

Undergraduate Research Symposium May 19, 2017 Mary Gates Hall

Online Proceedings

2K

PSYCHOLOGICAL AND INTERPERSONAL FUNCTIONING

Session Moderator: Todd Herrenkohl, Social Work

MGH 271

3:30 PM to 5:15 PM

* Note: Titles in order of presentation.

The Interconnectedness between Mindset, Conscientiousness, and Self-Handicapping

Emily Renee (Emily) Clouse, Junior, Interdisciplinary Arts & Sciences (Psychology), UW Tacoma

Undergraduate Research Conference Travel Awardee

Troy Charlton, Junior, Interdisciplinary Arts & Sciences (Psychology), UW Tacoma

Bobby Chuan (Bobby) Wang, Junior, Interdisciplinary Arts & Sciences (Psychology), UW Tacoma

Tyler J. Brown, Sophomore, Interdisciplinary Arts & Sciences (Psychology), UW Tacoma

Mentor: Rose Njoroge, SIAS

The achievement gap is one of many unfortunate phenomena that plague civilization because it leads to other forms of inequality such as the pay gap, exploitation, and the gap in education. Stanford Psychologist Carol Dweck postulates that there are two mindsets: fixed and growth. People with a fixed mindset assume that intelligence and other attributes are predetermined, while those with a growth mindset believe that most human traits are malleable. Within the world of academia, mindset and other well-established factors such as The Big Five Personality trait of Conscientiousness and self-handicapping consistently prove to be reliable predictors of achievement. Our aim is to examine the relationship between mindset, self-handicapping, and conscientiousness. Broader implications of our research include understanding the accuracy of these factors in predicting GPA, allowing us to expand on current research. Nineteen students completed a questionnaire containing a Mindset Survey, the IPIP-NEO-120 containing only questions regarding conscientiousness, and the Worker Scale used to assess personal levels of academic self-handicapping. We expected results to yield the following: a) positive correlation between conscientiousness and growth mindset, b) both growth mindset and conscientiousness will correlate with scores on the Worker Scale, and c) positive correlation between scores on all three measures and overall GPA. Consistent with prior research, most present hypotheses were supported in this correlational study. However, results

supported a negative correlation between GPA and mindset and conscientiousness. Limitations of our study included a small sample size, demand characteristics, and evaluation apprehension.

The Effects of Grammaticality and Morphological Complexity on the P600 in L2 English Speakers

Trevor Kincaid Mc Allister (Trevor) Day, Senior, Linguistics

Mary Gates Scholar, UW Honors Program,

Undergraduate Research Conference Travel Awardee

Mentor: Lee Osterhout, Psychology

Mentor: Judith McLaughlin

It is an open question how similar second-language processing is to native-language processing. One way to measure language processing is through the use of scalp-recorded electroencephalography (EEG). Event-related potentials (ERPs) are specific patterns found in EEG recordings. The P600 is an ERP characterized by a brief increase in voltage 600 ms after a stimulus with a syntactic anomaly like *"He is read his book," allowing measurement of whether a subject recognizes an error. Learners show native-like P600s quite early, after about 80 hours of classroom instruction. In native speakers, morphologically complex verbs elicit a larger P600 when ungrammatical than monomorphemic verbs. A morphologically complex verb is one made of more than one morpheme, like "eat-ing." For example *"The sheep should eating," elicits a larger response than *"The sheep were eat." Native speakers of Mandarin, unexposed to any other language before age five, will be recruited through the Psychology Subject Pool. They will be presented with English stimuli adapted from a list of 120 sentences in a full 2x2 cross of grammaticality and complexity. Each participant will see one version of each sentence, plus an additional 60 grammatical filler sentences. By averaging across like trials, variance due to possible lexical effects is removed and the effects of grammaticality and complexity are isolated. Presumably, native speakers use the optimal processing strategy, indicated

by P600 variability. If learners show variance, it will indicate that their language processing is more native-like. If they don't, it will indicate that learners at the ability tested do not have access to fully native-like processing. Therefore, I hypothesize that, of the non-native speakers showing P600 responses to verb violations, only the most advanced will show variation, indicating adoption of the optimal processing strategy. Findings will help us understand how new languages are learned, and possibly offer pedagogical suggestions.

