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## 17. Psychology

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**Abstracts from the 2016 Oklahoma Research Day**  
**Held at Northeastern State University**

**05. Mathematics and Science**

**17. Psychology**

**05.17.01 Nonlinear Dynamical Systems in Visual Search**

**Haws,James** *University of Central Oklahoma*

**Shirali,Yasmin** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

**05.17.02 Resilience, Stress, & Autonomic Flexibility: A Polyvagal Perspective**

**Haws,James** *University of Central Oklahoma*

**Ray,Angelica** *University of Central Oklahoma*

**Jeyaraj-Powell,Tephillah** *University of Central Oklahoma*

Objective: Approximately 80% of the population is likely to experience a traumatic event sometime during their life; however, only a relatively small percentage actually develops a mental disorder. This study will examine psychological resilience in relation to autonomic functioning, indexed using electrocardiogram data to assess heart rate variability. Hypothesis: Higher levels of resilience are expected to be related with increased heart rate flexibility following a laboratory stressor, thus indicating great autonomic flexibility with which to regulate negative emotion, which is characteristic of resilience. Methodology: Participants will be connected to the ECG using 3 Ag-AgCl electrodes attached to the chest and abdomen. Participants will be instructed to be still and quiet while resting baseline is recorded. Participants will complete a 9 minute stress-inducing math task on a desktop computer. Post-stress resting activity will be assessed for 10 minutes then participants will be disconnected from the Biopac. Summary: This study will ostensibly unite the various characteristics within resilience by implicating a fundamental, physiological unifier - autonomic flexibility.

### **05.17.03 Hand Proximity Facilitates Visual Guidance and Recognition**

**Haws,James** *University of Central Oklahoma*

**Scott,Jenn** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

Objective: The purpose of this study is to examine if hand position facilitates object perception. Objects nears hands are likely important. Research has examined the effects of hand proximity on response time and accuracy in hull haptic-visual task, no analysis has been made concerning finer-grained structure of performance. Methodology: Participants completed 120 dual taks trials while maintaining steady patter of right-hand motion whilst simultaneously identifying English characters presented on a computer monitor positioned above the desk via an articulating monitor arm occluding participants' hands. Visual task responses were recorded from the left hand. The visual task included a a reticle that remained visible a the center of the screen while stimuli briefly appeared on the left or the right side of the reticle before being replaced with a mask. The staircase procedure was applied as needed to maintain a 75% correct identification rate. One each trial, a cue notified the participants to move the mouse from the right to the left side of the monitor. Another cue, 1200 ms later, cued the participant to return the mouse to the starting position. During that time, the characters appeared either in the lower left or right of the screen before being masked. Summary: The data were analyzed with the procedure Wavelet Transform Modulus Maxima, a way to measure fractal dimension of a time series.

### **05.17.04 Haptic Control of Eye Movements**

**Haws,James** *University of Central Oklahoma*

**Scott,Jenn** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

Objective: Eye-hand coordination is crucial to many important tasks. A Nonlinear Dynamical Systems approach assumes that eyes and hand are interacting facets of one complex oculomotor system in which physiological and task constraints interact to shape overall system behavior. Because of difficulty of collecting data from multiple people at the same time, few have tried it but we expect to be able to collect eye-movement dat during coordinated tasks in order to tease apart truly independent processes. Hypothesis: We expect to se increased complexity of joint tasks to be represented in larger exponents, meaning more dimensions are required to model the behaviors. Methodology: Participants were paired together to complete the study. Participants eye movements were measured via corneal and pupillary reflection using and Eyetribe. A handheld camber captured thumb movements of each participant. Participants played FIFA16 together and were given an opportunity to practice with the Wiimote. Participants were told the purpose of the game was to score as many goals as possible and win the game together. Summary:Eye movement and hand movement time series data were analyzed with nonlinear statistical methods in search for evidence of multi fractal structure. Multiple Holder exponents were obtained for both conditions, indicating that eye and hand movements were multi fractal.

