collected and stored by volunteerscience.com. Volunteerscience.com will transfer data files to AI's/study staff who will transfer data to the PI. Volunteerscience.com will maintain copies of data until the PI confirms receipt of data from Volunteerscience.com. MTurk will not receive any experimental data. The study files and data will be on Federal Risk and Authorization Management Program (FedRAMP) and Defense Information Systems Agency (DISA) authorized servers managed by Amazon Web Services. See section 11.2 for details on information assurance (IA) and operational security (OPSEC).

8.3 Study Briefing and Informed Consent

Volunteers will be presented with an electronic version of the Informed Consent Document (ICD; Appendix C) on the study webpage at the start of each time-point of the study. The ICD provides potential volunteers with information pertaining to study procedures, risks, and benefits related to participation in the study. Volunteers will not be asked to add a signature or any personally identifiable information (PII) to the ICD. However, volunteers will be asked to click a box indicating that they have read and understood the ICD, and agree to participate. If a volunteer clicks that they "do not agree" to participate, they will be redirected to a screen that thanks them for their time and ends the study session.

8.4 Volunteer Eligibility

8.4.1 Determination of Eligibility

MTurk requires that all users are at least 18 years old to create an MTurk account. Prerequisites will be set to restrict participation to MTurk users who are located in the United States and/or other primarily English speaking countries.

8.4.2 Inclusion Criteria

All volunteers must meet the following criteria to be included in the study:

a. Adult aged 18 and older
b. Located in the United States or other primarily English speaking country. MTurk allows requestors to limit the ability to view a posting to only those within certain geographical regions.

8.5 Randomization and Volunteer Assignment

Volunteer assignment to each of the two experimental conditions is semi-randomized (i.e. random except that computer ensure equal sample sizes across experimental conditions). The randomized assigning of participants is done by the study web-page/program at volunteerscience.com. The computer program randomly assigned volunteers to one of the two conditions when they begin the study.

8.6 Volunteer Identification

Personally identifiable information (PII) will not be collected. The only identifiers linking an individual to the study would be their MTurk ID. However, the MTurk ID does not contain PII and is a randomly generated alpha-numeric code (e.g., A2IGSXYYGW2BHT). The platform being used to collect data (volunteerscience.com) will not transmit these MTurk ID's to either the ARL or WRAIR research staff. Volunteersceince.com staff will replace the MTurk IDs with new random identifiers containing no PII. Thus, there are two levels of anonymity protecting volunteers.

8.7 Study Materials and Manipulations

8.7.1 HBMT

This is a training developed by the PI (see Appendix E), but based on the existing fragment lexical decision task (Neely et al., 1989) and Go/No-Go task (Fillmore et al., 2006). It was used and validated in a previous recent study (WRAIR #2574). This task is completed entirely on the computer. For this task, volunteers see incomplete word fragments (one at a time) that appear at the center of the computer screen. Most of the word fragments could be completed to form either aggressive or non-aggressive words (e.g., "K I _ _" could be completed as either an aggressive word, "KILL", or a non-aggressive word "KISS", "KILT", etc.). Some of the fragments could only be completed to form non-aggressive words (e.g., HA _ PY), and the remaining fragments could only form aggressive words (e.g., A _ _ ACK). Volunteers are instructed to respond to these cues as quickly and accurately as possible by typing a complete word that can be formed from the fragment. Volunteers are randomly assigned to either a real-training or a fake-training. Those in the real-training condition are told to try and complete each fragment to form a positive/non-aggressive word and to refrain from typing altogether if the fragment could *only* be completed as a negative/aggressive word. Participants are given 12 seconds to respond to each cue. Volunteers randomly assigned to the fake training will be told to complete the fragments with the first word that comes to mind. This fake training still exposes volunteers to the training stimuli and a computer task, but does not train inhibition or selectively prime non-hostility, which are the hypothesized mechanisms of the training. We do not believe there is a meaningful risk this task could unintentionally prime increased hostility given that prior research found no evidence of this, despite prior research including experimental conditions that were designed to use this this training to increase hostility (WRAIR # 2574). Actual responses in this task are not the primary outcome being measured. Rather, the HBMT is used to prime either hostile attribution bias or a reduction in hostile attribution bias and the key outcome measures are reported HAB, anger, and aggression.

8.7.2 Demographic Questions

Volunteers will be asked to provide their gender (Male, Female, Prefer not to say), level of education, and age (number only).

8.8 Study Procedure

The procedural flow of the experiment with estimated times for each step is outlined below. The study will not proceed until/unless the volunteer clicks that they have read the ICD and agree. The times provided are only estimates of the duration we anticipate the typical volunteer will use.

Time-point One:

a. Volunteer arrives at study webpage and reviews ICD (estimated to take approximately 1-2 minutes)
b. Volunteer completes trait anger questionnaire (1 minute)
c. Volunteer Completed State Emotion Questionnaire (3 minutes)
d. Volunteer reads instructions for real/fake HBMT (1 minute)
e. Volunteer completes real/fake HBMT (15 minutes)
f. Volunteer completes ACS Scale (set A) (10 minutes)
g. Volunteer completes demographic items (< 1 minute)
h. Volunteer is thanked for participation (< 1 minute)

Time-Point Two (24-96 hours later)-volunteers will received daily reminder e-mails via anonymous mturk.com functionality during interim.

i. Volunteer arrives at study webpage and reviews ICD (same ICD as from time 1; estimated to take approximately 1-2 minutes).
j. Volunteer Completes ACS (set B) (10 Minutes)
k. Volunteer Completed State Emotion Questionnaire (3 minutes)
l. Volunteer Completes State Measure of Aggression (10 Minutes)
m. Volunteer is thanked for participation (< 1 minute)

8.9 Documents and Electronic Data Management

8.9.1 Pre-Consent Documents/Recruitment Material (Appendix A)

8.9.2 Consenting/Screening Documents

8.9.2.1 ICD (Appendix C) **—** provides potential volunteers' information pertaining to study procedures, risks, and benefits, and is used to document consent to participate in the study. This is displayed electronically on the study webpage at the start of the study.

8.9.3 Study Documents and Materials

8.9.3.1 UAP reporting form (Appendix I) – Documents unanticipated problems involving risks to volunteers or others

8.9.3.2 Angry Cognition Scale (Appendix B)

8.9.3.3 Demographics Questions (Appendix D)

8.9.3.4 HBMT (real/fake) Stimuli and Instructions (Appendix E)

8.9.3.5 State Aggression Questionnaire (Appendix F)

8.9.3.6 Trait anger Questionnaire (Appendix G)

8.9.3.7 State emotion Questionnaire (Appendix H)

8.10 Unanticipated Problems

8.10.1 Definition of Unanticipated Problem (UAP)

As per SOP no: UWI-B-004, unanticipated problems include any unforeseen or unexpected incident or experience (including an unanticipated adverse event) that occurs during the conduct of the research and that was not described in the information reviewed by the IRB (i.e. research protocol or informed consent document). Unanticipated problems can include subject complaints or protocol violations.

