18th Annual Student Research Forum
March 8, 2022
The Ohio State University at Newark
18th Annual
Student Research Forum

Tuesday, March 8, 2022
The Ohio State University at Newark
Student Research Forum

Purpose:
To promote student research activities and increase the number of students undertaking honors theses

To increase student-faculty research endeavors and faculty mentoring of students in research activities

To prepare Ohio State Newark students for participation in other research conferences, including The Ohio State University Denman Undergraduate Research Forum

We thank the following participants who make this forum possible:

Dean/Director William L. MacDonald, PhD, for his initiative and support of the forum

JUDGES

Oral Presentations
• Christopher W. Robinson, PhD, Assistant Professor, Psychology
• Jack Richardson, PhD, Associate Professor, Art Education
• Melissa Buelow, PhD, Associate Professor, Psychology

Poster Presentations
• James H. Wirth, PhD, Assistant Professor, Psychology
• Katie Blockside, MA, Lecturer
Agenda

1 – 4:00 p.m.  Student Presentations
4:15 p.m.      Awards Ceremony

Presentation of awards by Nathaniel Swigger, PhD
Associate Professor, Political Science, Ohio State Newark

Oral Presentations, Completed Research
• Elijah Colvin
• James Theis

Oral Presentation, Proposed Research
• Katherine Stuart

Poster Presentations, Completed Research
• Bernice Agyepong
• Piper Clark
• Mackenzie Elliott
• Sheroz Faisal
• Makayla Mills
• Jarrett Allen Rardon

Poster Presentations, Proposed Research
• Piper Clark
• Jarrett Allen Rardon
Oral Presentations
Completed Research

Seasonal Pattern of Activity and Mortality in Northern Short Tailed Shrews

ELIJAH COLVIN

Faculty Sponsor: Paul Andreadis (Evolution, Ecology and Organismal Biology)

Category: Oral Presentation - Completed Research

Abstract:
The tiny size of shrews is associated with a short lifespan. Authors going back to classical times have noted a great increase in shrew mortality in the fall. However, the exact source of this mortality has not been closely studied. We studied the seasonality of mortality in the shrew Blarina brevicauda in central Ohio. We used a novel census method of systematically searching recreational bike paths. Like previous researchers found a significant clustering of mortality in the fall (chi squared test, P < 0.001). Skeletal specimens were prepared and given a forensic examination. Specimens with bone fractures were categorized as being consistent with either Anthropogenic Trauma (e.g. hit by bicycle, causing widespread fracturing), or Predatory Trauma (fractures restricted to head and neck). Even though some predator-killed specimens may have received additional damage post mortem, half of the specimens we examined fell into the Predator Trauma category. Some of the specimens were especially clear as to the source of mortality, e.g. conspicuous punctures in the skull that match the tooth size of predatory mammals. Some potential predators include domestic cats, red foxes and members of the weasel family. In spite of the fact that shrew carcasses frequently are found on human paths, many of these carcasses may be the result of predator behavior. When grasped by a predator, shrews can emit a repulsive odor, which may result in many predators rejecting the carcass for consumption. Future researchers could study predator behavior to confirm this interpretation. Molecular methods may be able to genetically identify predator traces on the shrews.
“You’re Not My People!” Ostracizing Burdensome Social Groups

JAMES THEIS

Faculty Sponsor: James Wirth (Psychology)

Category: Oral Presentation - Completed Reserach

Abstract:

Problem or Purpose: Ostracism (being excluded and ignored) can lead to adverse consequences including thwarted satisfaction of fundamental needs (e.g., belonging), social pain, and negative affect (e.g., Williams, 2009). Groups ostracize burdensome group members due to the pain their burden causes (Okdie & Wirth, 2018; Wirth et al., 2020). By knowing burdensome members are ostracized within a group context, we tested if the same processes occur when large social groups are ostracized. We examined if participants were more likely to ostracize the opposite gender (outgroup) versus the same gender of the participant (ingroup) after the outgroup is described as burdensome compared to a beneficial description and compared to the participant’s ingroup.