### **05.17.05 Children's Vulnerability to Homicide, Abduction, or Infanticide Correlates with the Seasons**

**Sherwood, Heather** *University of Central Oklahoma*

**Mather, Robert** *University of Central Oklahoma*

Routine Activities Theory has documented that perpetrators use an organized and meticulous thinking process when selecting a victim. Likewise, majority of perpetrators know their victims, and crime scenes can look dramatically different depending on the age of the children. These criminal events are a major sociological issue that needs to be understood and combated against. Archival data from Google may provide media trends that take place as well as the seasons that children are more vulnerable. Results from the current research, show that fall tends to be when children are most vulnerable and winter is when children are least vulnerable. If societies can recognize who are likely victims, who the typical perpetrators are, and when these awful crimes tend to occur, crime rates will decrease.

### **05.17.06 The Effect of Racial Bias and Societal Norms on Eyewitness Testimony**

**Nesmith, Blake** *University of Central Oklahoma*

**Hancock, Thomas** *University of Central Oklahoma*

The purpose of the current research is to investigate how jurors reason in courtroom deliberations regarding eyewitness testimony. Previous research has not provided consistent results concerning the influence of racial bias in courtroom decisions (Mitchell, Haw, Pfeifer, & Meissner, 2005). It has also been noted that when an individual engages in counterstereotypical behavior, they typically experience negative reactions from others (Bosson, Prewitt-Freilino, & Taylor, 2005). However, the impact of violating racial stereotypes has not been fully investigated (Phelan & Rudman, 2010), especially in terms of courtroom proceedings. This study examines the influence of racial bias and violation of societal norms on jury decision-making. Participants will view two mock testimonies, one by a male and one by a female. In addition to gender, ethnicity of the witness will also be manipulated (e.g., testimony one might be read by a black male and testimony two by a white female). Participants will use two adjustable Likert scales to rate the believability and likability for each video, followed by a final verdict. We predict racial bias will affect the believability, likability, and overall verdict, but the ratings for the counterstereotypical testimony pairs will be impacted more so when compared to the conforming testimonies.

### **05.17.07 Testimonial and Distributorship Information Persuade College Multi-Level Marketing Targets**

**Sherwood, Heather** *University of Central Oklahoma*

**Mather, Robert** *University of Central Oklahoma*

We examined social cognitive factors that affected the receptiveness of college multi-level marketing targets to a persuasive message, including manipulated components of a sales pitch. Types of information influenced targets' familiarity with MLM and affected beliefs that MLM is a desirable model for consumers to purchase products.

## **05.17.08 Addiction Resistance: A Study of the Oklahoma Health Patterns Project**

**Hoffmeister, Jordan** *University of Oklahoma*

**Cohoon, Andrew** *University of Oklahoma*

**Lovallo, William** *University of Oklahoma*

Some individuals are resistant to alcohol use disorders despite high levels of intake. Addiction Resistance (AR) measures the disparity between alcohol consumption and alcohol use disorder symptoms; such that, individuals with higher AR exhibit fewer symptoms despite higher intake. Factors contributing to AR are not well understood. The aim of this study was to predict AR based on variables related to risk for addiction that are measured in the Oklahoma Family Health Patterns Project. Participants were healthy young adults ( $n = 844$ ) who were given measures of mood stability and risk taking tendencies, and were interviewed to determine alcohol intake, alcohol use disorder symptoms, and family history of substance use disorders (FH). AR was calculated using maximal lifetime intake and number of alcohol use disorder symptoms. A multiple linear regression analysis was run to determine which variables were the most predictive of AR. FH, neuroticism, impulsive antisociality, and sociability explained a significant amount of the variance of AR (adjusted  $R^2 = .10$ ,  $F(5, 838) = 19.86$ ,  $p < .001$ ). Emotional stability, risk avoidance, and norm adherence were found to be positively related to AR, while FH was negatively related. Individuals who are emotionally stable, norm adherent, risk avoidant, and have fewer family members with substance use disorders are more resistant to alcohol use disorders despite higher alcohol intake.

## **05.17.09 Manipulating Blink Rate May Influence Response Times on Visual Tasks**

**Shirali, Yasmin** *University of Central Oklahoma*

**Haws, Kyle** *University of Central Oklahoma*

**Vanhooy, Mickie** *University of Central Oklahoma*

**Scott, Jenn** *University of Central Oklahoma*

People blink for reasons besides to remove irritants and distribute tears; we blink when disinterested. If spontaneous blinks mark points of attentional disengagement as suggested, then manipulating blink rate may influence response times to visual stimuli. My hypothesis for this study is that rate of blinking will affect response times on a visual task. Increasing participant blink rate is expected to produce faster response times and higher accuracy than reducing blink rate. If we can find differences in performance due to blink rate, perhaps we can detect and modify undesirable blink rates (e.g., sleepy drivers or surgeons).

