

12TH ANNUAL

OLORADO

SATURDAY, APRIL 4, 2015

8 a.m. - 4:30 p.m.

Hosted by Colorado College

C S U R F

PRINGS

NDERGRADUATE

RESEARCH

ORUM



COLORADO COLLEGE



UCCS

University of Colorado
Colorado Springs



Harry Yau



Sam Zarky



Melissa Barnes



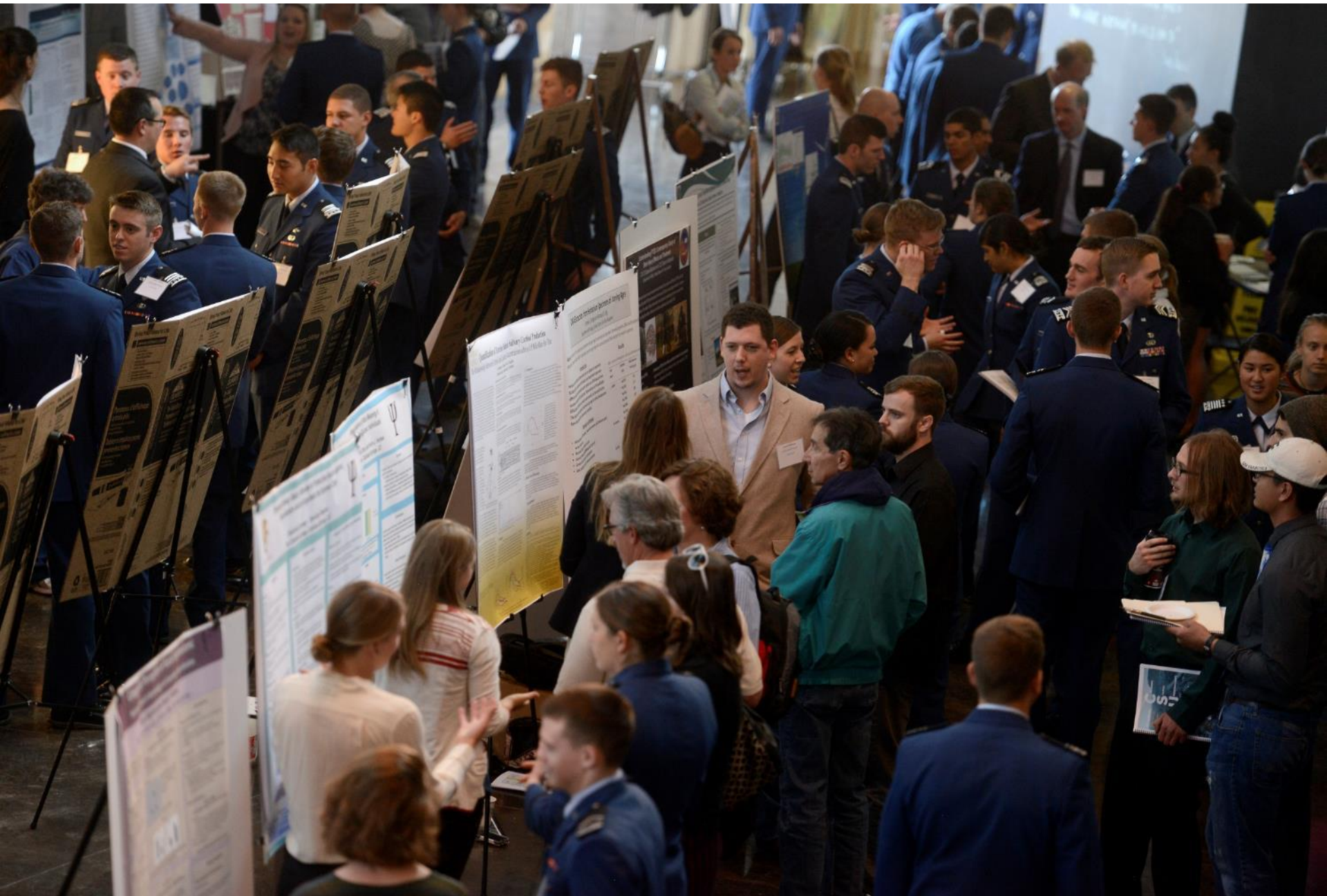
Julia Liao



Jake Sullivan



From Left: Kjersten Conway, Susannah Conway, Sydney Minchin, Nick Bernstein, Samantha Ellner, Hadar Zeigerson





COLORADO COLLEGE

Representations of Word Meaning in Dyslexic and Non-Dyslexic Individuals

Samantha Ellner, Emily Chan, and Kevin J. Holmes
The Colorado College, Colorado Springs, CO



Introduction

Previous Research on Dyslexia

- Dyslexic individuals show impairments in visual processing of words (Share & Stuart, 1997)
- The mapping of sounds to symbols (Stuart et al., 1995)
- Both findings suggest that dyslexic individuals process words differently from non-dyslexic individuals

Research Question:

- Do such processing differences lead to differences in how dyslexic and non-dyslexic individuals think about words?
- Are there differences in the underlying representation of word meaning?

Results

Valence

Dyslexic individuals rated words as more positive than non-dyslexic individuals, $F(1, 42) = 3.80, p = .05, \eta^2 = .10$. No main effect of word valence or interaction.

Arousal

Dyslexic individuals rated words as more arousing than non-dyslexic individuals, $F(1, 42) = 3.80, p = .05, \eta^2 = .10$. No main effect of word valence or interaction.

Dimensionality

Dyslexic individuals used positive and negative words to describe words more than non-dyslexic individuals, $F(1, 42) = 3.80, p = .05, \eta^2 = .10$. No main effect of word valence or interaction.

Summary

Findings indicate that dyslexic individuals engage with meaning in a more positive manner.

- The ability of dyslexic individuals to process words is impaired.
- Across the board, dyslexic individuals gave higher ratings of positive valence to words than non-dyslexic individuals.
- Impairment of these processes may be due to a more positive view of words.
- Findings did not differ by word valence, although the underlying word representations would suggest otherwise. More research is needed to determine if this is due to the dyslexic group.

Conclusions

Findings suggest that dyslexic individuals represent words differently than non-dyslexic individuals, showing higher ratings of positive valence and arousal, and lower ratings of dimensionality. Negative affective words were used, and indicated that dyslexic individuals had a more positive view of words. Research is needed to determine if this is due to the dyslexic group.

Future Directions

- Researcher may need to consider the ability of the dyslexic group to process words differently than non-dyslexic individuals.
- It is not clear how word valence and arousal ratings relate to the ability of dyslexic individuals to process words.
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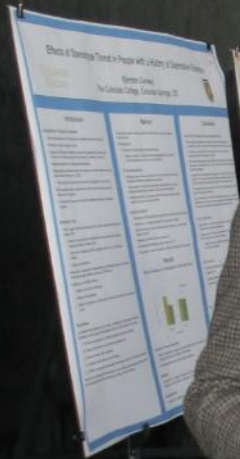
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Stuart, G. S., & Stuart, G. S. (1995). The development of orthographic processing in dyslexia. *Journal of Experimental Psychology: Applied*, 1, 1-10.

Share, D. L., & Stuart, G. S. (1997). The development of orthographic processing in dyslexia. *Journal of Experimental Psychology: Applied*, 3, 1-10.

Stuart, G. S., & Stuart, G. S. (1995). The development of orthographic processing in dyslexia. *Journal of Experimental Psychology: Applied*, 1, 1-10.





A History of Depressive Disorders

Colorado Springs, CO

Discussion

Next-Generation Depression-Creativity Strategies Model

While people with depression experience a 30% drop in creativity that can be reversed or mitigated, they perform significantly better than other groups on the creativity tasks reported by the research.

- The model suggests that people with depression have a higher level of creative thinking and problem-solving skills than other groups.
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Limit of Study Effects

The study has several limitations. First, the study was a cross-sectional design, which means it cannot establish causality. Second, the study did not measure the degree of depression, which may have influenced the results. Finally, the study did not measure the degree of creativity, which may have influenced the results.

Future Research

Future research should investigate the relationship between depression and creativity in a longitudinal design. It should also investigate the relationship between depression and creativity in a cross-sectional design.

Selected References

Barney, J., & Schmitt, M. (2001). The relationship between depression and creativity: A meta-analysis. *Journal of Personality and Social Psychology*, 81, 100-110.

Barney, J., & Schmitt, M. (2001). The relationship between depression and creativity: A meta-analysis. *Journal of Personality and Social Psychology*, 81, 100-110.

Barney, J., & Schmitt, M. (2001). The relationship between depression and creativity: A meta-analysis. *Journal of Personality and Social Psychology*, 81, 100-110.



Artificial Grammar Experiment: How explicit knowledge process influences our ability to detect

Harry Yau and John Horner
The Colorado College, Colorado Springs,

Introduction

Explicit learning and knowledge.

Researcher suggested that explicit instructions facilitate the explicit task learning from participants are able to follow a certain rules, but that it have no effect on more complex task learning because the additional information makes the complex task even harder (Fahlout et al. 2003; Burg, Merks, Howard & Howard, 2009; Liu, 1999).

Explicit learning improves performance with simple tasks, but has no effect on probability learning. This is because explicit learning is not a substitute for implicit learning.

Participants are not expected to be able to calculate or discover the hidden probability, participants will rely on the state space they learned and assume that the strings presented correctly follow the state space, but will not recognize the change in probability.

Selected References

Fahlout, et al. (2003). The relationship between explicit and implicit learning. *Journal of Experimental Psychology*, 132, 100-110.

Burg, Merks, Howard & Howard, 2009. The relationship between explicit and implicit learning. *Journal of Experimental Psychology*, 138, 100-110.

Liu, 1999. The relationship between explicit and implicit learning. *Journal of Experimental Psychology*, 128, 100-110.

Method

112 undergraduate participated.

State space - an underlying process of how the letter strings used in the experiment were generated.



Participants were not expected to be able to calculate or discover the hidden probability, participants will rely on the state space they learned and assume that the strings presented correctly follow the state space, but will not recognize the change in probability.

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Results

A measure of the likelihood of judgment.



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RICHARD F. CELESTE THEATRE

Categorical perception (CP): Superior discrimination of stimuli from different categories compared to stimuli from the same category

Department of Psychology

Categorical perception (CP): Superior discrimination of stimuli from different categories compared to stimuli from the same category

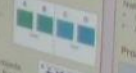
Two issues

Research methodology for categorical perception (CP)
Phonemes using memory comparisons do not necessarily require memorization
Artificial paradigms have not been used to test CP of local expressions

Assessing of lateralized categorical perception (LCP)
The LCP measure in the current literature (L1) measures language ability
Category of error

Proposed methods
Use of a novel method with no memory component
Controlled CP of the local blue for native speakers and English learners

The present study
Local speakers used with no memory component
Controlled CP of the local blue for native speakers and English learners



Department of Psychology
University of Toronto

Representations of Word Meaning in Dyslexic and Non-Dyslexic Individuals

Samantha Ellner, Emily Chan, and Kevin J. Holmes
The Colorado College, Colorado Springs, CO

Introduction

Previous Research on Dyslexia

- Dyslexic individuals show impairments in:
 - visual processing of words (Blain & Walsh, 1997)
 - the mapping of sounds to symbols (Ziegler et al., 2010)
- Such findings suggest that dyslexic individuals process words differently from non-dyslexic individuals

Research Question

- Do such processing differences lead to differences in how dyslexic and non-dyslexic individuals think about words?
- Are there differences in the underlying representation of word meaning?