Method: Participants (n=498) read a Human Resource summary describing demographic changes in U.S. businesses due to an increase in the outgroup gender. We manipulated the effects of the gender outgroup to be either positive (beneficial) or negative (burdensome). Participants then imagined an interaction with either an ingroup or an outgroup, followed by describing emotions they felt. Afterwards, participants evaluated their imagined interaction by reporting their psychological pain, desire to ostracize the group, pain as a motivator for ostracism, and negative effect.

Results: We found a significant interaction between the Outgroup Description and the Type of Interaction participants imagined on all measures (F=5.03, ps<.025, p<.01). Generally, reading about a burdensome outgroup and interacting with that outgroup led to more ostracism and negative outcomes (i.e., feeling pain) compared to reading about a burdensome outgroup and interacting with an ingroup (ps<.003). Additionally, the outgroup described as burdensome caused more negative responses compared to interacting with an ingroup, regardless of how the outgroup was described.

Conclusion: We found that ostracism processes within a group elevate to larger groups, suggesting that entire social groups can be potentially ostracized if they are labeled as burdensome.
Oral Presentations

Proposed Research

Being Left Behind: How Do Individuals Respond to a Group Member Leaving?

KATHERINE STUART

Faculty Sponsor: James Wirth (Psychology)

Category: Oral Presentation - Proposed Research

Abstract:

Purpose: Ostracism (being excluded or ignored) is frequent and painful (Williams, 2009). For this reason, individuals tend to be hyperaware of any indication of ostracism (Leary & Baumeister, 2000). Our study examines whether this hypersensitivity extends to producing feelings of ostracism. We hypothesize that an individual will experience greater social pain, increased feelings of ostracism, and lower ratings of basic need satisfaction (e.g., belonging, meaningful existence) when compared to a member remaining in a group or a new group member joining.

Methods: Participants will be recruited through an online sign up. They will perform a group task in which each group member comes up with a word associated with three different words. For six rounds, participants will report their answers and see the other members’ answers. Participants will be randomly assigned into one of three conditions: a group member will either be 1). leaving or 2). joining the group in the middle of the task, or 3). remaining in the group throughout the task. Afterward, participants will report their feelings of ostracism, basic need satisfaction, negative effect, commitment to the group, and relationships with individual members, as well as evaluate the other members’ personality traits.

Anticipated Results: Compared to the remaining and joining conditions, we expect participants to experience lower basic need satisfaction, greater negative affect, and increased social pain. We also expect to find low ratings of commitment to the group, poorer relationships with individual members, and poorer evaluations of members’ personality traits.

Conclusion: The goal of this study is to discover the effects of a group member leaving and how that relates to ostracism. A group member leaving, despite the continuation of the group, may further reflect the pervasiveness of ostracism in our daily lives.
Evaluating the Five Facets of Mindfulness to Predict COVID-19 Stress

BERNICE AGYEAPON

Faculty Sponsor: Jennifer Kowalsky (Psychology)
Category: Poster Presentation - Completed Research

Abstract:
Background: Mindfulness is defined as openly attending with awareness to one’s experience in the present moments in a nonjudgmental way. Mindfulness can be measured across five facets including observing, describing, nonjudgment of inner experience, nonreactivity to inner experience, and acting with awareness (Bohlmeijer et al, 2011). Higher levels of mindfulness are associated with lower stress. The COVID-19 pandemic has been a constant stressor globally and mindfulness may increase resilience during this time. Research shows that mindfulness has been associated with lower anxiety, stress, and depression during the pandemic; however, the relative importance of the five facets has not been examined. The aim of this study was to investigate if the five facets of mindfulness predicted subsequent COVID-19 stress within the U.S.

Method: A sample of 433 participants was recruited through MTurk early in the pandemic and completed surveys on March 19th, 2020, and six months later. Following consent, participants provided demographic information and completed the Five Facet Mindfulness Questionnaire (Bohlmeijer et al, 2011) and the COVID Stress Scale (Taylor et al, 2020).