### **05.17.10 Directionality of Difficulty and Task Type Effect Response Time for a Visual Search**

**Abbott,Deah** *University of Central Oklahoma*

This experiment explores how difficulty directionality (increasing, decreasing, and random) and task type (simple, go/no-go, and choice) interact to affect mean reaction times (RT) for specific stimuli in a visual search. This relationship is viewed through the lens of Cognitive Load Theory and a rational decision-making framework in a within-subjects counterbalanced design. Stimulus difficulty was manipulated through increasing the distractor quantity and decreasing the opacity of the target and distractors. Cognitive Load Theory predicted response time to increase as stimulus difficulty increased. A rational decision-making framework predicted to find that these six variables explain a significant proportion of variance in response time for each stimulus in all nine conditions. The experiment supported the hypotheses. Better understanding how these commonly used tasks affect an individual is imperative.

### **05.17.11 Hand-eye coordination self-organizes during tasks within nonlinear time series analysis**

**Scott,Jenn** *University of Central Oklahoma*

**Haws,Kyle** *University of Central Oklahoma*

**Shirali,Yasmin** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

Here we present a novel analysis of cognitive load after stimulus onset asynchrony (SOA) by measuring hand-eye coordination. Integrated time series analysis (TSA) effectively established relationships between variables. Through this method we confirm order within a chaotic system and support previous non-linear assumptions quantitatively.

### **05.17.12 Improving Older Adults' Simulated Driving with Positive Age-Stereotype Priming**

**Newton,David** *University of Central Oklahoma*

Older adults are at greater risk of accidents while driving than middle-aged adults due to age-related changes in physical and cognitive function. With older adults being projected to represent a greater proportion of American road users in coming years, it is important to identify factors that predict older adults' accident risk while driving. Presenting words associated with advanced age to older adults at speeds below the threshold of comprehension (i.e., subliminal age-stereotype priming) has been shown to affect physical and cognitive functioning—fundamental predictors of driving ability. The present study tested the effect of subliminal age-stereotype priming on driving performance of adults aged between 50 and 85 years using a low-fidelity driving simulator. It was predicted that positive age-stereotype words would increase performance and negative age-stereotype words would reduce performance. Participants were tested of driving performance before and after completing a computer-based positive age-stereotype priming task, negative age-stereotype priming task, or control task. This study provides ecological implications for human factors and social psychology regarding the influence of stereotyping older adults on road-traffic safety.

### **05.17.13 “Gayming” All Night Long: Outness and Social Support of LGBT Gamers – Update**

**Everson,Adam** *University of Central Oklahoma*

**Limke,Alicia** *University of Central Oklahoma*

With the availability of online gaming and the social relationships that can thereby develop, lesbian, gay, bisexual, and transgender (LGBT) players may use game play to develop strong, healthy social support systems. Thus, this study examined this connection in a sample of 169 LGBT individuals. Participants completed a variety of questionnaires assessing LGBT oppression, experiences/emotions associated with their sexual orientation, coping strategies, outness, symptomatology, and social support. Results suggest that time spent per week in online games (e.g., League of Legends and World of Warcraft) is negatively associated with outness and positively associated with feeling unsafe because of one's sexual orientation; coping through self-distraction, behavioral disengagement, and self-blame; feeling that it has been a difficult process accepting one's sexual orientation; and overall symptomatology. However, feelings of rejection and using denial, emotional support, and instrumental support to cope predicted reports of receiving social support by an online gaming friend.