Method

Participants

- 15 self-identified dyslexic participants and 15 non-dyslexic participants, recruited on Amazon Mechanical Turk
- Matched for age, gender, and location of residence
- Compensated up to \$2

Materials

- 43 pairs of semantically matched words
- Half were confusable (contained the letter combinations 'le' or 'li') and half were non-confusable

Confusable	Non-Confusable
Amely	Fair
Audience	Crowd
Cliff	Roof
Caric	Morsel
Music	Firm

Procedure

- Each word rated on the dimensions of valence, arousal, and dominance (Brewley & Lang, 1999)
- 3-point Likert scale
- Order of dimensions counter-balanced
- No time limit



Images used to convey dimensions from the left: dominance, arousal, and valence

Results

Valence



- Dyslexic individuals rated words as more positive than non-dyslexic individuals, $F(1, 42) = 24.85, p < .001, \eta^2 = .37$
- No main effect of confusability or interaction

Arousal



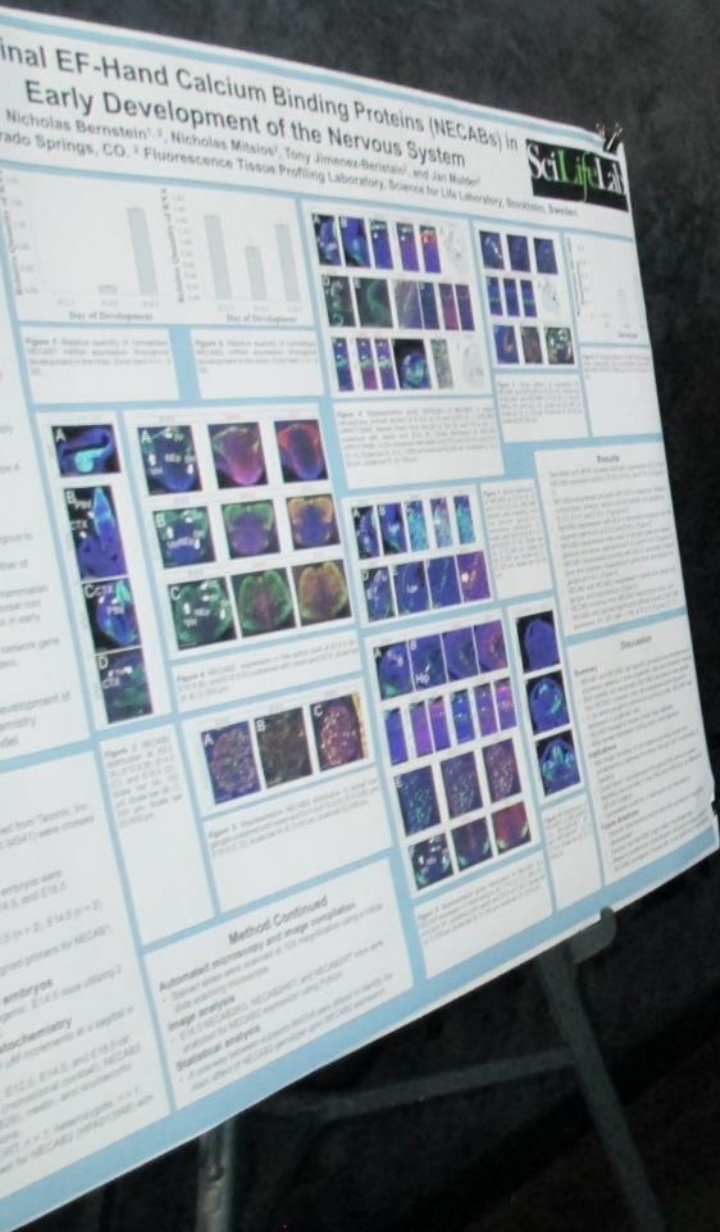
- Dyslexic individuals rated words as more arousing than non-dyslexic individuals, $F(1, 42) = 20.67, p < .001, \eta^2 = .33$
- No main effect of confusability or interaction

Dominance



- Dyslexic individuals rated words as more dominant than non-dyslexic individuals, $F(1, 42) = 4.23, p < .05, \eta^2 = .09$
- No main effect of confusability or interaction

- Findings indicate greater in magnitude
- On a variety of
- Across the
- Irrespective of
- Ratings of dyslexic positive (K)
- Findings suggest reading leads to di
- Higher ratings across overcorrection (D)
- Negative attitudes may lead to dyslexic ratings
- Overcorrection ma
- This task may ha
- A more implicit task experiences of com
- Imposing a time confusable words
- Dyslexic individuals combinations
- e.g., differentiation
- Multiple types of to provide a full p word meanings
- Oppenheimer, D. M. (2004) judgment tasks. *Psychol*
- Shan, J., & Walsh, V. (1999) dyslexia. *Trends in Neu*
- Turner, W., & Greenway, D. (2010) Dyslexia. *Child*
- Ziegler, J. C., & Goswami, U. (2013) processing of letters: dig in developmental dyslex





Bringing Unsexy Back: A Review of Protective Factors and Sexualization and an Argument for Summer Camp

Susannah Conway – Tomi-Ann Roberts
The Colorado College, Colorado Springs, CO

Sexualization

- Sexualization occurs when
 - are defined by their sex appeal
 - are held to a narrowly defined definition of physical attractiveness that is equated to success
 - are treated as sexual objects or tools for use by others
 - have sexuality inappropriately imposed upon them
- Sexualized images of women are found in virtually every form of media, including movies, television, video games, magazines, and advertising
- The consequences for girls are dire, for girls lose visible signs of body dissatisfaction as young as age 9

Sexual Objectification

- Occurs whenever a body part is displayed in a sexual way and used to represent a person
- Women encounter this treatment in cultural, interpersonal, and intrapersonal systems of life

Self-Objectification

- The tendency for women and girls to internalize exteroceptive messages and view themselves as an object to be looked at and evaluated by others (Fradette & Roberts, 2007)

Objectification Theory

- Objectification theory provides a framework for understanding the mechanisms through which women and girls come to internalize societal ideals of beauty and the repercussions of this (Fradette & Roberts, 2007)

Cultural Sexualization

Media presents images and messages that allow to narrow and unattainable beauty standards and often sexualize young women

Interpersonal Sexualization

Families, peers, acquaintances can cause and perpetuate societal ideals

Self-Objectification

Girls internalize societal ideal and are constantly preoccupied with trying to meet beauty standards

Consequences

- Body dissatisfaction
- Disordered eating
- Low self-esteem
- Increased cognitive
- Physical inactivity

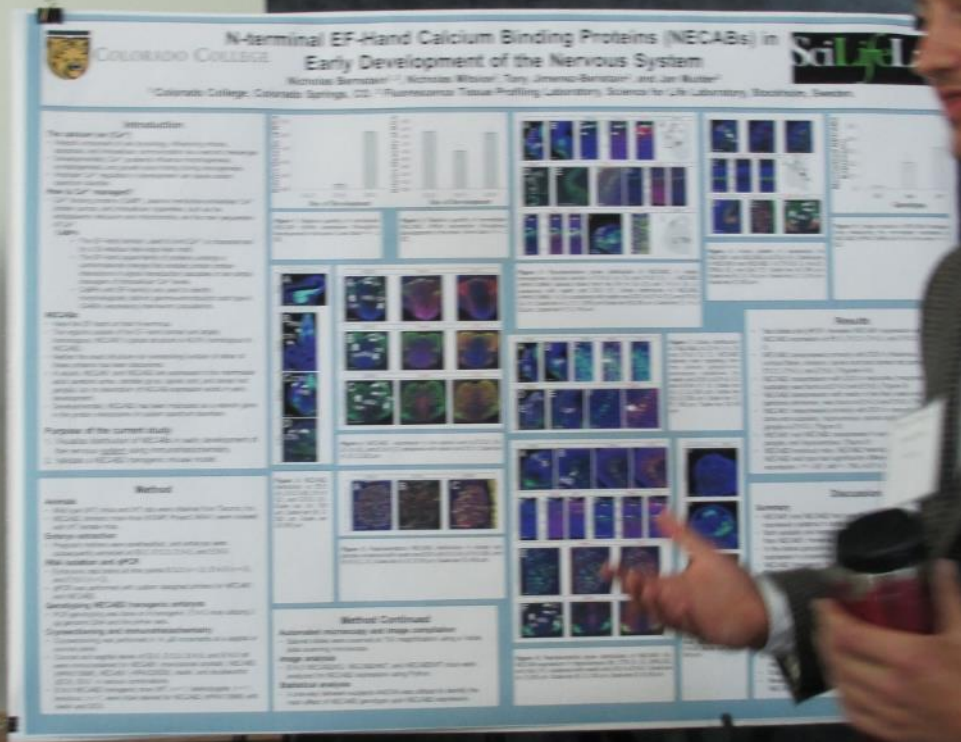
Introduction

Protective Factors


- Media Literacy**
 - Media literacy programs are designed to decrease media sexualization by encouraging participants to identify, analyze, evaluate, and produce alternatives to various types of mass appearance and behavior presented in the media, by recognizing their "hidden meaning and/or"
 - increase critical thinking about media images, decrease weight concerns and desire to look like women in the media
 - Establishing media negotiating effect on levels of internalization
 - More research is needed on the potential positive effects of empowering media literacy
- Physical Activity**
 - Participating girls and young women's focus from physical appearance to physical activity protect them from the negative consequences of sexualization
- Sports Participation**
 - LEAD to increased self-esteem, positive affect, intrapersonal body satisfaction, and physical confidence, and increased social health
 - Also linked to body dissatisfaction, weight concerns, and disordered eating
 - Some sports may encourage girls to adhere more strictly to gender stereotypes rather than challenging them
- Body-focused Activities**
 - used body exercises focus on enhancing awareness and responsiveness to the body's physical state, thus shifting the focus away from external appearance
 - shown to decrease levels of self-objectification and disordered eating, increase levels of body satisfaction, body awareness and responses
 - Data are limited to small sample sizes and self-reporting subjects
- Single-Sex Environments**
 - Single-sex environments limit the possibility of evaluative risk and may decrease self-objectification tendencies
 - Single-sex environments may have a positive impact on girls' "confidence", and might improve girls' self-esteem
- School Uniforms**
 - Sexualization is prevalent in girls' clothing through the sexualization of "fit"
 - Uniforms are an important clothing tool and the wearing of girls' clothing allows them to "fit in" and appear before the environment
 - Simple and unisex clothing, such as uniforms, may reduce self-objectification and the associated negative psychological effects
 - Uniforms are associated with positive academic outcomes and a stronger sense of belonging
 - Wearing a school uniform might encourage girls to focus more on their appearance

Proposal

- Single-Sex Environments**
 - All girls are housed in a single-sex dormitory during their summer camp
 - Female dormitory could be used for summer camp
 - All activities taking place during the camp are held in a single-sex environment
- Uniforms**
 - A simple, unisex uniform to wear during camp
 - No accessories



of Protective Factors against ment for Summer Camp



mi-Ann Roberts
Colorado Springs, CO

Proposal for a Girls' Summer Camp Intervention

Single-Sex Environment

- An all-girls environment eliminates the possibility of male gaze and evaluation, potentially increasing girls' confidence in self-identity.
- Female instructors could be very good role models for girls by fulfilling non-stereotypical female roles including leadership positions.
- An all-female setting might improve the efficacy of the other tools meant to help girls build self-confidence and self-empowerment.

Uniforms

- A simple, comfortable, uniform could shift the focus away from clothes, allow girls to move freely, and reduce the feeling of being evaluated.
- No makeup rule.

Technology Free and Media Literate

- The lack of cell phones, music players, televisions, computers, and internet access would limit their media exposure and allow girls to fully engage with one another, face to face.
- Research shows that 9 days without technology and face-to-face interaction with peers and adults appears to have significant positive impact on teenage social skills development.
- Media literacy program would cultivate girls' critical thinking skills by encouraging them to identify, evaluate, challenge, and propose alternatives for societal messages about weight, appearance, and behavior.

Physical Activity

Sports Participation

- Participating in sports in an all-girls environment while wearing a uniform may decrease some of the negative outcomes of sports participation.
- "Severer mood" sports and no tolerance for teasing.

Body-Focused Activities

- Body-focused activities in every department.

Taking the Lessons Home

- Girls would be given information about how to implement these tools outside of camp, female community in which they have support.
- Parents of campers would be educated about their daughters' experience and be given advice about how to support them at home.

Conclusion

- The empowerment of girls in our society is pervasive, but we have some effective tools to help the current generation of girls.
- Reinforcing the tools of resilience together in an environment where girls feel safe, supported, and free to be themselves, such as the proposed summer camp, presents the most platform for making girls to build self-confidence and self-empowerment.



COLORADO COLLEGE

Representation of Dyslexia

Samanta Roberts
The Colorado College



Introduction

Previous Research on Dyslexia

- Dyslexic individuals show impairments in:
 - visual processing of words (Share & March, 1997)
 - the mapping of sounds to symbols (Ziegler et al., 2010)
- Such findings suggest that dyslexic individuals process words differently from non-dyslexic individuals.

Research Question

- Do such processing differences lead to differences in how dyslexic and non-dyslexic individuals think about words?
- Are there differences in the underlying representation of word meaning?