Results: A hierarchical linear regression analysis with demographic characteristics (step 1) and mindfulness facets (step 2) predicting COVID stress was significant (F(10, 412) = 7.748, p < .001, R² = .158). After controlling for age, race, gender, education, and income, greater acting with awareness early in the pandemic predicted lower COVID-19 stress at six month follow up (β² = -.255, p < .001). The remaining facets were not significant (p < .138).

Discussion: The five facets of mindfulness did not universally predict stress from the COVID pandemic. Acting with awareness (attending to one’s activities of the moment) was the only significant predictor of lower stress. This suggests that future research should explore interventions enhancing acting with awareness to foster resilience and reduce stress.
False Personality Feedback Affects Decision Making Task Performance

PIPER CLARK

Faculty Sponsor: Melissa Buelow (Psychology)

Category: Poster Presentation - Completed Research

Abstract:
Problem: Stereotype threats, such as negative outcomes of aging (Hess et al., 2009) or social identity (Inzlicht & Kang, 2010), can negatively impact one’s ability to successfully perform cognitive tasks. Negative feedback about aspects of one’s personality or cognition can lower performance on cognitive tasks (Cianci et al., 2010; Luo & Yu, 2017), including on measures of decision making (Inzlicht & Kang, 2010; Anand et al., 2016). The present study examines whether false negative personality feedback is more associated with risky decisions than false positive personality feedback.

Procedure: 66 participants (ages 18-39 [M=19.09, SD=3.17], 27.3% Male, 63.6% White) completed the 10-item Hypersensitive Narcissism Scale (Hendin & Cheek, 1997). They were randomly assigned to receive one of two types of false feedback about their scores: 1) false positive feedback of being low in narcissism (23rd percentile; n=33) or 2) false negative feedback of being high in narcissism (87th percentile; n=33). Next, they completed decision-making tasks in a random order: Dictator Game (Brocklebank et al., 2011), Ultimatum Game (Harle & Sanfey, 2010), and Game of Dice (Brand et al., 2002).

Results: On the Dictator Game, no significant group differences emerged in money earned by the participant or the computer, ts<0.96, ps>.171, ds<0.26. On the Ultimatum Game, participants earned more money when they received positive feedback versus negative feedback, t(61)=1.70, p=.047, d=0.43. On the Game of Dice, participants made safe decisions when they were given positive feedback versus negative feedback, t(64)=2.68, p=.005, d=0.66.

Conclusion: False personality feedback led to different decisions on a behavioral task when participants must agree with the other player to maximize their profit (Ultimatum Game) and assessing decision making under explicit risk (Game of Dice). Future research should examine whether this finding generalizes to other decision making and executive function tasks, and whether the personality characteristic manipulated matters.
Understanding Intention to Wear a Mask

MACKENZIE ELLIOT

Faculty Sponsor: Jennifer Kowalski (Psychology)
Category: Poster Presentation - Completed Research

Abstract:
Background: COVID-19 emerged as a health threat toward the end of 2019 and met pandemic status March 11th, 2020. Because COVID-19 is primarily spread through person-to-person interactions, preventive health behaviors (e.g., wearing masks) have been recommended (CDC, 2021). Despite their effectiveness, not everyone is complying with wearing a mask. One theory to predict behavior is the Theory of Planned Behavior (TPB), which states that intention predicts behavior and that attitudes, what close others are doing (norms) and perceived control predict intention. The aims of this study were to use an extended TPB, adding individualism, collectivism, altruism, and conspiracy beliefs about COVID-19, to test 1) intention to wear a mask and 2) the likelihood of wearing a mask in indoor settings.

Method: Adults in the U.S. were recruited through MTurk to complete an online study. Following consent, participants (n=1,148) self-reported demographics and completed the study survey, which included measures of TPB variables, individualism and collectivism, altruism, and conspiracy beliefs.