8.10.2 Definition of Unanticipated Problem Involving Risks to Volunteers or Others (UPIRTSO)

As per SOP no: UWI-B-004, UPIRTSO include any incident, experience or outcome that meets **all** of the following criteria:

1. Unexpected (meaning that there is a reasonable possibility that the incident, experience or outcome may have been caused by the procedures involved in the research) given (a) the research procedures that are described in the protocol-related documents, such as the IRB-approved research protocol and informed consent document; and (b) the characteristics of the subject population being studied;
2. Related or possibly related to participation in the research (in this guidance document, *possibly related* means there is a reasonable possibility that the incident, experience, or outcome may have been caused by the procedures involved in the research); and
3. Suggests that the research places subjects or others at a greater risk of harm (including physical, psychological, economic, or social harm) than was previously known or recognized.

8.10.3 Reporting of UAPs and UPIRTSOs

1. UAPs & UPIRTSOs will be reported to HSPB, as applicable.

2. All UPIRTSOs will be reported promptly to HSPB upon their identification (within 48 hours), and a report will be provided to HSPB within 10 working days.

8.11 Data Disposition

Volunteerscience.com uses servers located in the geographic US that are owned and operated by Amazon Web Services (AWS). Volunteerscience.com will also assist with the technical aspects of collecting the data and recruiting participants (e.g., posting the advertisement to MTurk; managing the webpage). During the course of the study, data will be stored on secure servers with Federal Risk and Authorization Management Program (FedRAMP) and Defense Information Systems Agency (DISA) authorizations at the moderate impact level or higher (all US-based AWS servers meet these criteria). Data from participants are always uploaded from participant's computer to the volunteerscience.com server using secure, encrypted SSL connections. Login to access the data on the server will be retained by only the PI/AI's and authorized research staff. Passwords are always sent to the server over secure, encrypted SSL connections. See Section 11.2 for details on Information Assurance and Operational Security. Upon the completion of data collection, all data will be downloaded via .csv files (or equivalent) and deleted from AWS servers. All electronic data and files will be encrypted and kept in a password-protected folder on the MPB network drives (CMPN, WRAIR) with access restricted to study staff members on CAC-protected computers at WRAIR. Duplicates of data will also be stored on secure drives at ARL. All records (paper and electronic) will be retained for at least three years following completion of the research (submission of the study closeout report). No personally identifying information will be collected as part of this research. The only identifiers are the public MTURK user-names, which are random alpha-numeric monikers that do not contain PII. Further, even these MTURK user-names will not be retained. Volunteerscience.com replaces the MTurk usernames with new random alpha-numeric codes prior to providing data to AIs. We do not believe there is a chance these data could be re-identified later. There are no current plans to share data with any third parties; any future sharing of data will be addressed under an amendment to the protocol, with appropriate agreements in place, as applicable.

8.12 Volunteer Termination and Withdrawal

Situations that may cause an early termination or withdrawal of a volunteer from the study are described below.

8.12.1 Reasons for Termination

8.12.1.1 Self-Withdrawal Criteria

Volunteers are always free to withdraw themselves from the study at any time without prejudice or penalty. They are not required to disclose a reason for their decision. Volunteers who withdraw themselves from the study are compensated as indicated in section 10.6 "Financial Incentives to Volunteers."

8.12.1.2 Other Termination Criteria

In rare circumstances, a volunteer's participation may be terminated without his/her consent if unplanned conditions occur (e.g., website failure). In these cases, volunteers will be compensated as indicated in Section 10.6, "Financial Incentives to Volunteers."

8.12.2 Termination and Withdrawal Procedures

Individuals may withdraw by simply navigating away from the study webpage without completion or not returning for the second time point. These withdrawals will not be considered to be associated with a UPIRTSO and/or significant and adverse reaction and therefore not reported to HSPB. Volunteers are not required to contact a research team member before they withdraw. However, if the research team discovers evidence of a withdrawal associated with a UPIRTSO or significant and adverse reaction to the study, (e.g., if a volunteers chooses to contact the PI or other team member about their withdrawal and it appears to be associated with a UPIRTSO and/or significant and adverse reaction to the study) this will be promptly reported to the WRAIR IRB within 48 hours [via e-mail to the HSPB electronic mailbox (usarmy.detrick.medcom-wrair.mbx.hspb@mail.mil) and the HSPB Point of Contact (POC)].

8.13 Quality Control and Assurance

All applicable MPB and ARL standard operating procedures will be followed.

9 STATISTICAL METHODS AND DATA ANALYSIS

9.1 Analyses for Main Study Hypotheses

Between group differences (comparing real vs. fake HBMT) in the change in state anger and state HAB across time points (change from time-point on to time-point two) will be primarily assessed with a mixed-designs ANOVA. Between group differences in state aggression measured at time-point two will be assessed with a General Linear Models (GLM) analysis controlling for trait anger and demographics (age and gender).

We will also plot effect of group comparing real vs. fake HBMT and time between time-points (24-96 hours) on change scores (time 2 anger/aggression minus time 1 anger aggression) and analyze this using a linear regression with an interaction term.

Lower order effects will be tested using corrected Fishers LSD, Tukey, Scheffe, or other pairwise test as appropriate. Appropriate data-transformations may be used as necessary to satisfy significance test requirements. Lower order effects will also be assessed with pairwise dependent means t-tests. Age and gender will be controlled as covariates. Mediation analyses (if used) will be performed using non-parametric Monte-Carlo bootstrapping procedures using PROCESS (see Hayes, 2017).

We may use age, gender, and trait measures as control variables in analyses.

9.2 Level of Significance to be used

Determination of statistical significance for all analyses will be $\alpha = 0.05$. In the case of directional significance tests (e.g., tests using t-distributions), one-tailed tests will be used for *a-priori* directional hypotheses (Section 5.1) and two-tailed for non-directional hypotheses and *post-hoc* hypotheses).

9.3 Interim Analysis

No interim analyses are planned.

9.4 Accounting for Missing, Unused, and Spurious Data

Missing data will be identified as such in the database and will not be imputed or replaced for analytic purposes. Little's Missing Completely at Random (MCAR) test (Little, 1988) will be used to confirm that all missing data were missing "completely at random". Participants with small amounts of missing data (≤ 15%) will be excluded from analyses pairwise, whereas volunteers with large amounts of missing data (>15%) will be excluded listwise. Outliers are defined as individual scores that fall beyond an acceptable range (1.5 inter-quartile ranges above the third quartile or below the first quartile). Outliers will be identified as such in the database, and will not be included in data analyses, or will be transformed as appropriate for use in the data analytic strategy.