Method

Participants

- 18 self-identified dyslexic participants and 18 non-dyslexic participants recruited on Amazon Mechanical Turk
- Matched for age, gender, and location of residence
- Compensated up to \$2

Materials

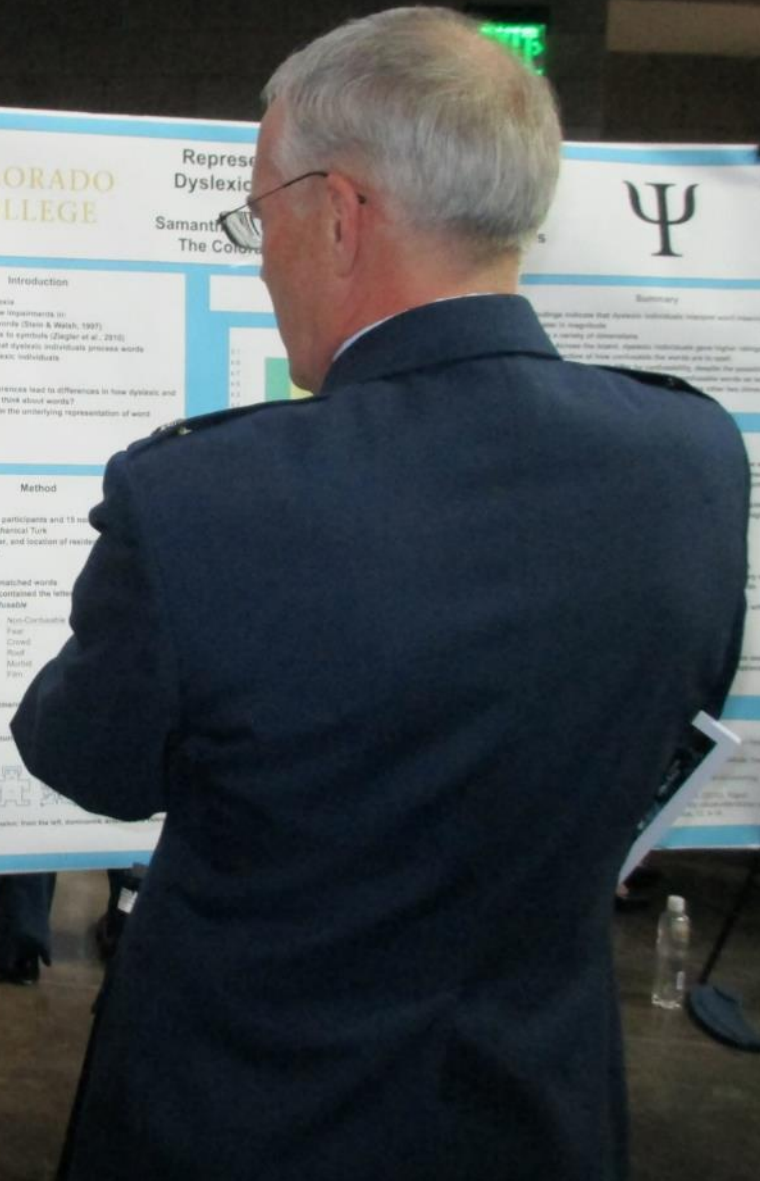
- 43 pairs of semantically matched words
- Half were confusable (contained the same letters) and half were non-confusable

Confusable	Non-Confusable
Confuse	Fear
Anxiety	Crowd
Audience	Roof
Calling	Married
Fame	Fan
Mark	

Procedure

- Each word listed on the stimulus (Bridley & Long, 1998)
- 3-point Likert scale
- Order of dimensions randomized
- No time limit

Images used to convey dimensions: from the left, dyslexic, non-dyslexic, and confusable.



Effects of Stereotype Threat in People with a History of Depressive Disorders

Kyleren Correy
The Colorado College, Colorado Springs, CO



Introduction

Major depressive disorder (MDD) is a common mental health condition that affects approximately 21% of the population in the United States. People with a history of MDD often experience stigma and discrimination, which can lead to stereotype threat. Stereotype threat is the fear of being judged or treated based on negative stereotypes associated with a particular group. This fear can lead to decreased performance and self-esteem.

The purpose of this study was to examine the effects of stereotype threat on people with a history of MDD. The study was conducted in a laboratory setting and involved a series of cognitive tasks. The results of the study are discussed below.

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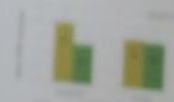
Method

Participants
The study involved 40 participants with a history of MDD. The participants were recruited from a local mental health clinic and a university database. The participants were randomly assigned to either the experimental group or the control group.

Procedure
The study was conducted in a laboratory setting. The participants were first asked to complete a series of cognitive tasks. The results of these tasks were then compared to the results of the control group.

Results

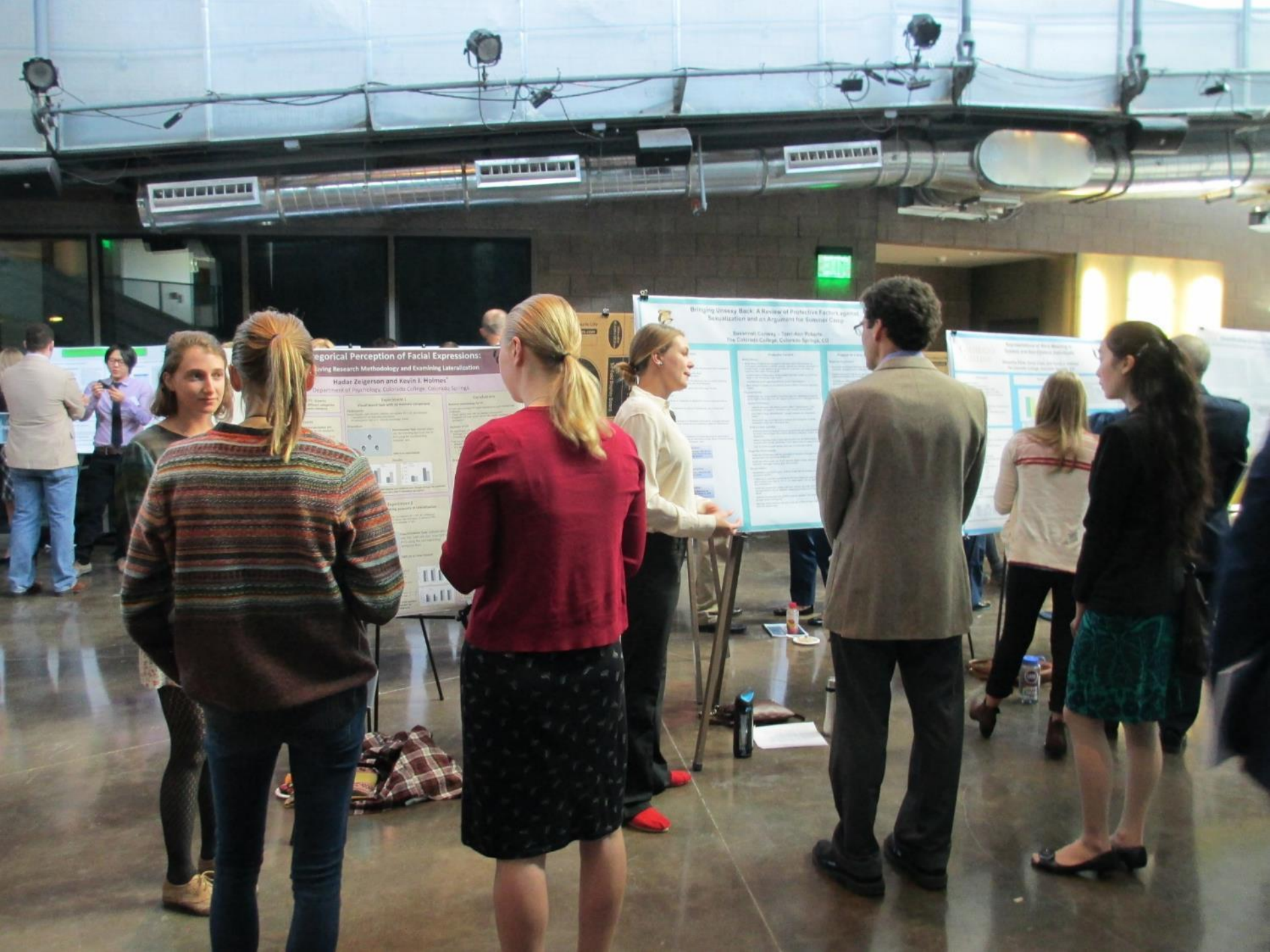
The results of the study showed that people with a history of MDD who were exposed to stereotype threat performed significantly worse on the cognitive tasks compared to the control group. This suggests that stereotype threat has a negative impact on the cognitive performance of people with a history of MDD.



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Categorical Perception of Facial Expressions:
Improving Research Methodology and Examining Lateralization

Hadar Zeigerson and Kevin J. Holmes
Department of Psychology, Colorado College, Colorado Springs



Bringing Unsexy Back: A Review of Protective Factors against Sexualization and an Argument for Gender-Congruent

Bethannah Conway - Tami Ann Roberts
The Colorado College, Colorado Springs, CO

This poster is a review of protective factors against sexualization. It includes a list of factors and a discussion of their implications. The text is organized into several paragraphs with sub-headings.

Importance of Non-Verbal Cues in Social Interactions

This poster discusses the importance of non-verbal cues in social interactions. It includes a list of cues and a discussion of their implications. The text is organized into several paragraphs with sub-headings.



Effects of Social Support on the Health of People with a History of Depressive Disorders

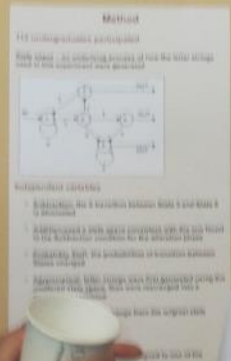
Effects of Benzoyl Peroxide in People with a History of Depressive Disorders
Lorenz, C. A.
The University of Colorado Springs, CO

Artificial Grammar Experiment: The Effect of an underlying process influence on changes

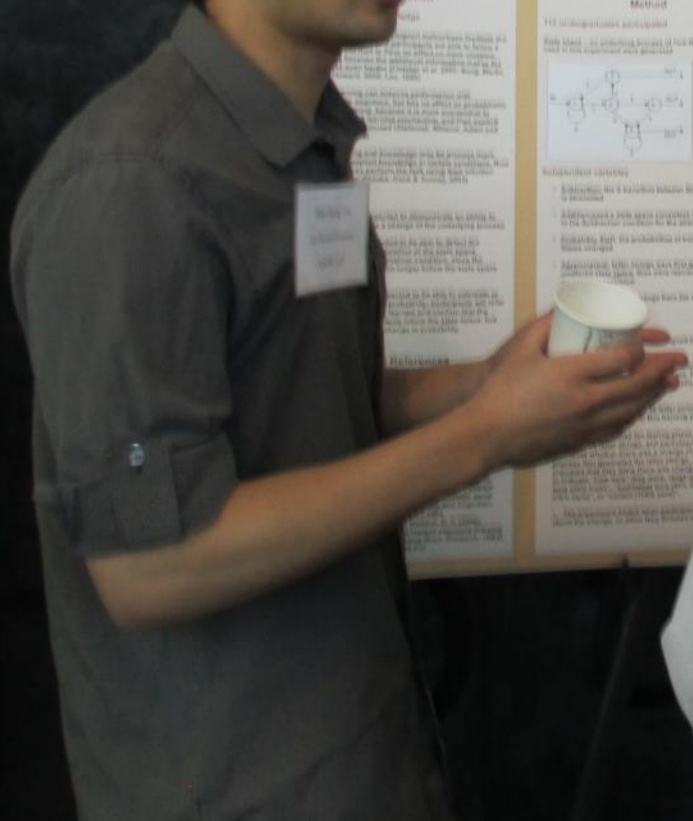
Artificial Grammar Experiment: How explicit knowledge of a process influences our ability to detect changes

Harry Yau and John Horner
The Colorado College, Colorado Springs, CO

Introduction
Explicit knowledge of a process and its underlying structure can influence performance on change detection tasks. This is because the explicit knowledge can be used to predict the underlying structure of the process, which in turn can be used to detect changes. This is the case for artificial grammars, which are used to study how explicit knowledge influences performance on change detection tasks. In this experiment, we used an artificial grammar to study how explicit knowledge influences performance on change detection tasks. We found that explicit knowledge of the underlying structure of the process significantly improved performance on change detection tasks.



Results
The results showed that explicit knowledge of the underlying structure of the process significantly improved performance on change detection tasks. This was true for both the artificial grammar and the natural language conditions. The improvement was most pronounced for the artificial grammar condition, where performance was significantly higher than for the natural language condition. This suggests that explicit knowledge of the underlying structure of the process is more useful for change detection tasks when the underlying structure is artificial than when it is natural.



ogy of an Engineering Laboratory
 i, Hodges and Katherine L. Bates
 Biology, United States Air Force Academy

N-terminal EF-Hand Calcium Binding Proteins (NECABs) in Early Development of the Nervous System

Colorado College
 Nicholas Bernstein^{1,2}, Nicholas Mitsios¹, Tony Jimenez-Berstein¹, and Jan Mulder¹
¹ Colorado College, Colorado Springs, CO; ² Fluorescence Tissue Profiling Laboratory, Science for Life Laboratory, Stockholm, Sweden.

Introduction

The calcium ion (Ca^{2+}) is a major regulator of cell physiology, influencing intracellular signaling and metabolism. Calcium is a second messenger in neurotransmission, cell growth, and differentiation. Calcium is also a key regulator of the neuronal cytoskeleton and cell cycle.