### **05.17.14 Law and Order: The Weight of Testimonial and Physical Evidence in Court**

**Jent,Kelly** *University of Central Oklahoma*

**Hancock,Thomas** *University of Central Oklahoma*

**Fitzgerald,Brandon** *University of Central Oklahoma*

**Gonzalez,Gabriela** *University of Central Oklahoma*

Testimonial and physical evidence are both admitted into court as long as it is probative and does not provide prejudicial information. Eyewitness testimony has a powerful influence in the courtroom. Testimony that corroborates circumstantial evidence nearly quadruples conviction rates regardless of the actual accuracy of the witness. Physical evidence allowed in the court room includes tangible objects such as weapons, blood-spattered objects, photographs, maps, models, and scientific evidence such as DNA. Eyewitness testimony and physical evidence both have influential factors in court; however, there hasn't been much research comparing the impact of the two forms of evidence. This study proposes to evaluate how jurors weight different forms of evidence, testimonial and physical, and whether this ranked importance influences a guilty/not guilty verdict. Participants will read a short narrative and view six pieces of evidence in the order of their perceived importance. This evidence includes three physical and three testimonial pieces. Each piece of evidence has four subcategories – two indicating guilt and two indicating innocence. Guilty/not guilty decisions will be made by sliding a bar on a Likert scale after viewing each piece of evidence, and a final verdict will be made once all evidence has been viewed. The expected outcome is to see different patterns arise in guilty/not guilty verdicts based on the weight placed on different types of evidence.

### **05.17.15 Fear of Alone**

**Lindsey,BreAnn** *University of Central Oklahoma*

The purpose of the criminal justice system is to provide a level of protection for the public through executing proper punishment by way of imposing accountability on an individual for his or her actions. Accurate functioning of this protective body inspires trust in those that seek shelter under the long reaching arm of the law. When the justice system fails, the level of trust and cooperation from the public wanes. One area of failing accuracy is in the interrogation methods used by law enforcement agencies that often result in false confessions. This study seeks to identify possible predisposing factors to false confessions as well as flaws in interrogation tactics. The proposed hypothesis of this study includes the assertion that socially excluded individuals of an anxious attachment are more likely to falsely confess. Social exclusion methods derived from Twenge et al., (2001) and the Computer Crash Paradigm originated by Kassin & Keichel (1996) will be used in conjunction with the minimization tactic for interrogation, to investigate the proposed hypothesis. Results will be used in the refinement of legal procedures and the prevention of false incarceration of innocent individuals.

### **05.17.16 I Pledge Allegiance: The Relationship Between Attention to Terrorism in the Media and Emotion**

**Twyman rack, Hayley** *University of Central Oklahoma*

The aim of the study is to investigate attentional biases to violent media and explore its effect on mood and attitudes. This study aims to further examine the relationship between attention to violent, terrorism-related media and negative mood as well as abidance to the right to civil liberties. Being exposed to graphic images of terrorist attacks can have many negative effects on mood and may affect critical thought (Williams, Foster, & Krohn, 2008). High overall stress is associated with worry about terrorist attacks (Peleg & Mass-Friedman, 2013). For the present study, participants will answer questionnaires regarding mood and agreement with aspects of the Patriot Act, as well as be exposed to violent, prosocial, or neutral audio and visual stimuli presented via an eye-tracker. We hypothesize that those who are exposed to a violent newscast will have greater attentional biases to the violent images. Also, we hypothesize that those with the greatest attentional bias to the violent stimuli will have a greater increase in state anxiety and depression, and agree with more aspects of the Patriot Act.



## **05.17.19 Mirror systems, empathy, and pain recognition using EEG**

**Durham,Justin** *University of Central Oklahoma*

**Mather,Robert** *University of Central Oklahoma*

Pain is subjective, sensory, and emotional experience closely related to the motor system. The ability to recognize when other individuals experience pain and relate to others emotions serves as an adaptive trait for comprehending the cause and effect of events. Mirror systems are clusters of specialized visuosensorimotor neurons that become active both when executing an action and while observing the same action performed by another agent (Rizzolatti et al., 1996). Mirror systems serve as an organic coding system for developing action recognition and understanding motor events. Importantly, these systems are not limited to interacting with physical objects but also involve social aspects of cognition, such as imitation, that requires simulating the minds of others by deciphering facial expressions and gestures. Empathy is the unconscious ability to accurately identify other's emotions or beliefs and adjust responses to facilitate social communication that is necessary for interpreting pain. Support from recent research suggests that further investigation on mirror systems is needed to investigate how observing pain affects understanding and developing empathy. The current project hypothesized that typical participants would have greater mirror system activation while vicariously experiencing pain. EEG electrodes measured the suppression of mu wave oscillations (8-13 Hz) while participants observed a video of painful clips compared to a blank-screen pre and post baselin