Results: The sample was on average 40.4 years (SD=13.6), 60.8% identified as women (n=698), and 42.2% were White (n=484), 28.2% were Black or African American (n=324), and 14.7% were Asian or Asian American (n=169). A hierarchical linear regression predicting intention to wear a mask was significant and revealed that more positive attitudes ($\beta=.24$, $p<.001$), greater norms ($\beta=.43$, $p<.001$), and higher perceived control ($\beta=.22$, $p<.001$) predicted greater intention to wear a mask. Endorsing more conspiracy beliefs predicted lower intention ($\beta=-.14$, $p<.001$). Individualism, collectivism, and altruism were not significant. Another hierarchical linear regression predicting likelihood of wearing a mask was and the same pattern for the predictors emerged.

Discussion: The results of this study provide support for the TPB to understand intention to and likelihood of wearing a mask. After controlling for the TPB variables, conspiracy beliefs were significant, which underscores the importance of misinformation and the need for interventions.
A Mixed-Method Approach to Understanding COVID-19 Vaccine Uptake in the U.S.

MACKENZIE ELLIOT

Faculty Sponsor: Jennifer Kowalski (Psychology)

Category: Poster Presentation - Completed Research

Abstract:

Introduction: According to the CDC, as of November 10, 2021 in the U.S., over 46 million people have caught COVID-19 and 755,201 people have died. Vaccination successfully reduces risk of infectious disease, and the first COVID-19 vaccine received emergency use authorization (EUA) in the U.S. on December 11, 2020. Thus, a leading recommendation is vaccination to reduce spread of the virus and severity of illness. Despite availability, vaccine uptake has lagged. The present study sought 1) to test differences in anticipated likelihood of vaccination and subsequent vaccination behavior, and 2) understand the motivation for vaccine uptake (or lack thereof).

Method: Participants were recruited through MTurk; following consent, they completed surveys prior to COVID-19 vaccine EUA (Oct-Nov 2020) and following vaccine availability (Jun-Jul 2021). Measures included pre-EUA likelihood of obtaining a COVID-19 vaccine (rating 1=not at all likely, 7=very likely), vaccine uptake, and self-described reasons regarding why they obtained (or did not obtain) a COVID-19 vaccine. Quantitative analyses used SPSS and qualitative responses were coded using thematic analysis.

Results: The sample was on average 46.3 years old (SD=13.2, range=20-84), the majority identified as female (n=412, 58.4%), and White (n=586, 83.0%), followed by 6.4% Black (n=45) and 6.2% Asian (n=44). After excluding missing or not-interpretable responses (n=6), 706 participant responses containing 1583 codes remained. A significant difference in frequency of vaccine uptake by likelihood ratings emerged ($\chi^2(2)=181.3, p< .001$). Among participants with low likelihood ratings, 31.3% (n=57) had subsequently been vaccinated. In contrast, among participants who were undecided or had high likelihood ratings, 70.3% (n=161) and 90.2% (n=266) had been vaccinated, respectively. Across levels of pre-EUA vaccination likelihood, themes that emerged among those who had been vaccinated against COVID-19 included: protecting the self and others from COVID-19, severity of COVID-19, and a desire to “get back to normal.” Among those who had not yet received a COVID-19 vaccine, people with previously high likelihood ratings or who were
undecided reported safety concerns, a lack of access, delaying uptake, and beliefs that the vaccine was not needed. In contrast, for people with previously low likelihood ratings, themes included a lack of trust, in addition to safety concerns, and beliefs that the vaccine was not needed. Discussion: In line with COVID-19 vaccine trial research, similar themes regarding protecting the self and others, and returning to normalcy emerged among vaccine adopters (Wentzell & Racila, 2021). Health promotion efforts would likely benefit by including education around vaccine safety, accessibility, and benefits. Research to understand lack of trust around vaccines and strategies to build trust is warranted.
Multisensory Processing with Semantic Congruency

SHEROZ FAISAL

Faculty Sponsor: Chris Robinson (Psychology)

Category: Poster Presentation - Completed Research

Abstract:
Day to day life is filled with an array of stimuli for our sensory systems to process, but these stimuli rarely pertain to a single modality and can conflict or cooperate as a result. Prior work on the matter relays that semantic congruency between visual and auditory stimuli in which the sound of an animal coincides with the picture, appear to facilitate responses. Metrics such as a participant’s reaction time is faster, and their accuracy is greater in congruent trials (e.g., Thomas et al., 2017). Contrastingly, in Stroop-like tasks where incongruent stimuli cause modalities to conflict we see an increase in reaction time as well as a decrease in accuracy (Wright et al., 2003). This research aims to further this body of work by examining the multivariate process of multisensory processing.