How is Ca^{2+} managed?

The binding proteins (CBPs) buffer intracellular calcium (Ca^{2+}) and maintain a low free Ca^{2+} concentration. CBPs are a diverse family of proteins that bind Ca^{2+} and are involved in a wide range of cellular processes, including cell cycle regulation, cell growth, and differentiation.

NECABs

The N-terminal EF-hand domain, used to bind Ca^{2+} , is characteristic of a diverse family of proteins. The EF-hand domain of proteins undergoes a conformational change that enables calcium binding. In this study, we focus on the N-terminal EF-hand domain of NECABs. NECABs are expressed in the mammalian and avian central nervous system and are thought to be important for the development of the nervous system.

Purpose of the current study

To investigate the function of NECABs in early development of the nervous system using immunofluorescence and in situ hybridization.

Method

Animals

We used E18.5 mice and E17.5 chicks. The NECABs antibody was raised using a recombinant NECAB protein as an antigen.

Embryo extraction

Embryos were extracted and processed for immunofluorescence and in situ hybridization.

RNA isolation and qPCR

Total RNA was isolated from embryos and analyzed by qPCR for NECAB1 and NECAB2 expression.

Generating NECAB transgenic embryos

Transgenic embryos were generated using CRISPR/Cas9 technology.

Crossbreeding and immunofluorescence

Transgenic embryos were crossbred and analyzed for NECAB expression using immunofluorescence.

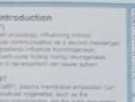


Figure 1
 NECAB1 expression is significantly higher in mice compared to chicks, while NECAB2 expression is similar.




Figure 2
 NECAB1 expression is localized to the cerebral cortex, while NECAB2 expression is more widespread.

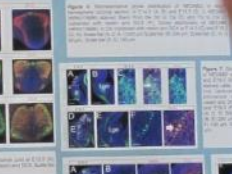


Figure 3
 NECAB1 expression is localized to the cerebral cortex, while NECAB2 expression is more widespread.

Method Continued

Automated microscopy and image completion

Images were acquired using an automated microscope and processed for image completion.

Image analysis

Images were analyzed for NECAB1 and NECAB2 expression using ImageJ software.

Statistical analysis

Statistical analysis was performed using Student's t-test.

...ing and



Effects of Stereotype Threat in People with a History of Depressive Disorders

Kjersten Conway
The Colorado College, Colorado Springs, CO



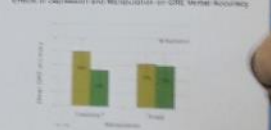
Introduction

Reproduction of Depressive Disorders
The prevalence of depression in the United States is estimated to be between 6% and 10% (NIMH, 2010).
Prevalence for males, females, and age.
The impact of stereotype threat, depression, self-esteem, self-efficacy, and academic performance.
The impact of stereotype threat on academic performance.
The impact of stereotype threat on academic performance.
The impact of stereotype threat on academic performance.

Method

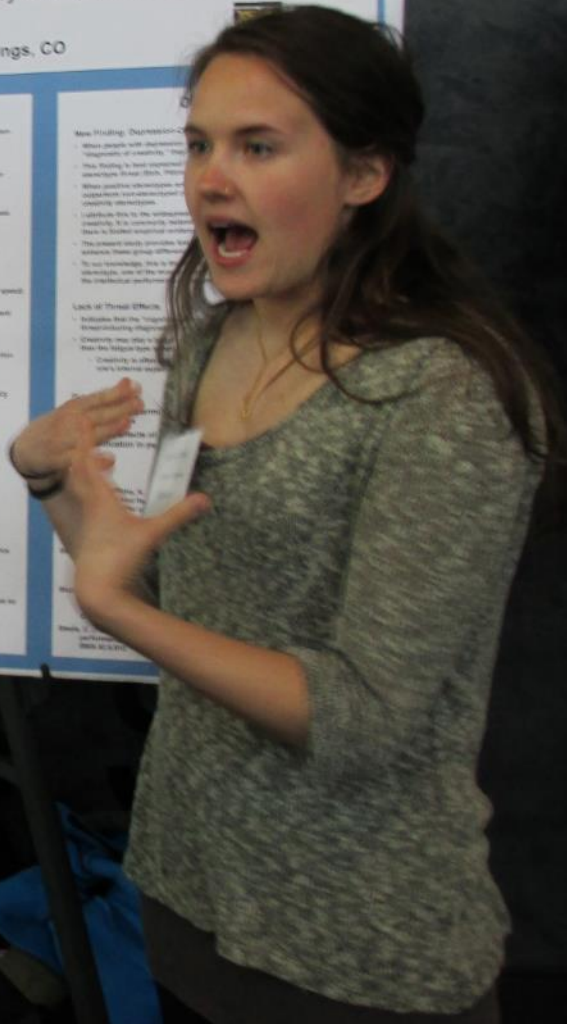
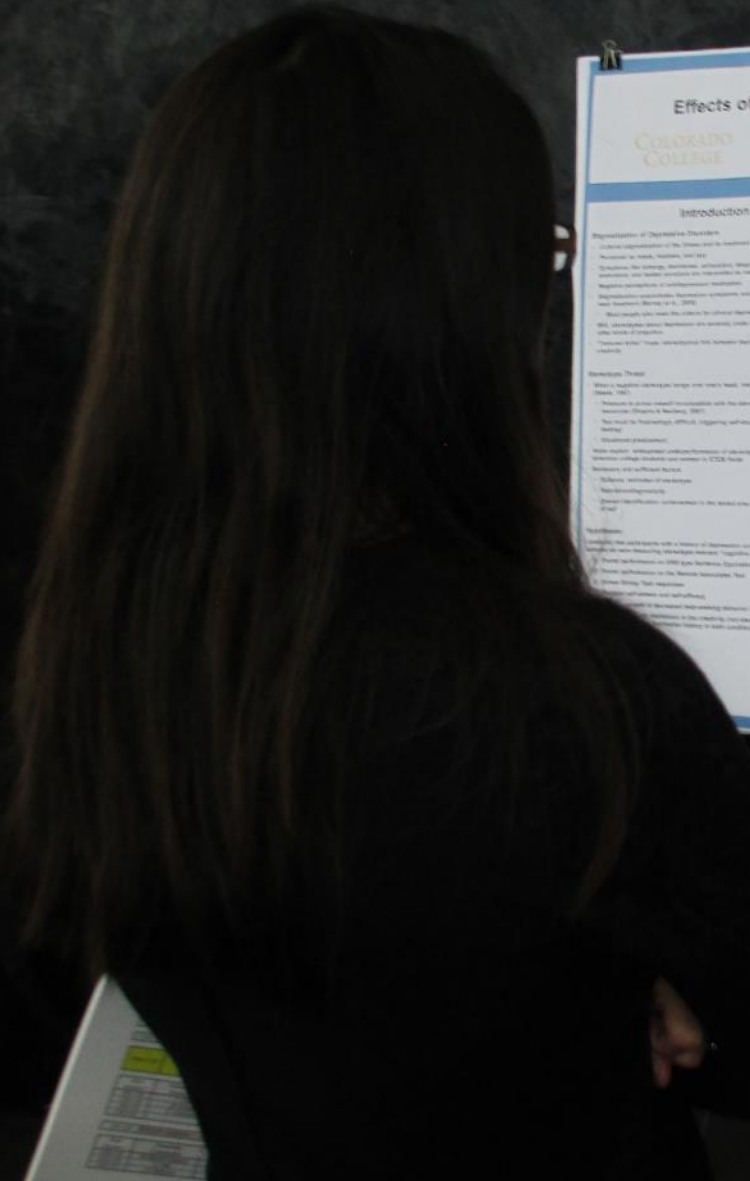
Participants were recruited from a local university and were given a 30-minute survey.
Participants with a history of clinical depression.
Based on prior work, "There are some people diagnosed with a mental disorder who are better at organizing their thoughts."
The study was designed to test the effects of stereotype threat on academic performance.
The study was designed to test the effects of stereotype threat on academic performance.

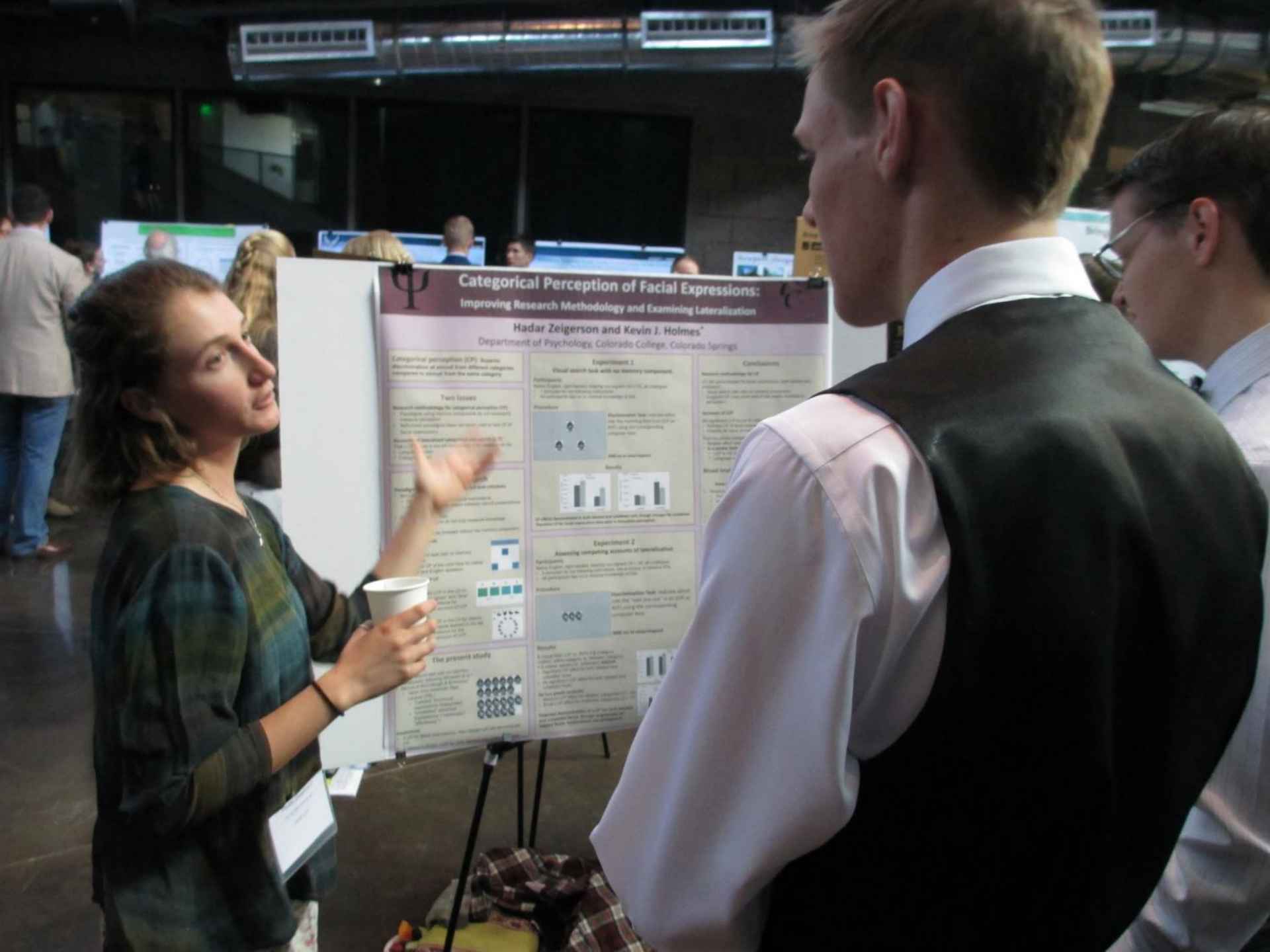
Results



Results of Primary Hypothesis
The results showed that people with a history of depression had lower self-efficacy and lower academic performance in the presence of stereotype threat compared to the control condition.
Other Hypotheses
There were no significant results on any of the other hypothesized variables.

Next Finding: Depression-Correlated
The findings suggest that people with depression who experience stereotype threat have lower self-efficacy and lower academic performance.
Lack of Threat Effects
The findings also suggest that people with depression who do not experience stereotype threat do not have lower self-efficacy and lower academic performance.





Categorical Perception of Facial Expressions: Improving Research Methodology and Examining Lateralization

Hadar Zeigerson and Kevin J. Holmes*
Department of Psychology, Colorado College, Colorado Springs

Categorical perception (CP): Source discrimination of stimuli from different categories compared to stimuli from the same category.

Two Issues

Research methodology for categorical perception (CP): Participants using memory responses to an auditory stimulus identified. Multiple categories have not been used to test CP of facial expressions.