9.5 Procedures for Reporting Deviations from the Original Statistical Plan

Any deviation(s) from the original statistical plan will be described and justified in a protocol amendment and/or in the final report, as appropriate.

9.6 Selection of Volunteers to be Included in Analyses

See section 9.4 for situations where volunteer data will be excluded listwise versus pairwise.

10 ETHICAL CONSIDERATIONS

10.1 Volunteer Identification and Confidentiality

All data are considered private and confidential, and observations, responses, and other personal data are coded so that personal identification is not possible from data entered into information systems. No PII is collected by research staff as part of the study. PI, AI, and/or other research team members will not solicit PII from volunteers. If volunteers contact the PI, AI, or other research team member in a way that reveals PII (e.g., revealing identity in an e-mail to the PI asking a question about the study), the team member will keep these communications confidential and stored in secure drives at WRAIR and/or ARL.

10.2 Risks to Volunteer for Participating

The primary risks to the volunteer includes breach of confidentiality. However, breach of confidentiality is minimized due to only the MTurk handle being used. There is no perceived risk of the information lost, stolen, or compromised.

10.3 Benefits to Volunteers for Participating

There are no direct benefits to the participants in this study. Participants may find some aspects of the study interesting, entertaining, and/or thought provoking. Participants may also enjoy the

good feeling that comes with knowing they contributed to science. For science, we expect that the information we learn from this research will help guide the development of tools to help improve people's lives.

10.4 Precautions to Minimize Risks to Volunteers

Volunteers will be told during the informed consent process that they may withdraw or refuse to complete portions of the study for any reason without penalty. Participants will be given the contact information for the Principal Investigator and WRAIR HSPB to contact should they have any questions related to the experiment.

10.5 Risks to Study Personnel

There are no anticipated risks to study personnel.

10.6 Financial Incentives to Volunteers

Volunteers will be paid up to $5 for their participation in this study. All volunteers who complete time-point one of the study will receive $3 and volunteers will receive an additional $2 if they complete time-point two of the study. This rate is standard pay for MTurk work (See Hitlin, 2016). Most MTurk tasks pay 10 cents or less and result in less than an equivalent hourly wage of $5. Volunteers will not be paid for participation in a time point if they do not complete an entire time point (i.e., progress through each activity/survey and reach the end screen; volunteers may skip any question they do not wish to answer on surveys without affecting payment). If a volunteer is terminated from the study as a result of website, server, or study program related failures (e.g., server goes down during study), they may request payment by contacting the PI directly. The PI will ask Volunteersceince.org to verify that the server/website failure had occurred and if so to pay the volunteer. The approval authority of such requests is the PI. Volunteerscience.com will track the performance of each volunteer using their MTurk handle and calculate compensation appropriately without sharing any PII (including MTurk handle) with ARL or WRAIR staff.

10.7 Distribution of Volunteer Payments

Payment is made to participants via their MTurk account.

11 ADMINISTRATIVE PROCEDURES

11.1 Access to Source Data / Documents

The investigators and study staff (e.g., research assistants), members of the WRAIR HSPB, representatives of the U.S. Army, USAMRMC, DoD, and other government agencies are authorized access to the study data as part of their duties and part of their responsibility to protect human volunteers in research.

11.2 Information Assurance and Operational Security

11.2.1 Information Assurance

Data collection will utilize the platform volunteerscience.com; during data collection period, the data will be stored on Amazon Web Services servers. Data/responses from participants are always uploaded to the experimental web page using secure, encrypted Secure Socket Layer (SSL) technology, which protects data using both server authentication and data encryption, ensuring that data are safe, secure, and available only to ARL AI's using valid login credentials for the account. ARL staff will download data and provide to WRAIR staff. The PI will maintain the data on secure MPB network drives.
All AWS servers located within the USA are authorized by the Federal Risk and Authorization Management Program (FedRAMP) and the Defense Information Systems Agency (DISA) for storage of federal government (including DoD) data at the moderate impact level (some sites are also authorized for high impact level data). Moderate impact level authorization allows storage of data where the loss of confidentiality, integrity, and availability would result in serious adverse effects on an agency's operations, assets, or individuals.

Physical access to buildings containing AWS servers is strictly controlled both at the perimeter and at building ingress points by professional security staff utilizing video surveillance, intrusion detection systems, and other electronic means. Authorized staff must pass two-factor authentication a minimum of two times to access data center floors. All visitors and contractors are required to present identification and are signed in and continually escorted by authorized staff.

Amazon facilities are equipped with fire detection and suppression equipment, multiple backup power systems, and climate and temperature control. Servers are decommissioned and disposed using processes that prevent unauthorized access to data.

The servers reside behind high-availability firewalls and are monitored using Amazon's proprietary systems for detection and prevention of various threats including denial of service, man in the middle, IP spoofing, port scanning, and packet sniffing. Automated network security audits are conducted to the standards and requirements of the SANS/FBI security test, the U.S. Department of Homeland Security's published recommendations and the Payment Card Industry Data Security Standard.

The PI will monitor volunteerscience.com for any notifications regarding security breaches and/or potential security breaches. In the event of a security breach, this will be considered a major deviation (see Section 11.4.1).

Upon the completion of data collection, all data will be downloaded via .csv files (or equivalent) and deleted from AWS servers. At the completion of the study, ARL staff will download data from Volunteerscience.com without any PII (or MTurk handles-Volunteerscience.com replaces these with new random alphanumeric) and provide the data to WRAIR staff. The PI will maintain the data on secure MPB network drives. This study meets ARL's IMD standards and requirements.

11.2.2 Operational Security

All study materials, presentations, and publications, will receive approval from the WRAIR public affairs officer and operational security office prior to release.

11.3 Protocol Amendments

All amendments to the protocol and supporting documents must be reviewed and approved prior to implementation. Any amendments increasing the risks to the volunteers will require prior submission to HSPB for review and approval prior to implementation. The informed consent document will be revised to concur with any significant amendment that directly affects volunteers, and will also be reviewed and approved with the amendment. New volunteers enrolled in the study will be consented with the most recent approved consent documents.

11.4 Deviations from Protocol

A log of all deviations from the protocol will be maintained by the study staff, and reported to WRAIR HSPB, as applicable. Actions taken in response to the deviation, and the impact of the deviation will be assessed by the PI (or AI assigned this duty) and recorded as significant or insignificant. As it is common for MTurk volunteers to quit an MTurk task prior to completion, self-withdrawals will not, on their own, be considered a deviation (unless associated with another deviation).