The Relationship between Interpersonal Functioning and Suicidality among a High-Risk for Suicide Sample

Jiwon Jung, Senior, Psychology

UW Honors Program

Mentor: Marsha Linehan, Psychology

Mentor: Kevin Kuehn, Psychology, Behavioral Research & Therapy Clinics

The Diagnostic and Statistical Manual of Mental Disorders V (DSM V) characterizes Borderline Personality Disorder (BPD) as impairments across social functioning (e.g., an inadequately developed, unsteady self-image and constant conflict in relationships) and personality traits (e.g., negative affectivity, rejection sensitivity, impulsivity, and hostility). Because of these impairments, people with BPD frequently encounter serious problems such as emotion dysregulation and suicidality. Emotion dysregulation is defined as a lack of emotional comprehension, inability to cope with emotions in adaptive ways, and unacceptance of distress as part of goal accomplishment, and the lack of ability to pursue a goal in distress. Self-injurious behaviors (SIB), which captures both suicide and non-suicidal self-injury (NSSI), is also an issue to note for people diagnosed with BPD, because they are at higher risk for SIB. It is evident that emotional dysregulation and suicidality are clear disturbances to having a balanced, healthy life. The study pertains to investigate the relationship among emotion dysregulation, rejection sensitivity, and SIB across the patients' treatment timeline. We first hypothesize a direct relationship between emotion dysregulation and SIB; prior research suggests that diagnosis of BPD will increase the likelihood of suffering from emotion dysregulation and SIB respectively. This is crucial, because it tests the theoretical model of the relationship between the two variables. Our second hypothesis aims to take a scope at how rejection sensitivity exerts a mediator effect on the relationship between emotion dysregulation and SIB among individuals diagnosed with BPD. We conjecture that higher rejection sensitivity will strengthen these two relationships. The study recruited 99 females diagnosed with BPD to assess their emotion dysregulation, rejection sensitivity, and SIB. Based on the analyses, we expect to provide an empirical support for the theoretical model and encourage future research to better promote health for individuals diagnosed with BPD.

Genetic Predisposition to Generalized Anxiety Disorder (GAD)

Molly Elizabeth (Molly) Miller, Senior, Community Psychology (Bothell)

Mentor: Charles Collins, Interdisc. Arts and Sci.

Within the field of psychology, under the broad umbrella of Generalized Anxiety Disorder (GAD), researchers seek to discover what could either predispose or influence a person to develop GAD; both environmental and biological factors are often investigated. Researchers have looked into familial structures, peer stimulus, age, and living and schooling environments to determine risk factors for GAD as well as examined personal goals and what constitutes success in an individual's minds. However, when taking into account all of the differing data claiming to know the cause and biggest risk factors for GAD, the most compelling data backed with minimally debated research is a genetic predisposition to this mental illness. Data compiled from a variety of researchers worldwide was examined in a literature review during the course of this research. This review walks through the genetic variation identified as the potential predictor of GAD. It gives a background on the variation and an explanation as to why it is thought to be a predictor. Additionally, alternative conclusions are presented to show the breadth of information about GAD and the vast variety in potential influencers in the development of this mental illness. This research is important to know because when a genetic predisposition can be identified, additional risk factors can be determined and prevention plans can be put in place in order to deter an individual from ever developing the mental illness. Furthermore, side effects of medications used to treat GAD can be predicted if the genetic predisposition of one person matches that of another.