Assessing lateralization of categorical perception (CP): CP is a left hemisphere (LH) phenomenon. CP is a right hemisphere (RH) phenomenon. CP is a bilateral phenomenon.

Visual search task with no memory component.

Participants: Undergraduate students (N=100) at Colorado College, Colorado Springs, CO.

Procedure: Participants were shown a target face and a comparison face. They were asked to identify the target face. The target face was either the same as the comparison face or different. The comparison face was either the same as the target face or different.

Results: Participants showed categorical perception for faces. The results are shown in the bar chart below.

Condition	Accuracy
Same	~0.85
Different	~0.55

Experiment 2

Assessing competing accounts of lateralization.

Participants: Undergraduate students (N=100) at Colorado College, Colorado Springs, CO.

Procedure: Participants were shown a target face and a comparison face. They were asked to identify the target face. The target face was either the same as the comparison face or different. The comparison face was either the same as the target face or different.

Results: Participants showed categorical perception for faces. The results are shown in the bar chart below.

Condition	Accuracy
Same	~0.85
Different	~0.55

The present study

Participants: Undergraduate students (N=100) at Colorado College, Colorado Springs, CO.

Procedure: Participants were shown a target face and a comparison face. They were asked to identify the target face. The target face was either the same as the comparison face or different. The comparison face was either the same as the target face or different.

Results: Participants showed categorical perception for faces. The results are shown in the bar chart below.

Condition	Accuracy
Same	~0.85
Different	~0.55

Effects of Stereotype Threat in People with a History of Depressive Disorders

Kjersten Conway
The Colorado College, Colorado Springs, CO

Introduction

Stigmatization of Depressive Disorders

- Cultural stigmatization of the illness and its treatment (Munich & Potts, 2011)
- Perceived as costly, invisible, and long
- Synonyms like lethargy, chronic, exhaustion, helplessness, reduced mental performance, and lack of energy are interpreted as weakness of character
- Negative perceptions of antidepressant medications
- Stigmatization exacerbates depression symptoms and makes patients less likely to seek treatment (Berney et al., 2008)
- Most people who meet the criteria for clinical depression do not seek help
- 20% stereotypes about depression are severely under-researched compared to other kinds of prejudice
- "Labeled Affect" trope: stereotypical link between depression and enhanced creativity

Stereotype Threat

- When a negative stereotype hangs over one's head, intellectual performance suffers (Steele, 1997)
- Pressure to prove oneself incompatible with the stereotype ties up cognitive resources (Stigler & Neuberg, 2007)
- Test must be theoretically difficult, triggering self-doubt (e.g., standardized testing)
- Situational predicament
- Helps explain widespread underperformance of stigmatized groups, such as African American college students and women on STEM fields
- Necessary and sufficient factors
 - Salience: reminder of stereotype
 - Motivational reactivity
 - Domain identification: achievement in the tested area is tied to the person's sense of self

Hypotheses

- 1) I predicted that participants with a history of depression under stereotype threat (who believed we were measuring stereotype-relevant "creative talents") would show:
 - a) Poorer performance on GRE-type Sentence Equivalence questions
 - b) Slower performance on the Florida Assessment Test
 - c) Slower Stoppage Task responses
 - d) Reduced self-esteem and self-efficacy
 - e) Either increased or decreased help-seeking behavior (no directional hypothesis) compared to those with depression in the creativity (link stereotype-relevant) condition and participants with no depression history in both conditions.

Method

28 participants were recruited and tested online via Zoom. I used a 2x2 between-subjects design.

IV: Depression

- All participants, 18 with history of clinical depression
- Based on reports to "have you ever been diagnosed with or treated for clinical depression by a doctor or psychologist?"

IV: Threat Manipulation

- Participants were randomly assigned to one of two versions of the same test instructions differed but questions were identical
- Threat condition: They were told that tests would evaluate how cognitive impairment of affective problem solving and reasoning abilities
- Control condition: They were told that the tests would evaluate creative problem solving and reasoning abilities

Dependent Variables

- Performance on GRE-type Sentence Equivalence problems (accuracy and speed)
- Performance on a Remote Associates Test (accuracy and speed)
- Strong performance (strong incongruent response latency) - (mean congruent response latency)
- Rosenberg Self-Esteem Scale: mean score 1.4
- New Dimensional Self-Efficacy Scale: mean score 1.6
- Help seeking: number of tests used on difficult/unsuccessful reasoning section

Results

Effects of Depression and Manipulation on GRE Verbal Accuracy



Reversal of Primary Hypothesis

- Creativity manipulation caused a significant boost in GRE verbal performance among participants with a history of depression
- No stereotype threat effects from threat manipulation

Self-esteem

- Participants with a history of depression had lower self-esteem, but there was no main effect of manipulation or depression x manipulation interaction

Other Hypotheses

- There were no significant results on any of the other dependent variables

How Findings Depressions

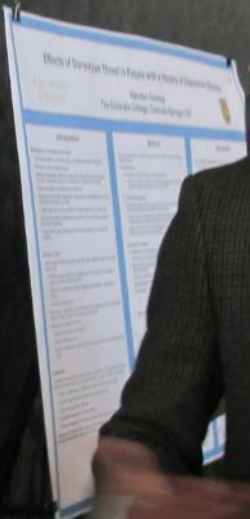
- When aware with stereotypes, "stigma of creativity" may
- This finding is best explained by stereotype threat effects. When
- When positive stereotypes and self-esteem non-manipulated
- Creativity stereotypes
- Attribute this to the widespread
- Creativity is a commonly
- There is limited empirical
- The present study provides
- Enhance these group differences
- To our knowledge, this is the first study
- Stereotype, and of the most common
- The intellectual performance of people

Lack of Threat Effects

- Indicates that the "negative
- Reinforcing depression
- Creativity was also a
- That the bipolar is
- Creativity

N-terminal EF-Hand Calcium Binding Proteins (NECABs) in Early Development of the Nervous System

Nicholas Bernstein^{1,2}, Nicholas Mitsios¹, Tony Jimenez-Berstein¹, and Jan Mulder¹
 do College, Colorado Springs, CO. ² Fluorescence Tissue Profiling Laboratory, Science for Life Laboratory, Stockholm, Sweden



Utrsey Bek - A Review of Protective Factors against Sexualization and an Argument for Summer Camp

Bismillah Conway - Tami-An Roberts
The Colorado College, Colorado Springs, CO

Project by Emily Quaresima Chang (advisor)

Project Topic

Project Summary

Method

Results

Conclusions

References



COLORADO COLLEGE

Representations of Word Meaning in Dyslexic and Non-Dyslexic Individuals

Samantha Ellner, Emily Chan, and Kevin J. Holm
The Colorado College, Colorado Springs, CO

Introduction

Previous Research on Dyslexia

- Dyslexic individuals show impairments in:
 - visual processing of words (Stein & Walsh, 1997)
 - visual processing of words (Ziegler et al., 2010)
 - the mapping of sounds to symbols (Ziegler et al., 2010)
- Such findings suggest that dyslexic individuals process words differently from non-dyslexic individuals.

Research Question

- Do such processing differences lead to differences in how dyslexic and non-dyslexic individuals think about words?
- Are there differences in the underlying representation of word meaning?

Method

Participants

- 15 self-identified dyslexic participants and 15 non-dyslexic participants.
- Recruited on Amazon Mechanical Turk
- Matched for age, gender, and location of residence
- Compensated up to \$2

Materials

- 41 pairs of semantically matched words
- Half were confusable (contained the letter combinations "ir" or "ri") and half were non-confusable

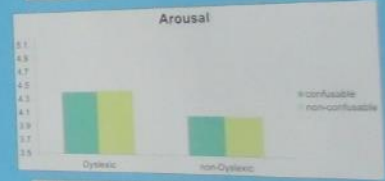
Confusable	Non-Confusable
Anxiety	Fear
Audience	Crowd
Celling	Roof
Bank	Marble
Movie	Film

Procedure

- Each word rated on the dimensions of valence, arousal, and dominance (Bradley & Lang, 1999)
- 9-point Likert scale
- Order of dimensions counterbalanced
- No time limit

Images used to convey dimensions: from left, dominance, arousal, and valence

Results





RD. P. CELESTE THEATRE



Bringing Unsexy Back: A Review of Protective Factors Sexualization and an Argument for Summer Camp

Susannah Conway - Tomi-Ann Roberts
The Colorado College, Colorado Springs, CO

Introduction	Protective Factors	Proposed
<p>Introduction</p> <p>Sexualization is the process of being treated as an object of sexual desire. It is a form of objectification that is rooted in a patriarchal system of power. Sexualization is a process of being treated as an object of sexual desire, rather than as a person with agency and autonomy.</p> <p>Sexualization is a process of being treated as an object of sexual desire, rather than as a person with agency and autonomy. It is a form of objectification that is rooted in a patriarchal system of power.</p>	<p>Media Literacy</p> <ul style="list-style-type: none"> Media literacy programs are designed to increase media literacy skills by encouraging individuals to identify, analyze, assess, and create alternative to popular media of ads, opinions, and behavior presented in the media. Do you know how to "read" the media? Increase critical thinking skills media images? "Increase weight concerns" and "Media is not the answer to the world" Developing "media literacy" skills on levels of interpretation More research is needed on the positive effects of empowering media literacy. <p>Physical Activity</p> <ul style="list-style-type: none"> Having girls and young women focus their physical assistance to physical activity might protect them from the negative consequences of sexualization. <p>Body-Focused Activities</p> <ul style="list-style-type: none"> Linked to increased self-esteem, growth effort, and increased body satisfaction and overall well-being, and increased mental health. Has been to body dissatisfaction, weight concerns, and disordered eating. Some girls may encourage girls to value more strongly in gender inequality. Researcher's interest: How an enhancing awareness and internalization of the body's internal state, like eating the focus away from external body appearance. Shows to increase levels of self-efficacy and internalized eating, and increase levels of body satisfaction, body awareness and "body awareness." See also: Body-Focused Activities <p>Single-Sex Environments</p> <ul style="list-style-type: none"> Single-sex environments may have a positive effect on girls' body and self-esteem. Single-sex environments may have a positive effect on girls' body and self-esteem. Single-sex environments may have a positive effect on girls' body and self-esteem. <p>Physical Activity</p> <ul style="list-style-type: none"> Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. <p>Body-Focused Activities</p> <ul style="list-style-type: none"> Body-focused activities may have a positive effect on girls' body and self-esteem. Body-focused activities may have a positive effect on girls' body and self-esteem. Body-focused activities may have a positive effect on girls' body and self-esteem. <p>Taking the Lessons Home</p> <ul style="list-style-type: none"> Girls would be given information on how to take the lessons home. Girls would be given information on how to take the lessons home. Girls would be given information on how to take the lessons home. <p>Conclusion</p> <p>The sexualization of girls is not only a public health concern, but it is also a social justice issue. It is a form of objectification that is rooted in a patriarchal system of power. It is a process of being treated as an object of sexual desire, rather than as a person with agency and autonomy. It is a form of objectification that is rooted in a patriarchal system of power.</p>	<p>Single-Sex Environments</p> <ul style="list-style-type: none"> Single-sex environments may have a positive effect on girls' body and self-esteem. Single-sex environments may have a positive effect on girls' body and self-esteem. Single-sex environments may have a positive effect on girls' body and self-esteem. <p>Physical Activity</p> <ul style="list-style-type: none"> Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. Participating in sports or physical activity may have a positive effect on girls' body and self-esteem. <p>Body-Focused Activities</p> <ul style="list-style-type: none"> Body-focused activities may have a positive effect on girls' body and self-esteem. Body-focused activities may have a positive effect on girls' body and self-esteem. Body-focused activities may have a positive effect on girls' body and self-esteem. <p>Taking the Lessons Home</p> <ul style="list-style-type: none"> Girls would be given information on how to take the lessons home. Girls would be given information on how to take the lessons home. Girls would be given information on how to take the lessons home.

Facial Expressions and Drinking Labelation

Facial Expressions

Drinking Labelation

Facial Expressions

Drinking Labelation

Facial Expressions and Drinking Labelation

Facial Expressions

Drinking Labelation

Facial Expressions

Drinking Labelation

MAIN SPACE





on of Facial Expressions:
Technology and Examining Lateralization

Kevin J. Holmes*

College, Colorado Springs

Categorical process
determination of lateral
control in social

Conclusion

Research methodology: To test

the hypothesis that lateralization of

facial expressions is related to

lateralization of control in social

interaction, a group of 20

participants were shown a series of

facial expressions and asked to

rate the intensity of the expression.

Results showed that lateralization of

control in social interaction is

related to lateralization of facial

expressions. This finding has

implications for understanding the

role of lateralization in social

interaction and may have

applications in clinical settings.