This study will utilize the versatility of a Stroop-like task carried out on a young adult population. Participants in one block were told to ignore what they heard and determine if what they saw is an animal or a vehicle. In another block, participants had to ignore what they saw and determine if they heard an animal or vehicle. Auditory and visual stimuli were either presented in isolation (e.g., only a dog bark or picture of dog), congruent (dog paired with dog bark), or incongruent (dog paired with car horn).

The congruent presentations facilitated reaction times, while incongruent presentations hurt accuracy. Visual stimuli also had a greater influence on auditory responding than the other way around. These findings have important implications for our understanding of multisensory processing. Furthermore, this will expand our comprehension of the effects of cross modal perception and congruency on auditory and visual responding.
The Influence of Facial Coverings on Speech Intelligibility

MAKAYLA MILLS

Faculty Sponsor: Chris Robinson (Psychology)

Category: Poster Presentation - Completed Research

Abstract:
Facial coverings had become mandatory at the start of the COVID-19 pandemic which hindered the way society communicates as over half of our face is covered (Giovanelli, Valzolgher, Gessa, Todeschini, & Pavani, 2021). Masks act as a communication barrier as it excludes visual cues and facial expressions (Rahne, Frahlich, Plontke, & Wagner, 2021), as well as weakens the auditory signal of the speaker, especially in higher frequencies (Magee et al., 2020). The current study explored whether the effects of face masks and background noise impact speech intelligibility. Researchers also investigated the effects of the speakers’ gender, listening effort, and meta-cognitive monitoring. These aspects are important in visualizing the impacts that the COVID-19 pandemic has brought.

Eight short videos were presented, which consisted of the verbal listing of five nonsense words such as fobo, leru, and yido. These videos were presented by a male or female speaker, with or without a mask, and with or without background noise. They were then questioned on how difficult it was to hear the words. A multiple-choice test was given containing the presented word along with three foil words to which they were to pick the word they believed they heard. Meta-cognitive analysis was collected as participants had to guess how many words they got right.

Due to the presence of background noise, results indicate that participants had reported less confidence at test, experienced reduced speech intelligibility, and an increase in listening effort (level of hearing difficulty). It also suggests that masks did have an effect, but only when listening to a female speaker in a noisy environment. Findings contribute to previous research as it expands beyond the communication barriers of face masks by examining the effects of background noise on speech intelligibility and listening effort.
Relationships Between Behavioral Decision Making Tasks

JARRETT ALLEN RARDON

Faculty Sponsor: Melissa Buelow (Psychology)

Category: Poster Presentation - Completed Research

Abstract:
Over the past 25 years, researchers have developed multiple behavioral tasks to assess the decision-making construct; however, research frequently finds little evidence that the tasks assess the same construct (e.g., Aklin et al., 2005; Buelow & Blaine, 2015; Buelow & Barnhart, 2018). In addition, few studies examine reliability of test scores across different intervals of time (e.g., Buelow & Barnhart, 2018; Collado et al., 2014; White et al., 2008), limiting understanding of their test-retest reliability and limiting their use in clinical evaluations. The present study had two aims: 1) to assess correlations between performance on the Balloon Analogue Risk Task (BART), Beads task, and Risky Gains task at the same time and 2) to assess test-retest reliability over eight weeks. A total of 970 MTurk workers completed the study in May/June 2021 (Mage=38.32, SDage=12.38, 41.6% Male, 69.4% White). Participants were invited to complete the same tasks in August/September 2021, with a final sample of 335 workers completing Time 2 (Mage=41.11, SDage=12.95, 40.1% Male, 71.0% White). Participants completed the BART (Lejuez et al., 2002), Beads Task (Garety et al., 1991), and Risky Gains Task (Paulus et al., 2003) in a randomized order. At Time 1, performance on the BART was positively correlated with the Risky Gains but not the Beads task. The Beads task and Risky Gains were negatively correlated. Performance on the BART was highly correlated (rs=.525-.624) across the two time points. However, limited evidence of test-retest reliability was found for the Beads task (rs = .034-.24) and the Risky Gains task (rs=.086-.444). The BART and Risky Gains task may assess an overlapping element, risk-taking, in the decision-making process, whereas the Beads task may assess a different decision-making component. The lack of strong test-retest reliability for two of three tasks raises debate for use in clinical settings.
“y r u not txting me back?” Social Exclusion in Mobile Phone Communication