Desirability Bias and Trust on Weather Forecast

Chao Qin, Senior, Psychology

Mentor: Susan Joslyn, Psychology

Desirability bias, or wishful thinking, denotes that our desire toward certain outcomes affects perception of predictive information. The effects include altered perception of probability of events and altered trust ratings towards information in line or not in line with the desire. Previous studies found the bias robust in fields such as card drawing, where subjects predicted the probability of the card drawn from a deck. I designed and acted as the sole investigator of this independent study to explore the effect of desirability bias in weather forecasting, a previous untouched area by desirability bias researchers, which in its essence involves uncertainty. This study also strived to detect a potential residual effect in trust on future forecasts. I speculated that the distrust caused by the bias targets the source of information, thus all future forecasts, even those not paired with a desire, are affected. Over 300 subjects recruited from ORPP, a UW program recruiting psychology students as research subjects, participated in a

computer based single-blind test where they were exposed to 5 hypothetical weather forecasts predicting snow or no snow on respective days. A prompt was introduced in trial 3 to induce a desire for a certain weather. Trial 4-5 were used to measure residual effects. Trust ratings and probability estimation of weather events and self-reported awareness of the bias were measured. The result revealed a small but significant effect of desirability bias in both trust and probability estimation. However, I found no residual effect. Half of subjects reported aware of the bias. The result also suggested the potential role of motivational pressure as a moderator in the perception of probabilistic information, warranting future studies. This study casted light on the effect of desire in perceiving forecasts and helped us better understand how the public perceive weather forecasts under different circumstances.

The Role of Flow in Athletic Competition: An Investigation through Whitman College Athletes

Cherokee Washington, Senior, Psychology, Rhetoric , Whitman College

Mentor: Emily Bushnell, Psychology, Whitman College

In the 1970s, psychologist Mihaly Csikszentmihalyi established the concept of "flow;" a universal experience in which an individual enters a psychological state that allows for optimal performance. When in this state, individuals will experience several specific factors such as intrinsic motivation, task concentration, and perception of abilities that all work together to define "flow." Today, many athletes strive to attain flow in order to achieve excellence in competition. My presentation explores flow within athletics as a promoter of good performance in competition. I examine whether or not flow is responsible for optimal performance or, conversely, if good performance stimulates flow. Through an experiment involving Whitman College athletes, several pre- and post-game surveys, and performance data from a targeted competition, I suggest the overall function of flow in athletics.

Effect of Motivational Pressure on Trust of Probabilistic Weather Forecasts

Linan Yue, Junior, Psychology

Chao Qin, Senior, Psychology

Mentor: Susan Joslyn, Psychology

Weather forecasts often contain some level of uncertainty. Previous studies suggested that probabilistic forecast with percentage probability information usually induces higher trust rates and better decision quality in subjects than does deterministic forecasts. Two recent studies at UW Decision Making with Uncertainty Lab found that the effect of better decision quality or higher trust ratings in probabilistic information was varied due to the existence of a motivational pressure driven by a goal with rewards or preference of a weather scenario. These findings were both unexpected and

not part of original hypothesis. The purpose of this study is to find out whether motivational pressure moderates the effect of probabilistic information versus deterministic information on trust. The hypothesis is that the presence of motivational pressure leads to higher trust in probabilistic forecasts than in deterministic ones, while lack of motivation attenuates the difference in trust between probabilistic and deterministic forecasts. This study is designed to be a single-blind between-subject experiment with two distraction sections and one experimental section. In the experimental section the subjects are exposed to a hypothetical scenario where subjects are prompted to prefer high or low temperature or to have no preference, and be given 6 hypothetical temperature forecasts for which they will provide trust ratings. 90 subjects are recruited from Online Research Pool Program so far. The preliminary results indicate no significant preference in promoted temperature information in each condition. There is a trend shows higher trust ratings in deterministic information especially in low temperature condition, however, this result is not statistically significant at this point. It is possible for this result to become significant when a total of 360 subjects are recruited. The potential finding of this study may shed light on the role of motivational pressure in perceiving uncertainty, and facilitate in advancing forecast communication formats.