Keywords: lateralization, facial


expressions, social interaction

Display Board

SciLifeLab

Terminal Effort Calcium Binding Proteins (NECBs) in Early Development of the Nervous System

Abstract: ...



Methods

Discussion

Effects of Stereotype Threat in People with a History of Depressive Disorders

Kjersten Conway
The Colorado College, Colorado Springs, CO

Introduction

Big variation of depressive disorders

1. A longitudinal study of the effects of the environment (Murray & Frank, 2007)

2. No correlation with depressive disorder

3. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

4. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

5. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

6. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

7. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

8. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

9. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

10. Depressive disorder is highly prevalent worldwide, including clinical and sub-clinical depression

Method

100 participants were recruited and tested over a six-week period

1. All participants had a history of clinical depression

2. Stereotype threat was induced by asking participants to complete a test of general knowledge by a doctor or psychologist

3. Three tasks were used

4. Participants were randomly assigned to one of two conditions of the same test

5. Participants were asked to complete the test

6. Participants were asked to complete the test

7. Participants were asked to complete the test


8. Participants were asked to complete the test

9. Participants were asked to complete the test

10. Participants were asked to complete the test

Results

Effects of Depressive and Stereotype Threat on GRE Verbal Fluency



Group	Score
Depressive	~15
Stereotype	~10
Control	~15

Discussion

New Finding: Depressive-Creativity Stereotype Threat

- When people with depression completed a GRE-type verbal test, their performance was lower than when they completed the test without the stereotype threat.
- This finding is best explained by Stereotype Threat theory, an effect of stereotype threat (Steele, 1997).
- When people with depression were primed before a relevant task, they performed worse than when they were not primed.
- Labelling this as the stereotype threat effect suggests that people with depression are more likely to experience stereotype threat than people without depression.
- The present study provides initial evidence that stereotypes about people with depression are not always accurate.
- To our knowledge, this is the first study to demonstrate that the stereotype threat of the most common stereotype about depression, that people with depression are less creative, is not always accurate.

Future Research

- Empirically determining prevalence of stereotypical depression-creativity link
- Examining effects of stereotype threat on creative domain identification in people with depressive disorders

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Categorical Perception of Facial Expressions: Improving Research Methodology and Examining Lateralization

Hadar Zeigerson and Kevin J. Holmes¹
Department of Psychology, Colorado College, Colorado Springs

Categorical perception (CP) refers to the phenomenon of abrupt transitions in perceived similarity as a function of physical distance between stimuli.

Test items: Research on categorical perception of facial expressions has been limited to studies of emotion recognition. This study examined whether categorical perception of facial expressions is lateralized.

Procedure: Participants were presented with pairs of facial expressions and asked to judge their similarity. The stimuli were presented to the left and right sides of the face.

Results: The present study found that categorical perception of facial expressions is lateralized to the left side of the face.

Experiment 1: Initial search task with no memory component



Experiment 2: Working memory task of identification



Conclusions: Initial search task with no memory component

Conclusions: Initial search task with no memory component

Conclusions: Initial search task with no memory component

Conclusions: Initial search task with no memory component

Conclusions: Initial search task with no memory component

Bringing University Back to a House of Science: Improving Research Methodology and Examining Lateralization

Experiment 1: Initial search task with no memory component

Experiment 2: Working memory task of identification

Conclusions



EXIT

Knowledge of an underlying process and changes

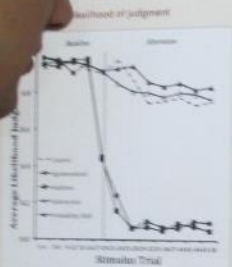
Colorado Springs, CO

Introduction

Explicit learning and knowledge
 Research suggests that explicit instructions facilitate
 learning when participants are able to identify the
 underlying process. However, when the underlying process
 is not explicitly stated, participants may learn through
 implicit learning. The additional information
 available from the underlying process is not available
 when the process is not explicitly stated (Thorpe et al., 2005; Van
 Lehn & Swick, 2005; Van Lehn, 1988).

Implicit learning can be defined as the ability to learn
 about the underlying process of a task without being
 explicitly instructed. This type of learning is often
 associated with procedural memory and is thought to
 be a form of automatic learning (Thorpe et al., 2005; Van
 Lehn & Swick, 2005; Van Lehn, 1988).

Results

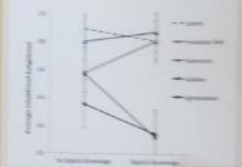


- Significant main effects for the deviation condition, $F(4, 72) = 14.265, p < .001, \eta^2_p = .487$
- Significant main effects for the baseline versus deviation, $F(1, 72) = 147.204, p < .001, \eta^2_p = .880$
- Significant interaction between these factors, $F(4, 72) = 21.482, p < .001, \eta^2_p = .762$
- A between-groups comparison revealed that explicit knowledge was significantly better than implicit knowledge in the deviation condition, $F(1, 72) = 147.204, p < .001, \eta^2_p = .880$
- A between-groups comparison revealed that the implicit condition was significantly better than the control condition, $F(1, 72) = 147.204, p < .001, \eta^2_p = .880$

Discussion

Ability to detect changes
 Participants had demonstrated an ability to detect when there was a change of the underlying process, in which explicit knowledge of the underlying process makes some deviation easier to detect while making others harder.

Comparison with implicit learning



- There is a range of sensitivity seen in the explicit-implicit learning experiment with 0% correct when which correctly is a bimodal distribution when explicit knowledge is given
- Significant interaction between explicit and implicit knowledge, $F(4, 72) = 14.265, p < .001, \eta^2_p = .487$

Conclusions/implication
 Explicit knowledge of the underlying process caused participants to focus only on the grammaticality of whatever stimulus was presented and to ignore changes in transition probabilities that could only be determined by analyzing across numerous stimuli.

Explicit and implicit learning can be useful in different situations, in which people need to be aware of the limitation of both and the correct method to apply them

Future directions
 Examining if implicit knowledge would interfere with the performance of change detection when explicit knowledge is given

Replicate the current study using more deviation conditions to extend to when explicit learning or implicit is better than the other

Examine the role of cognitive resources and effort in the effect of implicit and explicit learning

Threat in People with a History of...
Kjersten Conway
The Colorado College, Colorado Springs

Artificial Grammar Experiment: How explicit knowledge of an underlying process influences our ability to detect change
Henry Fay and John Hanger
The Colorado College, Colorado Springs, CO



Effects of Inhaled particulate PM2.5 exposure on DABM-dependent behaviors in the rat

Angie Rich and Lori Dineen
Colorado College, Colorado Springs, CO

The poster is divided into sections: Introduction, Methods, Results, and Discussion. It includes a bar chart with two groups: Control and PM2.5. The chart shows various behavioral metrics, with the PM2.5 group generally showing higher values in several categories. A small photograph of a rat is also present.

Effects of Primed Self-Perceptions on Environmental Behaviors

Julia Liao
Colorado College, Colorado Springs

Introduction

The importance of Pro-Environmental Self-Identity (PEI) in the literature of strong moral identity suggests that their attitudes through external cues such as their own past behaviors (Barn, 1972). Self-perceptions of behavior may also play a role in forming long-term self-identity. Reminding people of environmental actions that they performed in the past increases their pro-environmental self-identity (see for example, Bagozzi, Dholakia, & Rubeck, 2014), which in turn increases their future pro-environmental behaviors.

Method

One hundred and eleven undergraduate students from Colorado College participated in this study. They completed four written questionnaires. Each participant was randomly assigned to one of three conditions: pro-environmental self-perception prime, environmental self-perception prime, or non-environmental self-perception prime.

Independent Variable

- The priming questionnaires listed four common behaviors:
 - Recycling an old item
 - Turning off/plugging an electrical device not in use
 - Using a reusable beverage container instead of buying a disposable plastic one
 - Using a reusable shopping bag instead of buying a disposable plastic one

The behaviors were described as 1) environmentally beneficial, 2) morally beneficial to other people, or 3) economically beneficial for the self.

Dependent Variables

- Participants completed the Environmental Attitudes Inventory (EAI-24).
- Participants were asked to write a free-form description of their attitudes toward pro-environmental behaviors.
- Participants were asked to write a free-form description of their attitudes toward pro-environmental behaviors, and could choose to use either their paper (traditional format) or recycled newspaper (eco-friendly format).

Julia Liao
Colorado College

She is speaking to a man in a suit who is looking at the poster. She has her hands clasped in front of her and is looking towards the man.

COLORADO COLLEGE

Small Stakes, High Impact: How Low Consequence Games

Samuel Zarky and John
Colorado College, Colorado S

Introduction

Assessing Potential Risk and Reward

- People make decisions based on the perceived value of potential losses and gains rather than their objective
- These decisions are further influenced by a preference for a sure outcome over a gamble, even if the expected value of the gamble is higher than the sure outcome
- When making a decision between two items, a few items are selected, even if it means a lower net gain
- Free trials have been shown to elicit a strong preference for the "sure" item

Emotion and Decision Making

- Emotion appears to bias decision making based on an emotional "reaction" rather than a cognitive process based on an analysis

Using Uncertainty to Varying Affect

- Using a risk to elicit a strong preference has been shown to have an effect on decision making
- Using probability games have different effects on decision making

Methods

Participants

- 211 participants
- Professionally trained Colorado College students
- Randomized through randomized assignment

What if Design - Independent Variables

- Game Type - each subject played a game with a 50% chance to win or lose
- Loss probability (0.1, 0.2, 0.3, 0.4, 0.5)
- Gain probability (0.1, 0.2, 0.3, 0.4, 0.5)

Game Type

- Game Type - each subject played a game with a 50% chance to win or lose
- Loss probability (0.1, 0.2, 0.3, 0.4, 0.5)
- Gain probability (0.1, 0.2, 0.3, 0.4, 0.5)

Decision Making

- Decision Making - each subject played a game with a 50% chance to win or lose
- Loss probability (0.1, 0.2, 0.3, 0.4, 0.5)
- Gain probability (0.1, 0.2, 0.3, 0.4, 0.5)

1. The probability of winning is 50%
2. The best of 50/50 game will have an effect on decision making
3. Probability of winning is 50%
4. Higher affect than probability game will have an effect on decision making
5. Lower affect than probability game will have an effect on decision making

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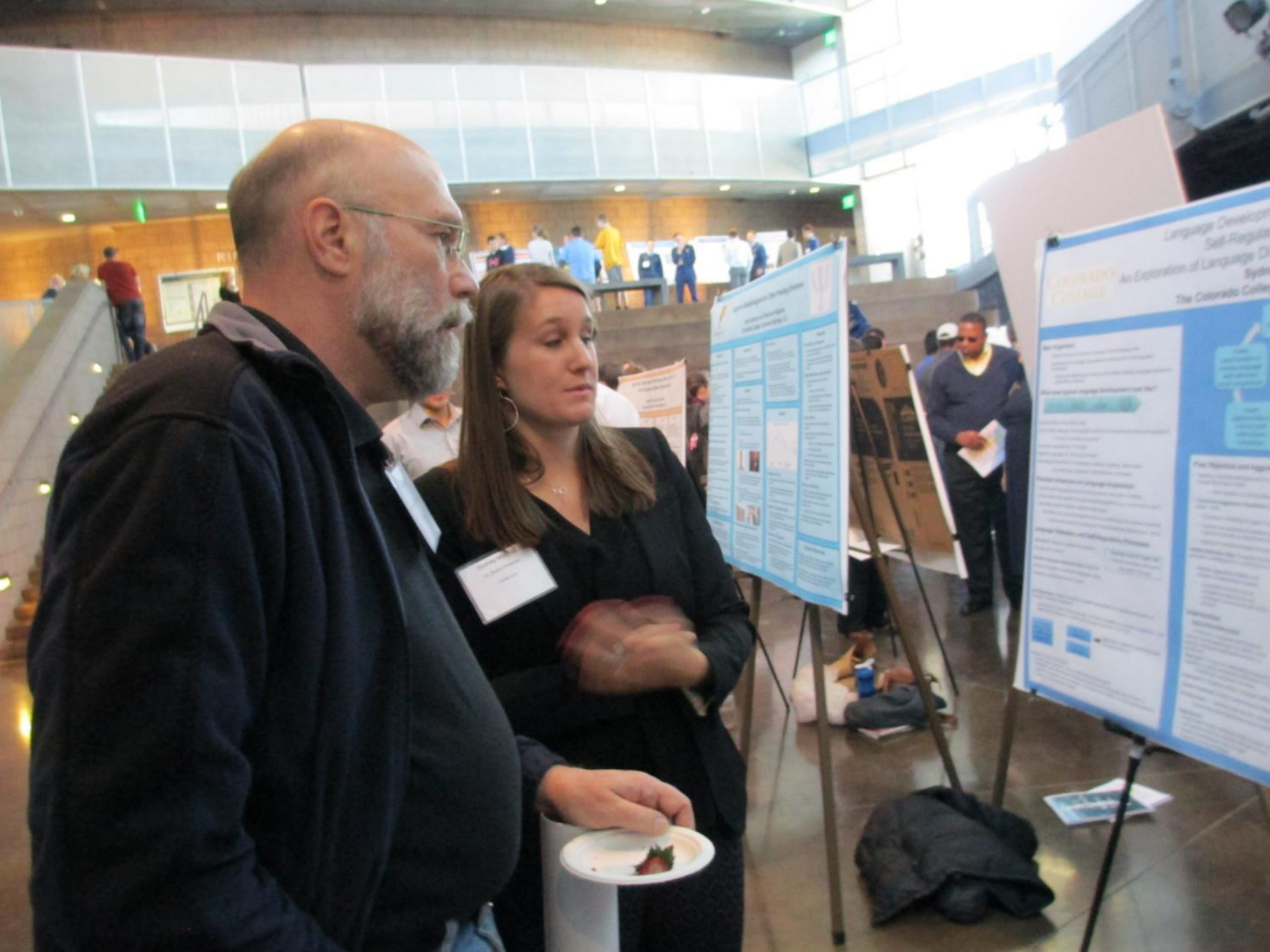
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Language Development and Self-Regulation
An Exploration of Language Development and Self-Regulation in the Colorado Rockies

Area	Key Findings
Language Development	...
Self-Regulation	...