11.4.1 Major Deviations

All major deviations to the protocol that may have an effect on the safety or rights of the volunteer or the integrity of the study will be promptly (within 48 hours of identification and a written report provided to HSPB within 10 working days) reported to the WRAIR HSPB and recorded in the study deviation log. The PI is responsible for making the initial determination; however, guidance may be obtained from the HSPB office. Major deviations may include, but are not limited to:

a. Consent not obtained, or consent missing;
b. Protocol procedures initiated prior to consent;
c. Inclusion or exclusion criteria deviation without IRB approval;
d. Delayed reporting of unexpected adverse events or unanticipated problems;

11.4.2 Minor Deviations

All minor deviations (i.e., deviations not considered to be major deviations) will be recorded in the study deviation log and reported WRAIR HSPB, as applicable. Minor deviations may include but are not limited to:

a. Study procedure conducted out of sequence;
b. Technical issues with website

Note: Any of the above listed minor deviations may be assessed as major deviations depending on the severity and frequency.

11.5 Closeout Report

The PI is responsible for submitting a closeout report and associated documents to the HSPB upon the completion of the study.

11.6 Regulatory Audits

The knowledge of any pending compliance inspection/visit by a government agency concerning clinical investigation or research, the issuance of inspection reports, warning letters or actions taken by any regulatory agencies including legal or medical actions and any instances of serious or continuing noncompliance with the regulations or requirements will be reported immediately to the WRAIR HSPB.

11.7 Publication Policy

All data collected during this study may be presented in scientific forums orally and in written publications in scientific journals. No identifying information for any of the volunteers in the study will be included in any presentation of data. All proposed publications or presentations will first be agreed to by any of the involved authors and then forwarded to the relevant authorities for review and clearance prior to submission, as per WRAIR policy.

11.8 Compliance with Laws and Regulations

As noted above, the PI has reviewed this protocol and will conduct the study in full compliance with current applicable WRAIR, ARL, Army, and DoD policies and regulations.

11.9 Responsibilities of Study Personnel

11.9.1 Principal Investigator (PI)

The PI is responsible for oversight of all aspects of study-related activities, personnel, and final approval (or disqualification) of potential volunteers. PI trains or appropriately delegates training of all personnel on study-related skills, and oversees study conduct, data collection, data reduction, and data analyses. At the PI's request, associate investigators may assist with PI duties. Additional duties of the PI include:

A. To promptly report any change of investigators. Normally, changes may not be initiated without WRAIR HSPB approvals, as applicable, except where necessary to eliminate apparent immediate hazards to the human volunteer or others.
B. To promptly (within 48 hours) report by telephone or email any UAPs which occur to human subjects or others to the WRAIR HSPB at (301) 319-9940.
C. To prepare closeout report at the completion of the study.
D. To immediately report to the WRAIR HSPB and the MRMC Office of Research Protections (ORP) knowledge of a pending compliance inspection by any outside governmental agency concerning clinical investigation or research.
E. The PI will ensure required training and maintain a record of personnel training certificates.

11.9.2 Associate Investigators (AI)

Under the direction of the PI, AIs may be responsible for:

A. Oversight of study-related aspects, personnel, and final approval (or disqualification) of potential volunteers.
B. Training study personnel on study-related skills.
C. Overseeing study conduct, data collection, data reduction, and data analyses.
D. Other duties as assigned based on credentials.

11.9.3 Research Technicians and Research Assistants

All research assistants will be trained by the PI in study procedures prior to working on the study. Under the supervision of the PI, research technicians and assistants will perform study-related functions as assigned. The PI will supervise and delegate tasks to the staff of research technicians. These functions/duties *may* include (but are not limited to):

a. Pre-study functions such as preparing study materials.
b. Study functions: Managing MTurk posting resolving technical issues (if any) with experimental webpage. The study staff may also use assistance from volunteerscience.com and/or MTurk staff in resolving technical issues or to assist with platform related requests. Volunteerscience.com (and staff) may assist with the technical aspects of collecting, storing, and transferring data to PI/AI, with the technical aspects of recruiting volunteers (e.g., managing MTurk advertisement posting), and with technical aspects of paying volunteers (sending funds to Amazon to cover payments per existing ARL contracts).
c. Post-study functions: Data quality assurance, data cleaning and preparation, data analysis.

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13 APPENDICES

Appendix A: Recruitment Materials
MTurk Advertisement

(Note: the field titles and sections are standardized on MTurk).

Title: Psychology Study: Help Scientists Test the Relationship Between a Vocabulary Task and How People Behave in Daily Life.
Description: This is a two part research study. At time-point one, you will fill out some brief personality surveys. You will also read several short scenarios and imagine how you would react and/or interpret these situations in real life. You will also complete a vocabulary task where you will sort word fragments based on type as quickly as you can. This will take approximately 30 minutes. You will be asked to return in 24-96 hours for part two where you will repeat a similar scenario reading activity as during time one and fill out a brief questionnaire about your recent behaviors. This second time-point will take about 25 minutes.
Keywords: Psychology, Study, Experiment, Science, Sorting, Reading
Payment: $5 ($3 at time-point one and $2 at time-point two)
Number of assignments per HIT: 400
Time Allotted Per Assignment: 1 hour
HIT Expires in: [TBD]
Auto-approve and pay workers in: 8 hours

Appendix B: Angry Cognitions Scale
(ACS)

Directions: Below are several scenarios followed by types of thoughts people often have in similar situations. For each scenario, imagine that what is being described has just happened to you. Then, read each thought and fill in the circle indicating how likely you would be to have that thought or one similar to it in that situation. There are no right or wrong answers and you are not being asked whether these thoughts are appropriate - only how likely you would be to have similar thoughts. Please respond to all of the thoughts for each scenario.

SET A

You are driving through a residential area when someone backs their car out of a driveway and nearly hits you.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
1.	He/she did that just so I'd have to stop. / He/she was trying to scare me.	**O**	**O**	**O**	**O**	**O**
2.	I can't stand it when things like this happen. / He/she almost totaled my car.	**O**	**O**	**O**	**O**	**O**
3.	Nobody knows how to drive anymore. / People are so careless.	**O**	**O**	**O**	**O**	**O**
4.	He/she must not have seen me.	**O**	**O**	**O**	**O**	**O**
5.	People should look where they're going. / I was here first. He/she shouldn't have gotten in my way.	**O**	**O**	**O**	**O**	**O**
6.	That dumb jerk/ass/bitch!	**O**	**O**	**O**	**O**	**O**

Your new roommate doesn't clean up the kitchen after having some friends over.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
7.	He/she knew how upset this makes me and just didn't care.	**O**	**O**	**O**	**O**	**O**
8.	I can't stand dealing with his/her mess.	**O**	**O**	**O**	**O**	**O**
9.	He/she should keep this place clean because I want it clean.	**O**	**O**	**O**	**O**	**O**

	/ He/she should respect my home.					
10.	Even though I may want to, I can't control the things that other people do.	**O**	**O**	**O**	**O**	**O**
11.	That stupid lazy deadbeat/lowlife/slob!	**O**	**O**	**O**	**O**	**O**
12.	He/she does this all the time/is always making a mess/never cleans up.	**O**	**O**	**O**	**O**	**O**