## **05.17.20 Risk-Tolerance in Mate Choice**

**Cannon,Amber** *University of Central Oklahoma*

**Jeyaraj-Powell,Tephillah** *University of Central Oklahoma*

Domestic partner abuse is a persistent problem. There is ample research into risk-seeking in several domains, including recreational and social. One domain that seems absent is relational risk-seeking: the willingness to ignore signs of over-commitment by the partner until a relational crisis occurs. The researcher proposes that this mechanism is distinct in men and women. The proposed research will focus on the mechanism in women, and hypothesizes that the tendency to pursue risky mates can be determined via psychometric inventory. Previous research has identified a link between preference for "bad boys" and preference for enlarged pupils in target men. This study proposes modifying existing Domain Specific Risk-Taking scales to identify this mechanism. Women will be recruited to participate in an online survey of the modified scales. They will also be asked to order pupil-modified pictures by perceived attractiveness. A multiple regression will be run on the combined results of the picture order and the new scale to discern the relationship between scores on the scale and preference for larger pupil size.

### **05.17.21 Delete Browsing Histories Regularly: Porn Variety and Aging**

**Scott,Jenn** *University of Central Oklahoma*

**Gayzur,Nora** *University of Central Oklahoma*

**Everson,Adam** *University of Central Oklahoma*

**Limke,Alicia** *University of Central Oklahoma*

Research on sexuality in adulthood has focused on declines in sexual activity (e.g., Avis et al., 2009; Laumann, Glaser, Neves, & Moreira, 2009; Lindau & Gavrilova, 2010; Michael, Gagmon, Laumann, & Kolate, 1994; Welch, 2011) supporting a popular assumption that sexual interests diminish with increasing age. However, this view is limited in scope. This study investigates the link between age and pornography viewing. Thus, 389 participants (18 to 69 years) answered questions anonymously online about their sexual desires, sexual fantasies, sexual scripts, and sexual attitudes. Participants also completed a questionnaire designed for the purpose of this study that assessed pornography viewing (viewing, using to masturbate, intending to imitate with partner, and having already imitated with partner). Results indicate as age increases, difference in the sexual scripts of what individuals think is appropriate in pornography and what individuals think is appropriate in their personal sex lives increases. In addition, as age increases, the variety of pornographic acts watched and used to masturbate increases. Discussion focuses on the implications of defining sexual fantasies and desires as observable behaviors (instead of using only self-reported fantastical thought). Additional discussion focuses on the specific implications of these findings to developmental research regarding age and sexuality.

### **05.17.23 Accessibility of Student Mental Health Services at Oklahoma Colleges and Universities: A Web-Based Study**

**Hughes,Amanda** *Northeastern State University*

The need for mental health services among college and university students is evident. However, no federal or state mandate for provision on-campus mental health services exists. Thus, the objective of the research was to explore mental health services available to students enrolled at institutions of higher education in Oklahoma. Key word searches for “mental health services,” “counseling,” and “therapy” were used on the websites of each college or university in the Oklahoma. The same key words were used in the same order until the information was found or the search was exhausted. The data shows great variability in accessibility of information as well as in type of services available. Some institutions offer on their websites minimal off-campus referrals, and others publish details about a full range of care free of charge on campus. Recommendations for policy and practice regarding services and for easing student access to such services are presented.

## **05.17.24 Counseling and Recidivism Rates**

**Thurman,Hailey** *Northeastern State University*

Recidivism rates of criminals released from prison in the United States are uncomfortably high. Between 2005-2010 recidivism rates were at 76.6 percent within five years of release (Durose, M.R., Cooper, A., Snyder, H., 2014). Of this 76.6 percent, 56.7 percent of those arrested were within the first year of their release (Durose, et al., 2014). While much research has been done on recidivism rates among released prisoners, not much has been done to lower this rate. It is hypothesized that, if all released prisoners are required to go to mental health counseling on a regular basis for a determined period of time, that recidivism rates will drop significantly throughout the United States. This research will be done through observation and survey of released prisoners, compared by whether they hold a status in a counseling program.