Language Development and Self-Regulation
An Exploration of Language Development and Self-Regulation in the Colorado Rockies

Colorado Rockies

Language Development and Self-Regulation

Colorado Rockies

Language Development and Self-Regulation

Colorado Rockies



Colorado College

Effects of Primed Self-Perception

Introduction

The Importance of Pro-Environmental Self-Identity

Strong predictors of intent to engage in environmentally friendly behaviors (such as their subjective norms, specific attitudes, or perceived behavioral control).

People willingness to donate time and money to an environmental cause, as well as choice of eco-friendly products over traditional alternatives.

The Behavior-to-Identity-to-Behavior Relationship

- Self-Perception Theory: In the absence of strong internal cues, people form their attitudes through external cues such as their own past behaviors (Bem, 1972).
- Self-perceptions of behavior may also play a role in forming long-term self-identities.
- Repeating periods of pro-environmental activities that they performed in the past increases their pro-environmental self-identity (for an example, see Stewart, Wang, & Walker, 2014), which in turn increases their future pro-environmental behaviors.

What About a Pro-Moral Self-Identity?

People who think environmental issues are also ethical/moral issues show greater interest and a greater sense of personal responsibility to act on their concerns (Bhattacharya, 2012).

But reminding people of their past pro-moral behaviors leads to moral licensing, because they believe morally in the past, they feel that they have license to subsequently behave immorally (Conroy & Paine, 2012).

What About Economic Appeals?

Emphasizing money-saving benefits to promote an eco-friendly behavior is less effective than using an environmental appeal or when to appeal at all (Boutchkova et al., 2015).

Thinking about money activates a self-sufficiency of self-efficacy, which reduces pro-moral behavior for money, rather than being interested in environmental welfare for its own sake.

Hypotheses

- Priming benefits to promote their past behaviors as pro-moral or financially beneficial will lead to weaker pro-environmental attitudes than priming participants to think of their past behaviors as pro-environmental.
- Priming awards to promote their past behaviors as pro-moral or financially beneficial will also lead to less pro-environmental behavior than priming participants to think of their past behaviors as pro-environmental.

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Small State

COLORADO COLLEGE

Introduction

Assessing Potential Risk and Reward
People make decisions based on the perceived value of those decisions and gain rather than the final outcome. Those decisions are further influenced by a preference for a sure outcome over a gamble, even if the expected value of the gamble is higher than the sure outcome.

When making a decision between two items, a low level sets preferences, and if it is raised a more "hot" gain than level has been chosen to select a strong positive alternative.

Decision and Decision Making
Evidence suggests that these decisions are based on an emotional process rather than a cognitive process (such as financial).

Having Uncertainty is Varying Affect
Having the same games but have chosen to have an effect to decide.
Low and high probability games have different effects on people depending on the outcome.

Hypotheses

1. Risk games will be favored at the end of the experiment when the beginning of the experiment.
2. The presence of uncertainty in a game will have an effect on the preference for that game.
3. The level of uncertainty will have an inverse relationship with affect depending on the outcome.
4. Participants who play the low probability game will have a higher affect than participants who play the high probability game.
5. Participants who play the low probability game will have a higher affect than participants who play the high probability game.

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THEATRE



Small Stakes, High Impact: How Varying Levels of Low Consequence Games Influences Affect

COLORADO COLLEGE

Samuel Zarky and John Horner
Colorado College, Colorado Springs, CO

Introduction

Measuring Preference Bias and Reward
These two measures based on the perceived value of potential rewards and pain reflect the final outcome. These measures are further influenced by preferences for a sure outcome over a gamble, even if the expected value of the gamble is higher than the sure outcome.

When making a decision between two items, a bias from over-optimism over "I'll have a lower net gain" or "I've been here before, I've been able to win a winning game" affects our choice.

Choice and Decision Making
Choice is supported and those decisions are based on an individual's preference rather than a cognitive process such as reasoning.

Using Probability of Winning Affect
Using real or virtual games has shown a strong bias to have an affect on preference.
Low and high probability games have different affects on decision depending on the outcome.

Hypothesis

Participants will be higher on the end of the experiment than in the beginning of the experiment.

The amount of consistency in a game will have an effect on the amount of preference on the end of the game.

The level of probability will have an effect on preference.
Participants who play the low probability game will have a higher preference than participants who play the high probability game.
Participants who play the low probability game will have a higher affect than participants who play the high probability game.

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Beatty, J. T., & Zarky, S. (2014). Preference bias and reward. *Journal of Experimental Psychology: Applied*, 20(1), 1-10.

Beatty, J. T., & Zarky, S. (2014). Preference bias and reward. *Journal of Experimental Psychology: Applied*, 20(1), 1-10.

Beatty, J. T., & Zarky, S. (2014). Preference bias and reward. *Journal of Experimental Psychology: Applied*, 20(1), 1-10.

Methods

Participants
211 students
Undergraduate Colorado College students
Recruited through convenience sampling

Stimuli Design - Independent Variables

- Game Type - each subject played three games
 - Low probability (LP) and a
 - High probability (HP) and a
 - or to get the preferred chocolate
 - Choice - receive the preferred chocolate
- A hot paper was used to roll the die
- Game Outcome - participants were then segmented by the outcome of their chance games (win both, win one, lose LP and win HP, and lose both LP)

Dependent Variables

- Affect - emotional responses for each game type
- This was measured using a modified Michigan Affective Scale

Procedure

Before the experiment, participants indicated when they were ready to play the game.

- Participants received a hot paper to roll the die
- Participants received a hot paper to roll the die
- Participants received a hot paper to roll the die
- Participants received a hot paper to roll the die
- Participants received a hot paper to roll the die

Results

Free Chocolate Causes Happiness
Participants were significantly happier at the end of the experiment than in the beginning.

Uncertainty and Affect
There was a large difference between the affect scores of the choice condition, the HP game, and the LP game. The choice condition had the highest affect scores, followed by the HP game, and then the LP game.

- Lossing both games caused a larger change in affect than losing one game or winning both
- Winning both games led to a significant increase in affect when compared to winning just the HP game
- But not when compared to winning just the LP game

Winning the LP game increased affect more than winning the HP game

- Lossing the HP game reduced affect more than losing the LP game

Affect scores increased with the level of consistency

RICHARD CELESTE THEATRE



Cognitive Broadening and the Other-Praising Emotions
 Jake Sullivan and Tomi-Ann Roberts
 Colorado College, Colorado Springs, CO

Abstract
 Other-praising emotions (OPEs) are positive affective states that are experienced when one observes another person's positive actions or qualities. OPEs are thought to be related to cognitive broadening, which is the expansion of one's attentional focus to include a wider range of information.

Hypotheses
 H1: OPEs will be related to cognitive broadening.
 H2: OPEs will be related to positive affective states.
 H3: OPEs will be related to positive affective states and cognitive broadening.

Method
 Participants (N = 100) completed a series of tasks designed to measure OPEs, cognitive broadening, and positive affective states.

Results
 OPEs were positively related to cognitive broadening and positive affective states.

Conclusions
 OPEs appear to be related to cognitive broadening and positive affective states, supporting the idea that OPEs are related to cognitive broadening.

References
 Fredrickson, B. L. (2001). The broaden-and-build theory of positive emotions. *American Psychologist*, 56, 460-465.

Other-Praising Emotions Continued
 OPEs are thought to be related to cognitive broadening and positive affective states. OPEs are thought to be related to cognitive broadening and positive affective states.

Manipulation Checks
 Participants reported experiencing the intended emotion.

Hypothesis 1: Supported Indirectly
 OPEs were related to cognitive broadening and positive affective states.

Hypothesis 2: Not Supported
 OPEs were not related to cognitive broadening and positive affective states.

Figure: Mood as a Function of Time
 A line graph showing mood scores over time for three groups: OPE, Control, and No OPE. The OPE group shows a significant increase in mood scores over time compared to the other groups.

Effect of brief postnatal PDE exposure on adult dependent behaviors in the rat

Author: Wata and Carl Driscoll
Colorado College, Colorado Springs, CO

The poster is divided into several sections:

- Abstract:** Briefly summarizes the study's purpose and findings.
- Introduction:** Discusses the role of postnatal exposure to perinatal androgen (PDE) in the development of dependent behaviors.
- Methods:** Details the experimental design, including the use of rats and various behavioral tests.
- Results:** Includes a bar chart showing the effects of PDE exposure on different behavioral measures.
- Discussion:** Interprets the results in the context of neuroendocrinology and dependent behaviors.
- References:** Lists key scientific papers related to the study.

Effects of Primed Self-Perceptions on Environmental Behaviors

Julia Liao
Colorado College, Colorado Springs, CO

The poster is titled 'Effects of Primed Self-Perceptions on Environmental Behaviors' and is from Colorado College. It includes the following sections:

- Introduction:** Discusses the importance of pro-environmental identity and how primed self-perceptions can influence behavior.
- Method:** Describes the study involving 100 undergraduate students who completed four written questionnaires.
- Results:** Lists several findings, such as 'The priming questionnaire led to a greater intention to recycle' and 'Participants who were primed with a pro-environmental identity were more likely to use recycled paper.' A small image of a recycling bin is included here.
- Selected References:** Lists academic sources related to the study.

Abstracts

Abstract

Keywords

References

COLORADO COLLEGE

Language Development and the Acquisition of Self-Regulation Mechanisms: An Exploration of Language Disorders and External