Someone bumps into you at the mall and doesn't apologize.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
13.	People are always so careless.	**O**	**O**	**O**	**O**	**O**
14.	I just can't stand people sometimes.	**O**	**O**	**O**	**O**	**O**
15.	I'm sure he/she wouldn't have bumped into me if he/she had seen me.	**O**	**O**	**O**	**O**	**O**
16.	He/she's just too lazy to go around.	**O**	**O**	**O**	**O**	**O**
17.	That bitch/jerk/idiot!	**O**	**O**	**O**	**O**	**O**
18.	People need to learn to watch where they are going.	**O**	**O**	**O**	**O**	**O**

You get home from the drive-thru and realize that you were given the wrong food.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
19.	This isn't rocket science. How can people be so stupid?	**O**	**O**	**O**	**O**	**O**
20.	People should just do their jobs the right way.	**O**	**O**	**O**	**O**	**O**
21.	I bet they knew they were screwing up my order and just didn't care.	**O**	**O**	**O**	**O**	**O**
22.	This is terrible! / I hate this!	**O**	**O**	**O**	**O**	**O**
23.	They always screw up my order. / That place is totally worthless.	**O**	**O**	**O**	**O**	**O**
24.	Oh well, getting angry won't bring me what I ordered.	**O**	**O**	**O**	**O**	**O**

SET B :

You are stuck behind a slow driver on an otherwise open road.

	Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely

25.	Now I'll never get where I'm going!	**O**	**O**	**O**	**O**	**O**
26.	People need to learn to drive!	**O**	**O**	**O**	**O**	**O**
27.	People are always slowing me down/getting in my way.	**O**	**O**	**O**	**O**	**O**
28.	He/she's doing this just to make me mad.	**O**	**O**	**O**	**O**	**O**
29.	What a dumb-ass/lowlife/idiot!	**O**	**O**	**O**	**O**	**O**
30.	Getting angry isn't going to get me there any sooner.	**O**	**O**	**O**	**O**	**O**

You are at a store waiting to be helped, but the clerks are talking to each other and ignoring you.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
31.	These lazy jerks/bitches/idiots!	**O**	**O**	**O**	**O**	**O**
32.	Getting angry isn't going to get me out of here any sooner.	**O**	**O**	**O**	**O**	**O**
33.	They're probably ignoring me on purpose just so they don't have to do their job.	**O**	**O**	**O**	**O**	**O**
34.	This is terrible. I'm never going to get out of here.	**O**	**O**	**O**	**O**	**O**
35.	People are so rude. / People like this always slow me down. / Nobody cares about the customer anymore.	**O**	**O**	**O**	**O**	**O**
36.	I don't care what they are talking about. They need to get over here and help me now.	**O**	**O**	**O**	**O**	**O**

Your spouse/significant other doesn't do something he/she promised he/she would take care of.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
37.	He/she can be so stupid/worthless/irresponsible sometimes.	**O**	**O**	**O**	**O**	**O**
38.	I can never count on him/her. / He/she always forgets to do things.	**O**	**O**	**O**	**O**	**O**
39.	He/she should know better than this.	**O**	**O**	**O**	**O**	**O**
40.	This is a catastrophe! / I can't believe this is happening. / I can't trust him/her at all.	**O**	**O**	**O**	**O**	**O**
41.	He/she knew this was important to me and didn't do it anyway. /	**O**	**O**	**O**	**O**	**O**

	He/she isn't taking me seriously. / He/she is trying to get back at me for something.					
42.	I'm sure there must have been a good reason why he/she didn't get this done.	**O**	**O**	**O**	**O**	**O**

Someone talks down/is condescending to you.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
43.	I can't stand having to hear this.	**O**	**O**	**O**	**O**	**O**
44.	People are so rude. / He/she always acts this way.	**O**	**O**	**O**	**O**	**O**
45.	He/she just thinks he/she's better than me. / I know he/she is just trying to make me upset.	**O**	**O**	**O**	**O**	**O**
46.	I hate this arrogant/conceited/stuck-up loser!	**O**	**O**	**O**	**O**	**O**
47.	I shouldn't have to listen to this. / People can't talk to me this way.	**O**	**O**	**O**	**O**	**O**
48.	Even though I don't like hearing this, I can't control what others say to me.	**O**	**O**	**O**	**O**	**O**

Your family doesn't take your education/career seriously.

		Very Unlikely	Unlikely	Somewhat Likely	Likely	Very Likely
49.	They just don't care about what's important to me.	**O**	**O**	**O**	**O**	**O**
50.	I can't deal with it when they act this way.	**O**	**O**	**O**	**O**	**O**
51.	I don't deserve to be treated this way. / They should just be quiet and leave me alone.	**O**	**O**	**O**	**O**	**O**
52.	They can be so cruel/nasty/selfish sometimes.	**O**	**O**	**O**	**O**	**O**
53.	People never understand me. / I always have to put up with things like this from people.	**O**	**O**	**O**	**O**	**O**
54.	I can't expect them to agree with everything I do or say.	**O**	**O**	**O**	**O**	**O**

Scoring: Missattributing Causation	Catastrophic Evaluating	Overgeneralizing	Demandingness	Inflammatory Labeling	Adaptive
1	2	3	5	6	4
7	8	12	9	11	10
16	14	13	18	17	15
21	22	23	20	19	24
28	25	27	26	29	30
33	34	35	36	31	32
41	40	38	39	37	42
45	43	44	47	46	48
49	50	53	51	52	54

Scoring instructions: Convert scaled responses to numbers as follows:
Very unlikely: 1
Unlikely: 2
Somewhat likely: 3
Likely: 4
Very likely: 5

Sum responses for each of the six subscales for overall score on each subscale. Item number legend for subscales provided in the table above.

Citation:

Martin, R. C., & Dahlen, E. R. (2007). The Angry Cognitions Scale: A new inventory for assessing cognitions in anger. *Journal of Rational-Emotive and Cognitive Behavior Therapy, 25*, 155-173.

Appendix C

Walter Reed Army Institute of Research
Consent for Research Participation

Title: Vocabulary Task and Behavior Study II

Sponsor: Center for Military Psychiatry and Neuroscience- Research
Walter Reed Army Institute of Research
503 Robert Grant Ave.
Silver Spring, MD 20910

Funder: US Army Medical Research and Materiel Command

Principal Investigator (PI): Jeffrey M. Osgood, Ph.D. Walter Reed Army Institute of Research

Contact Info: 301-319-7475; Jeffrey.m.osgood.mil@mail.mil

You are being asked to take part in a research study. This study is supported by the United States Department of Defense. The box below tells you important things you should think about before deciding to join the study. We will provide more detailed information below the box. Please ask questions about any of the information before you decide whether to participate. You may also wish to talk to others (for example, your family, friends, or your doctor) about this study, before agreeing to join. A description of this clinical trial will be available on http://www.clinicaltrials.gov. Additionally a copy of the informed consent may be posted to a public website no later than 60 days after enrollment is completed.