## **05.17.25 The efficacy of Experimental Psychology at the University of Central Oklahoma**

**Scott,Jenn** *University of Central Oklahoma*

**Kesner,Rosa** *University of Central Oklahoma*

**Duran,Dana** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

The University of Central Oklahoma (UCO) Experimental Psychology program is a research-based masters degree with emphasis on readying students for post-graduate work. We compiled data from previous graduates of the UCO experimental program to include post-graduate program acceptance in comparison to other regional universities. We include the number of graduate students, the amount of funding available to each student, the amount of funding students have received, as well as specifics about the UCO Physiological/Cognitive Laboratory, which is utilized for undergraduate and graduate research.

## **05.17.26 Mad ink: A Multidimensional Evaluation of Tattoos, Personality, Self-Esteem, and Aggression**

**Ray, Cecelia** *Rogers State University*

**Kirk, Mark** *Northeastern State University*

The objective of this study was to investigate any association between having tattoos and personality characteristics, levels of self-esteem and aggression ratings. The researchers hypothesized that tattooed individuals will have higher mean aggression, and self-esteem scores and score significantly higher in the personality trait extroversion. Three scales were used to collect data from the participants as well as a demographics page. The three scales include Rosenberg's Self-Esteem Scale, The Big 5 Inventory, used to test different categories of personality, and the Buss & Perry Aggression Questionnaire. The results revealed that in this sample of 96 individuals those with tattoos (n=43) scored significantly higher in Extroversion ( $F= 10.07, p< .01$ ), Physical aggression ( $F= 4.79, p<.05$ ), and verbal aggression ( $F= 9.05, p< .01$ ) than subjects without tattoos (n=53). When the sample was split by gender females with tattoos (n=31) scored significantly higher on aggression ( $F= 6.77, p< .05$ ) and extroversion ( $F= 8.27, p<.01$ ) than females without tattoos (n=37). Males with tattoos (n=13) scored significantly higher on the personality trait Openness ( $F=4.78, p< .05$ ) than males without tattoos (n=16). Using Person's r coefficient to examine correlations between number of tattoos and scale scores there were a number of constructs with significant associations. Number of tattoos was significantly, positively correlated with Extroversion Openness and Aggression ( $r= .30 p<$ .

## **05.17.27 The Context of Heroism**

**Dixon, Haley** *Northeastern State University*

The purpose of the proposed study is to gauge just how contextual an individual's concept of heroism is. This will be explored by a controlled study in which historical figures will be described to individuals in one of two ways: heroic or non-heroic (i.e. villainous). The individual will be tested on their personal opinion (heroic, non-heroic, or indifferent) of these figures, by name, after identifying their alignment within the contextuality of the descriptions previously given during the study. The hope of this study is to highlight how individuals' opinions will fluctuate depending upon how the figures are described.

## **05.17.28 Enclothed Cognition Decomposition Effect on Selective Attention**

**Klevgard,Hunter** *University of Central Oklahoma*

**Scott,Jenn** *University of Central Oklahoma*

**Vanhoy,Mickie** *University of Central Oklahoma*

**Williams,Lindi** *University of Central Oklahoma*

Worn clothing affects selective visual attention response times. Unconscious schema associations, along with physiological state changes, could explain increased sensitivity. Other research has described the effect of clothing on response time in a Stroop visual search task, yet no analysis has been conducted on refined performance structure with an attempt to model non-linear response output times. Stimuli presentation occurred on a computer monitor positioned above a desk while responses on the visual task were recorded via keyboard. The visual task included a blank white background that remained visible while stimuli appeared at the center of the screen. A mask replaced the stimuli and background at the conclusion of each trial. On each trial, a target word was displayed in an incongruent text color. A criterion word was presented in black text simultaneously below the target word. Participants made judgments about whether the meaning of the criterion word was reflected in the color of the target word. In modeling the task, the Holder exponent was mapped against the Fractal dimension to observe the complexity of the task across physiological states. The modeled system displayed almost identical characteristics across conditions, suggesting that change in physiological system did not affect the underlying cognitive systems involved in the selective attention task. The data output was modeled using a continuous wavelet transform to observe embedded systems.