PIPER CLARK

Faculty Sponsor: Bradley Okdie (Psychology)

Category: Poster Presentation - Proposed Research

Abstract:
Problem: Computer-mediated communication is becoming more common especially through mobile text messaging. Some mobile phone operating systems have embedded features not available on other operating systems leading to color differences in text-explicitly declaring to users they are conversing with a member of their in-group (i.e., an individual who shares more commonalities than differences) or outgroup. Individuals develop positive biases towards in-group members often leading to negative perceptions and exclusion of out-group members. To my knowledge, this study will be one of the first to test whether ingroup bias exists in the context of text messaging conversations and if these biases motivate social exclusion.

Procedure: Participants will take the study online. After consenting to participate, participants will view an image of a text messaging conversation containing ingroup/outgroup cues. Participants will make perceptual judgments (including social exclusion judgments) about the individuals purportedly conversing in the image including. I predict participants will rate outgroup members significantly more negative on the dependent measures and will be more likely to indicate intentions to exclude outgroup members. Finally, participants will provide demographic information, be debriefed, and paid for their time.

Expected Results and Conclusions: I expect that people will demonstrate bias to members of their ingroup (operationalized as those using the same operating system) and derogate members of their outgroup. I anticipate this relation to be significantly stronger for individuals who highly identify with the brand of their mobile phone. If my predictions are supported, the results have the potential to demonstrate the existence of bias in a unique context that millions engage in daily.
The Effect of Prosody and Referent Animacy on Novel Noun Learning

JARRETT ALLEN RARDON

Faculty Sponsor: Julie Hupp (Psychology)

Category: Poster Presentation - Proposed Research

Abstract:
Prosody is how words are spoken. The current study will evaluate if different prosodies affect novel noun learning and if referent animacy changes this. Previous research showed that emotion prosody interfered with adults’ noun learning (West et al., 2017), but it had no effect on children (West et. al, 2021). However, the method varied across age groups, so the effect may have extended past the prosodies. Our research will expand the word prosodies in the learning task using both animate and inanimate referents.

A pilot study with undergraduate students (n=49) verified prosodic category (Doubt, Fear, Happy, Name, Warn) of 15 novel labels (e.g., tebos). The current study examined five prosodic categories (within participants) on novel noun learning for animate and inanimate referents (Aliens, Objects; between participants). Each participant viewed a 2.5 min video to learn 15 novel noun-referent pairings, with two presentations of each pairing. Different versions of the training videos ensured the prosody is counterbalanced across participants. Then, the participants completed a recognition test in which they heard the word in a neutral tone and were asked to select the correct referent when the trained referent was paired with three foil items: trained with same prosody, trained with different prosody, and new item. This train-test sequence was repeated four times. Then, participants completed a generalization task for five of the items. Accuracy across the recognition tests and generalization test will be analyzed with a 2 Referent (Object, Alien) x 5 Prosody (Doubt, Fear, Happy, Name, Warn) x 5 Test Phase (1, 2, 3, 4, Generalization) Repeated Measures ANOVA to explore the effect of prosodic category across referents with different animacy. This research is important because it helps us understand the use of prosody in the context of animacy and learning nouns.
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