Please contact one of the below if you have any questions concerning the study or if you have any other questions or concerns.

Captain Jeffrey M. Osgood, Ph.D. **(301) 319-7475**

Dr. Phillip J. Quartana, Ph.D. **(301) 319-9777**

Key Information for You to Consider
• **Voluntary Consent**. You are being asked to volunteer for a research study. It is up to you whether you choose to participate or not. There are no penalties and you will not lose anything if you decide not to join or if after you join, you decide to quit.

- **Purpose**. We are doing this research to see if how people respond on a word completion task relates to how they behave and respond to situations in the real world.
- **Duration.** Your part of the study will last about one hour total over two time-points (24-96 hours apart). You will be asked to re-review this document and re-consent to the study when you return for the second time point.
- **Procedures and Activities.** This is a two part research study. At time-point one, you will fill out some brief personality surveys. You will also read several short scenarios and imagine how you would react and/or interpret these situations in real life. You will also complete a vocabulary task where you will sort word fragments based on type as quickly as you can. This will take approximately 35 minutes. You will be asked to return in 24-96 hours for part two where you will repeat a similar scenario reading activity as during time one and fill out a brief questionnaire about your recent behaviors. This second time-point will take about 25 minutes.
- **Risks.** Most studies have some possible harms that could happen to you if you join. Although efforts are made to protect your research study records, there is always a risk that someone outside the research team could get access to the raw data you provide. However, will not ask you for any personally identifiable information beyond your public MTurk ID and will securely transfer and store all data in order to protect your confidentiality.
- **Benefits**. There are no direct benefits to participating in this study, but we do expect that you may find some aspects of the study interesting, entertaining, and/or thought provoking. You may also enjoy the good feeling that comes with knowing you contributed to science. For science, we expect that the information we learn from this research will help guide the development of tools to help improve people's lives.
- **Alternatives.** Participation is voluntary and the only alternative is to not participate.

Why are we doing this research?
You are being asked to take part in this research study because you are in the population of interest (English speaking adults). The purpose of this research study is to learn about how completing a vocabulary task where you are asked to create words from word stems with missing letters affects the way people interpret social situations and behave in real life based on the different types of instructions given during the task.

This study is looking at a word completion task. This word completion task has not been well-studied. This means that this word completion task is considered experimental for influencing or predicting real life behaviors.

There will be no more than 400 people taking part in the study at volunteerscience.com, over a period of five years.

What happens to the information collected for this research?
Information collected from you for this research will be used to evaluate the impact of the vocabulary task you completed. The data will also be analyzed and used for research publications and/or presentations.

We may share your research data with other investigators without asking for your permission; it will not contain information that could directly identify you.

The overall results and findings from this study may be shared with you. You may contact the PI listed above who will provide you with a copy of the research report created from this project when it is available at your request.

Once the study is complete, your records will be kept in secure storage for at least three years, at the Walter Reed Army Institute of Research. Records will be maintained until it has been deemed no longer necessary to retain them by the study Sponsor, the Walter Reed Army Institute of Research, and then destroyed as per applicable regulations. Any future research using your data will require a research protocol and approval by an Institutional Review Board (IRB) (a committee responsible for protecting research participants) or other authorized official responsible for protecting human subjects in research studies. The data protections for privacy and confidentiality described in this document will apply to any future use of your stored data.

How will my privacy and data confidentiality be protected?
We will take measures to protect your privacy. Even with these measures, we can never fully guarantee your privacy will be protected. We will try our best to protect your privacy by doing the following:

- To help ensure this, we will not solicit any personally identifiable information apart from your public MTurk ID during the study.
- Data collected online at volunteerscience.com will be securely stored and encrypted when transferred to the Walter Reed Army Institute of Research (WRAIR) and the Army Research Laboratory (ARL).
- Data will be deleted from Volunteerscience.com servers after transfer to WRAIR/ARL.
- Data will be stored on secure drives at WRAIR/ARL.
- You may contact the Principle Investigator with questions or concerns about the study, or to receive public copies of the research report when available without being required to reveal your name or other personally identifiable information. However, please note that all communications may be recorded or retained. As such if you disclose any personally identifiable information (e.g., sign your name in an e-mail), this may be retained. However, all such files will be kept confidential and stored on secure drives at WRAIR/ARL.

Your study files will be kept in a safe, secure storage area at the Army Research Laboratory and the Walter Reed Army Institute of Research for the duration of the study.

Will I be paid to take part in this research study?
Yes, for your participation, you will receive up to $5 for your participation ($3 for part one and $2 for part two).

Are there costs for participating in the research?
No, there are no costs to you for taking part in this research study.

Are there disclosures of financial interests or other personal arrangements from the research team?
No.

What happens if I withdraw from this research?
You may withdraw from this study at any time. If you choose to leave the study, data collected prior to your withdrawal will be used by the study.

You may withdraw your consent at any time and stop participating in this research study. Leaving the study will not impact your ability to receive any other benefits that you would have received otherwise. Note, you must complete all of the tasks for each time point to receive the payment for that respective time-point. Other than medical care that may be provided and any other payment specifically stated in the consent form, there is no other compensation available for your participation in the research.

You may withdraw by simply navigating away from the study webpage and/or not returning to the second time point.

The principal investigator, Captain Jeffrey M. Osgood, Ph.D., may decide not to allow you to continue participating in this study if you fail to comply with the procedures as outlined in this form.

The sponsor of this research study may end the research study and/or your participation in this research study for safety reasons or funding reasons.

We will tell you if we discover any significant or new information during the study that may affect your health and willingness to continue participation. This would be done via a mass-e-mail to all MTurk users who participated in any part of this study.

Who can I contact if I have questions about my rights as a research participant?
If you have questions about your rights as a research volunteer in this study, you may contact the Human Subjects Protection Branch, Walter Reed Army Institute of Research 503 Robert Grant Avenue, Silver Spring, MD 20910, phone number 301-319-9940 and email usarmy.detrick.medcom-wrair.mbx.hspb@mail.mil.

Taking part in this research study is your decision. Your participation in this study is voluntary. You do not have to take part in this study, but if you do, you can stop at any time. You have the right to completely withdraw from continued participation at any point in this study without penalty or loss of benefits to which you are otherwise entitled.
If there is any portion of this document that you do not understand, contact the principal investigator before signing the form.

Where can I find prior research related to this study?

This study is testing a new computer task that has not been published in prior research. However, the following recently published paper discusses related research:

Tuente, S. K., Bogaerts, S., & Veling, W. (2019). Hostile attribution bias and aggression in adults-a systematic review. *Aggression and Violent Behavior*.
Clicking "agree and continue" means that you consent to participate in this research, at this time.

Appendix D

Demographics Questions

Instructions: Please respond to each of the following questions.

1. What is your age: _____
2. What is your gender:
    a. Male
    b. Female
    c. Prefer not to say
3. Please select your highest level of education:
    a. None
    b. Less than High School
    c. High School Graduate, diploma or equivalent
    d. Some college credit, no degree
    e. Trade/technical/vocational training
    f. Associates Degree
    g. Master's Degree
    h. Professional Degree
    i. Doctorate Degree
    j. Other

Appendix E

HBMT Stimuli and Instructions

Real Training:

You will be presented with words with some letters missing (e.g., AP_ LE). These can be completed to form either negative, or non-negative (i.e. positive or neutral) themed words. Some fragments could be completed to form more than one type of word.

Your job is to complete the word fragments to make positive and/or neutral themed words. When a word fragment appears on your screen (e.g., KI _ _), try to think of either a positive (e.g., KISS) or neutral (e.g., KITE) word that can be made by completing the fragment. As soon as you think of one, type the complete word into the text box and press enter. If the fragment can ONLY be completed to form a negative word (e.g., "KI_L" can only form "KILL"), then do not press anything and let the clock expire. You will have 12 seconds to respond. Please try to respond as quickly and as accurately as possible. The first five trials are for practice only and will not be recorded for data.

Fake-Training

You will be presented with words with some letters missing (e.g., AP_ LE). Your job is to complete the fragment to form a complete word. When a word fragment appears on your screen (e.g., KI _ _), try to think of a word that completes the fragment (e.g., KILT). As soon as you think of one, please type the complete word into the text box and press enter. You will have 12 seconds to respond. Please try to respond as quickly and as accurately as possible. The first five trials are for practice only and will not be recorded for data.

Stimuli:

	Stem Type	**Stem**	**(Possible) Solutions**
1.	(P) Positive/Neutral	SYM_ _ _HY	SYMPATHY
2.	Positive/Neutral	COM_ _ SS_ON	COMPASSION/COMMISSION
3.	(P) Positive/Neutral	WI_ _POWE_	WILLPOWER
4.	Positive/Neutral	ME_CY	MERCY
5.	Positive/Neutral	DISCI_LINE_	DISCIPLINED
6.	Positive/Neutral	MORA_	MORAL/MORAY/MORAS
7.	Positive/Neutral	FR_ _ND	FRIEND
8.	Positive/Neutral	PEA_ _ _UL	PEACEFUL
9.	Positive/Neutral	PR_D_NT	PRUDENT
10.	Positive/Neutral	NIC_	NICE
11.	Positive/Neutral	P_SI_IVE	POSITIVE

12. Positive/Neutral	T_L_RATE	TOLERATE
13. Positive/Neutral	C_NSID_ _ ATE	CONSIDERATE
14. Positive/Neutral	G_N_LE	GENTLE
15. Positive/Neutral	CA_M	CALM
16. Positive/Neutral	FA_R	FAIR
17. Positive/Neutral	G_ _D	GOOD/GLAD/GRAD/GRID/GILD/GOLD
18. Positive/Neutral	_ENEROU_	GENEROUS
19. Positive/Neutral	_ _ LAX_D	RELAXED
20. Positive/Neutral	AC_EPT_ _G	ACCEPTING
21. (P) Negative	E_IL	EVIL
22. (P) Negative	TOR_U_E	TORTURE
23. Negative	REV_N_E	REVENGE
24. Negative	AN_OY	ANNOY
25. Negative	VIC_O_ S	VICIOUS
26. Negative	E_EM_	ENEMY
27. Negative	VILL_ _ _	VILLAIN
28. Negative	B_ _TAL	BRUTAL
29. Negative	HE_ _ISH	HELLISH
30. Negative	DESTRC_ _IVE	DESTRCUTIVE
31. Negative	AB_ _DON	ABANDON
32. Negative	RID_ _ULE	RIDICULE
33. Negative	EX_ _UTE	EXECUTE
34. Negative	C_ _RCE	COERCE
35. Negative	W_ _PON	WEAPON
36. Negative	_ _OOT	SHOOT
37. Negative	B_ _RAY	BETRAY
38. Negative	CA_ _OUS	CALLOUS
39. Negative	INH_ _ANE	INHUMANE
40. Negative	LIA_	LIAR
41. (P) Ambiguous	_UNCH	PUNCH/LUNCH/MUNCH/BUNCH
42. (P)Ambiguous	_ _ _ENSIVE	OFFENSIVE/EXTENSIVE/ EXPENSIVE/DEFENSIVE
43. (P)Ambiguous	PERSE_ _ _E	PERSECUTE/PERSEVERE
44. Ambiguous	R_ _ _LESS	RESTLESS/RUTHLESS
45. Ambiguous	REJ_ _ _	REJOIN/REJECT
46. Ambiguous	SM_ _ _	SMILE/SMACK/SMART/ SMOKE/SMITH/SMOTE/SMITE

47. Ambiguous	_ _ SULT	INSULT/RESULT
48. Ambiguous	HEART_ _ _ _	HEARTLESS/HEARTFULL
49. Ambiguous	_ _CLUDED	EXCLUDED/INCLUDED
50. Ambiguous	HEL_	HELL/HELP/HELD/HELM
51. Ambiguous	_ATE	HATE/MATE/RATE/FATE/TATE/BATE
52. Ambiguous	HU_ _	HURT/HUGS/HUNG/HULE/HUED/ HUNK/HUNT/HUMP/HUGE/HURL
53. Ambiguous	ME_ _	MEAN/MEAL/MEAT/MEME/MEAD/ MELT/MENT/MEOW/MEND
54. Ambiguous	CR_ _L	CRUEL/CRAWL
55. Ambiguous	PROV_ _E	PROVOKE/PROVIDE
56. Ambiguous	A_USE	ABUSE/AMUSE/ACUSE
57. Ambiguous	KI_ _	KISS/KILL/KICK/KILT
58. Ambiguous	B_ _ TER	BITTER/BETTER/BUTTER
59. Ambiguous	H_ _ _FUL	HURTFUL/HELPFUL/HOPEFUL/ HANDFUL/HARMFUL/HATEFUL
60. Ambiguous	_ _ _MENT	TORMENT/AUGMENT/PAYMENT/ RAIMENT/SARMENT/SEGMENT/ ODDMENT/GARMENT/AUGMENT/ CLEMENT/FIGMENT/FERMENT/ ELEMENT/AILMENT
61. Ambiguous	_ _ _EFUL	SPITEFUL/HOPEFUL/DOLEFUL/ FATEFUL/WAKEFUL/BANEFUL/ HATEFUL
62. Ambiguous	W_ _KED	WICKED/WALKED/WINKED/WORKED
63. Ambiguous	HOSTI_ _	HOSTILE/HOSTING
64. Ambiguous	_ _ _GIVE	FORGIVE/MISGIVE
65. Ambiguous	STR_ _E	STRIVE/STRIKE/STRAFE/STRIFE/ STRIDE/STROBE/STROKE/STROVE/ STRIPE/STRIVE
66. Ambiguous	ATTA_ _	ATTACH/ATTACK
67. Ambiguous	EXPLO_E	EXPLODE/EXPLORE
68. Ambiguous	ANGE_	ANGER/ANGEL
69. Ambiguous	INS_ _T	INSULT/INSECT/INSERT
70. Ambiguous	SM_CK	SMACK/SMOCK
71. Ambiguous	R_DE	RUDE/RIDE
72. Ambiguous	_IGHT	FIGHT/SIGHT/RIGHT/ BIGHT/EIGHT/TIGHT

73. Ambiguous	EN_AGE	ENRAGE/ENGAGE
74. Ambiguous	MU_ _ER	MURDER/MUTTER/MUSTER/MUCKER/ MUDDER/MUMMER/MUNTER
75. Ambiguous	OFF_ _ _	OFFEND/OFFICE/OFFERS/ OFFISH/OFFSET
76. Ambiguous	_OCK	MOCK/SOCK/COCK/DOCK/ JOCK/LOCK/NOCK
77. Ambiguous	P_ _ _FUL	PAINFUL/PLAYFUL/PITIFUL/ PALMFUL/PAILFUL
78. Ambiguous	BU_ _Y	BULLY/BUDDY
79. Ambiguous	MIS_EAD	MISLEAD/MISREAD
80. Ambiguous	FOR_ _ _E	FORGIVE/FORSAKE
81.		

Note: (P) indicates practice trial.

Appendix F

State Aggression Questionnaire

Please indicate how often you have done each behavior during the past ***24 hours***.

During the ***PAST 24 HOURS***, how often have you:

Get angry with someone and yell or shout at them.
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

Get angry with someone and kick or smash something, slam the door, punch the wall, etc.
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

The following set of questions is asking about your ***ONLINE BEHAVIOR OVER THE PAST 24 HOURS.***

I have removed or refused another person on a contact list for a chat, social network, or instant messaging program, without him/her doing anything and only for being who he/she was
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have posted rude or unfriendly comments about someone on social networks.
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have insulted someone using text messages or instant messaging programs (e.g., WhatsApp, SMS).
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have made a false complaint about someone on a forum, social network, or online game.
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have plotted with other people to ignore someone on social networks.
1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have posted or shared rumors or negative comments or negative news about someone on a social network

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

*I have "liked", shared, or otherwise demonstrated support for negative content about another person online or on social media.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

The following questions are asking about your ***DRIVING BEHAVIORS OVER THE PAST 24 HOURS***

Have you driven in the past 24 hours: Yes/No

I have called other drivers names aloud (e.g., "Jerk!", "Idiot!")

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have made negative comments about other drivers

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have yelled questions like "Where did you learn how to drive!?"

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have glared at other drivers.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have called other drivers mean names under my breath.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have sworn at other drivers aloud.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have sworn at other drivers under my breath.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have shaken my head or made other negative gestures at other drivers.

1 = Never 2 = One Time 3 = Two Times 4 = Three or Four Times 5 = Five or more times

I have yelled at other drivers.

1 = Never	2 = One Time	3 = Two Times	4 = Three or Four Times	5 = Five or more times

I have made negative comments about other drivers under my breath.

1 = Never	2 = One Time	3 = Two Times	4 = Three or Four Times	5 = Five or more times

I have given other drivers a dirty look.

1 = Never	2 = One Time	3 = Two Times	4 = Three or Four Times	5 = Five or more times

I have thought negative things about other drivers like "Where did you get your license?"

1 = Never	2 = One Time	3 = Two Times	4 = Three or Four Times	5 = Five or more times

Items adapted from:

Álvarez-García, D., Barreiro-Collazo, A., Núñez, J. C., & Dobarro, A. (2016). Validity and Reliability of the Cyber-aggression Questionnaire for Adolescents (CYBA). *The European Journal of Psychology Applied to Legal Context*, *8*(2), 69-77.

Deffenbacher, J. L., Lynch, R. S., Deffenbacher, D. M., & Oetting, E. R. (2001). Further evidence of reliability and validity for the Driving Anger Expression Inventory. *Psychological Reports, 89,* 535-540.

Deffenbacher, J. L., Lynch, R. S., Oetting, E. R., & Swaim, R. C. (2002). The Driving Anger Expression Inventory: A measure of how people express their anger on the road. *Behaviour Research and Therapy, 40,* 717-737.

*Indicates an item created by the PI and added to the study.

Appendix G

Trait anger Questionnaire

I am a hotheaded person.

1 = Strongly Disagree	2	3	4	5 = Strongly Agree

I have a fiery temper.

1 = Strongly Disagree	2	3	4	5 = Strongly Agree

Citation: Wilk, J. E., Quartana, P. J., Clarke-Walper, K., Kok, B. C., & Riviere, L. A. (2015). Aggression in US soldiers post-deployment: Associations with combat exposure and PTSD and the moderating role of trait anger. *Aggressive behavior*, *41*(6), 556-565.

Appendix H

State Emotion Questionnaire

How well do the following statements describe how you have **FELT OVER THE PAST 24 HOURS?**

I have felt angry.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have felt joyful.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have felt stressed.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have been energetic.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have been relaxed.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have gotten frightened easily.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have gotten irritated easily.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

I have not been easily annoyed.

1 = Extremely uncharacteristic of me.	2	3	4	5 = Extremely characteristic of me.

Citation: Goldberg, L. R. (1999). A broad-bandwidth, public domain, personality inventory measuring the lower-level facets of several five-factor models. In I. Mervielde, I. Deary, F. De Fruyt, & F. Ostendorf (Eds.), *Personality Psychology in Europe*, Vol. 7 (pp. 7-28). Tilburg, The Netherlands: Tilburg University Press.

Goldberg, L. R., Johnson, J. A., Eber, H. W., Hogan, R., Ashton, M. C., Cloninger, C. R., & Gough, H. C. (2006). The International Personality Item Pool and the future of public-domain personality measures. *Journal of Research in Personality, 40*, 84-96.

Quartana, P. J., & Burns, J. W. (2007). Painful consequences of anger suppression. *Emotion*, *7*(2), 400-414.

Appendix I

Unanticipated Problem Log

Division of Human Subjects Protection Protocol Deviations/Unanticipated Problem Log

Study Name:	**Principal Investigator:**
WRAIR Protocol Number:	**PI or Study Coordinator Contact info:**

SUBJECT INITIALS/ ID#	DATE	Deviation?	MAJOR Deviation?	Unanticipated Problem?	UPIRTSO?	Description of Event

I acknowledge the above-listed protocol deviations/unanticipated problems for this study.

_____ _____

Principal Investigator Signature Date