Sydney Minchin
The Colorado College, Colorado Springs, CO

Abstract

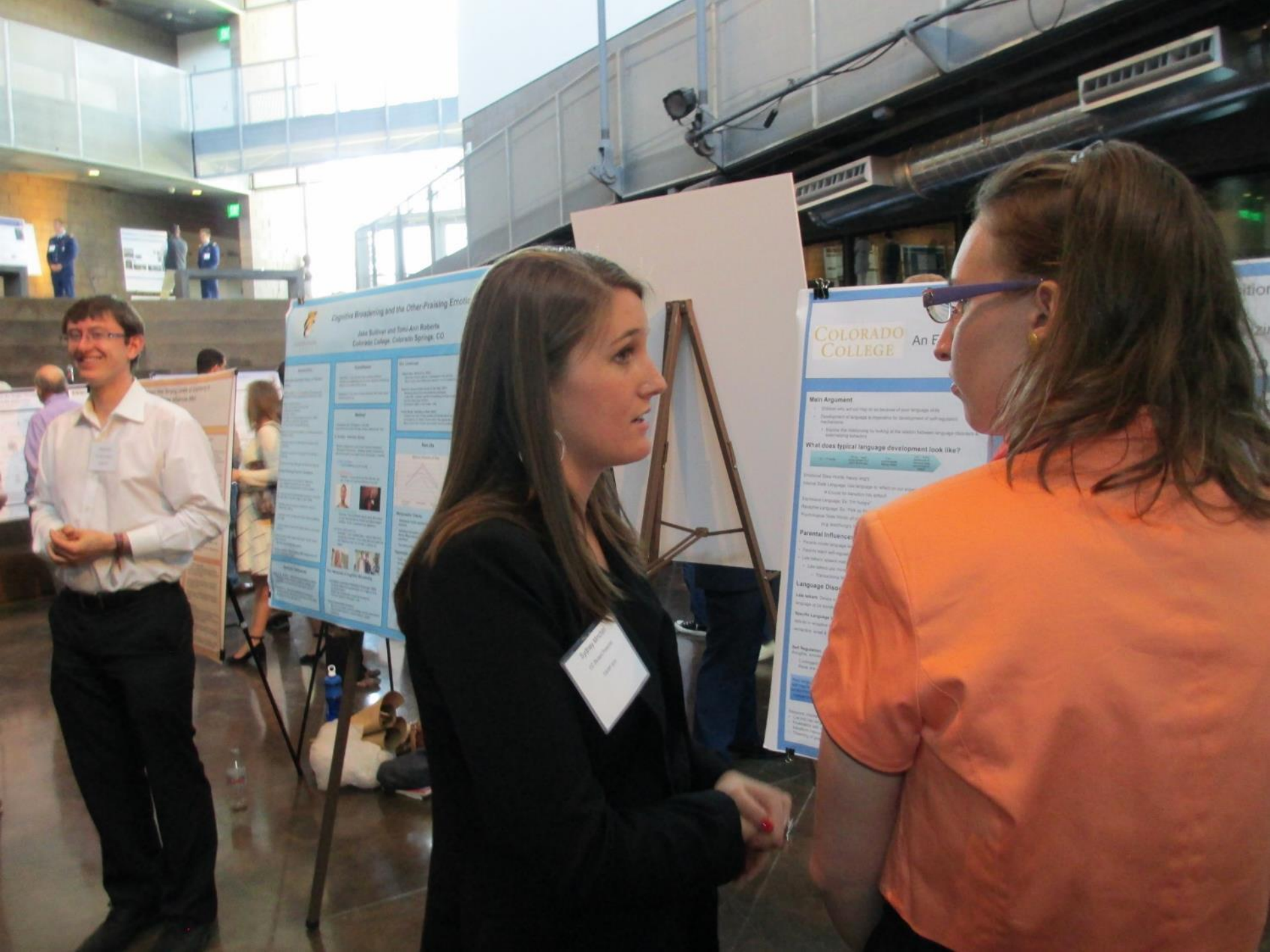
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References

Peer Rejection and Aggression

Interventions





Cognitive Broadening and the Other-Praising Emotions
Jesse Sullivan and Toni Ann Roberts
Colorado College, Colorado Springs, CO

Abstract:
[Text describing the study's focus on cognitive broadening and other-praising emotions]

Keywords:
[List of keywords]

Method:
[Description of the study's methodology]

Results:
[Summary of the study's findings]

Conclusions:
[Summary of the study's conclusions]

References:
[List of references]

COLORADO COLLEGE An F...

Main Argument
[Text of the main argument]

What does typical language development look like?
[Text describing typical language development]

Parental Influence
[Text discussing parental influence on language development]

Language Dis...
[Text discussing language disorders]

KYLEE BROWN
Ph.D.
Assistant Professor
Psychology

Effects of brief postnatal PBDE
GABA-dependent behavior

Joslyn Wang
Colorado College

The poster contains several sections with text and diagrams. At the top, it reads 'Effects of brief postnatal PBDE' and 'GABA-dependent behavior'. Below this, the author's name 'Joslyn Wang' and affiliation 'Colorado College' are listed. The main body of the poster is divided into sections with headings like 'Introduction', 'Methods', 'Results', and 'Discussion'. There are several diagrams, including a flowchart on the left side and a diagram at the bottom right showing a brain with arrows indicating neural pathways.



COLOrado COLLEGE

The Importance of
Being proactive of intent to engage
from behavioral science, specific advice
Predicts willingness to donate time or
effort of our identity produce over time

The Behavior to Identify
Self-Perception Theory: in the absence of
obstacles through external cues such as the
Self-perceptions of behavior may also predict
Motivating people of pro-environmental actions
Increase their pro-environmental self-identity
which in turn increases their future pro-environmental

What About a Pro-Moral?
People who think environmental threats are also
concerns and a greater sense of personal responsibility
(McKenzie, 2011)

But convincing people of their past pro-environmental
because they believed strongly in the past
subsequently behave differently otherwise

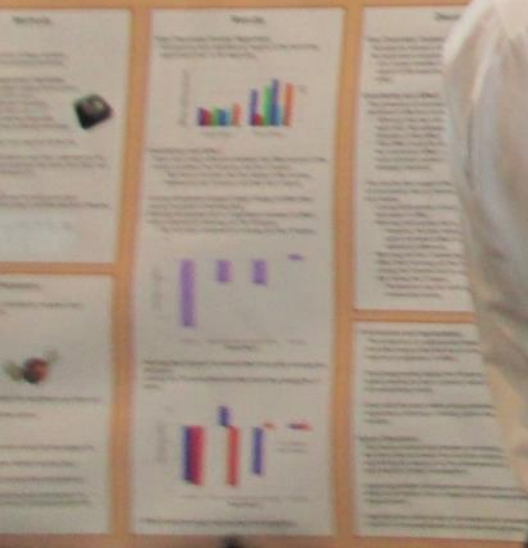
What About
Empowering people seeing becoming
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2011)

Thinking about...
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High Impact: How Varying Levels of Uncertainty in
Consequence Games Influences Affect

Samuel Zarky and John Horner
Colorado College, Colorado Springs, CO



Cognitive Broadening and the Other-Praising

Jake Sullivan and Tomi-Ann Roberts
Colorado College, Colorado Springs, CO



EXIT



Cognitive Broadening and the Other-Praising Emotion
 Jake Sullivan and Tomi-Ann Roberts
 Colorado College, Colorado Springs, CO

Introduction
 The Broaden-and-Build Theory of Positive Emotions (Fredrickson, 2004) suggests that positive emotions broaden one's momentary thought-action repertoires, which in turn builds one's personal resources (e.g., skills, knowledge, social support, resilience, confidence, etc.).

Hypotheses
 Hypothesis 1: We will test whether positive emotions broaden one's momentary thought-action repertoires and whether this will lead to increased cognitive broadening (i.e., the other-praising emotion).

Method
 Study 1: Undergraduate students (N = 100) completed a 10-minute video of a "Thank You" message from a friend.

Results
 A line graph showing the relationship between the independent variable (e.g., positive emotion) and the dependent variable (e.g., cognitive broadening). The graph shows a positive correlation, with a peak in the middle of the x-axis.

Selected References
 Fredrickson, B. L. (2004). The broaden-and-build theory of positive emotions. *American Psychologist, 59*, 21-36.

Other-Praising Emotion
 Other-praising emotion is a positive emotion characterized by a focus on the strengths and virtues of others. It is a key component of the broaden-and-build theory of positive emotions.

Discussion
 The results of this study support the broaden-and-build theory of positive emotions. We found that positive emotions broaden one's momentary thought-action repertoires, which in turn leads to increased cognitive broadening (i.e., the other-praising emotion).

Small States, High Impact: How Variability Affects Low-Correlation

Introduction
 This study examines the relationship between state size and the impact of variability on low-correlation outcomes.

Method
 Data was collected from various states and analyzed using statistical models to determine the impact of variability.

Results
 The analysis shows that smaller states experience a higher impact from variability compared to larger states.

Conclusion
 The findings suggest that smaller states are more vulnerable to the effects of variability, which has implications for policy and resource allocation.



Effects of Primed Self-Perceptions on Environmental
Julia Liao
Colorado College, Colorado Springs, CO

Colorado College

Introduction
The Department of Environmental Sustainability
Being positive in one's message is an environmental benefit. However, one can be negative in one's self-perception. This poster examines how self-perceptions affect one's environmental behavior. The poster compares the effects of self-perceptions on environmental behavior, as well as the effects of self-perceptions on environmental behavior.

The Behavior as Identity or Behavior as Motivation
Self-perceptions of one's identity as an environmentalist can affect one's behavior. However, self-perceptions of one's motivation to be an environmentalist can also affect one's behavior. This poster examines the effects of self-perceptions on environmental behavior, as well as the effects of self-perceptions on environmental behavior.

What About a Pro-World Self-Identity?
Self-perceptions of one's identity as a pro-world environmentalist can affect one's behavior. However, self-perceptions of one's motivation to be a pro-world environmentalist can also affect one's behavior. This poster examines the effects of self-perceptions on environmental behavior, as well as the effects of self-perceptions on environmental behavior.

What About Economic Aspects?
Self-perceptions of one's economic status can affect one's behavior. However, self-perceptions of one's motivation to be an environmentalist can also affect one's behavior. This poster examines the effects of self-perceptions on environmental behavior, as well as the effects of self-perceptions on environmental behavior.

Implications
This poster has several implications. First, it suggests that self-perceptions of one's identity as an environmentalist can affect one's behavior. Second, it suggests that self-perceptions of one's motivation to be an environmentalist can also affect one's behavior. Third, it suggests that self-perceptions of one's economic status can affect one's behavior. Fourth, it suggests that self-perceptions of one's motivation to be a pro-world environmentalist can also affect one's behavior.

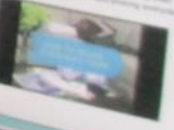

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Method
The research was a survey of undergraduate students from Colorado College participating in the study. The study was designed to test the following hypotheses:
H1: Self-perceptions of one's identity as an environmentalist will be positively related to environmental behavior.
H2: Self-perceptions of one's motivation to be an environmentalist will be positively related to environmental behavior.
H3: Self-perceptions of one's economic status will be positively related to environmental behavior.
H4: Self-perceptions of one's motivation to be a pro-world environmentalist will be positively related to environmental behavior.
The data were analyzed using a path analysis. The results are reported in the following sections.

Discussion
The results of this study suggest that self-perceptions of one's identity as an environmentalist, self-perceptions of one's motivation to be an environmentalist, self-perceptions of one's economic status, and self-perceptions of one's motivation to be a pro-world environmentalist all have a positive effect on environmental behavior. These findings have several implications for future research and practice.

Future Research
Future research should explore the effects of self-perceptions on environmental behavior in different contexts and for different populations. Additionally, future research should explore the effects of self-perceptions on environmental behavior in different cultures and countries.

Conclusion
This study provides evidence that self-perceptions of one's identity as an environmentalist, self-perceptions of one's motivation to be an environmentalist, self-perceptions of one's economic status, and self-perceptions of one's motivation to be a pro-world environmentalist all have a positive effect on environmental behavior. These findings have several implications for future research and practice.





EXIT

COLORADO STATE UNIVERSITY

Development and the Acquisition of Regulation Mechanisms: Disruptions and Externalizing Behaviors
Sydney Minchin
Colorado State University, Colorado Springs, CO



Field Placement at Pikes Peak Elementary Early Head Start Classroom

CPCD

Field Placement Discussion

Field placement is a critical component of graduate education, providing students with hands-on experience in a professional setting. This placement was conducted at the Pikes Peak Elementary Early Head Start Classroom, where the student observed and participated in various activities related to early childhood education. The placement focused on understanding the role of the teacher in a classroom setting, including lesson planning, classroom management, and assessment. The student also observed the interactions between teachers and young children, and the importance of creating a supportive and engaging learning environment. This experience provided valuable insights into the challenges and rewards of working in a classroom, and the importance of ongoing professional development and collaboration with colleagues.

of the Ter Y-P Triad from *Acinetobacter baumannii* ADP1

Abstract: The Ter Y-P Triad is a regulatory network that controls the expression of genes involved in the pathogenesis of *Acinetobacter baumannii*. This study investigated the role of the Ter Y-P Triad in the regulation of the ADP1 virulence factors. We found that the Ter Y-P Triad is essential for the expression of the ADP1 virulence factors, and that the Ter Y-P Triad is involved in the regulation of the ADP1 virulence factors. Our results suggest that the Ter Y-P Triad is a key regulatory network in the pathogenesis of *Acinetobacter baumannii*.

Introduction

The Ter Y-P Triad is a regulatory network that controls the expression of genes involved in the pathogenesis of *Acinetobacter baumannii*. This study investigated the role of the Ter Y-P Triad in the regulation of the ADP1 virulence factors. We found that the Ter Y-P Triad is essential for the expression of the ADP1 virulence factors, and that the Ter Y-P Triad is involved in the regulation of the ADP1 virulence factors. Our results suggest that the Ter Y-P Triad is a key regulatory network in the pathogenesis of *Acinetobacter baumannii*.

Methods

Genetic constructs were generated to study the role of the Ter Y-P Triad in the regulation of the ADP1 virulence factors. The constructs were transformed into *Acinetobacter baumannii* and the resulting strains were analyzed for virulence factor expression. The results of the experiments are presented in the following sections.

Results

The results of the experiments show that the Ter Y-P Triad is essential for the expression of the ADP1 virulence factors. We found that the Ter Y-P Triad is involved in the regulation of the ADP1 virulence factors, and that the Ter Y-P Triad is a key regulatory network in the pathogenesis of *Acinetobacter baumannii*.

Conclusion

Our results suggest that the Ter Y-P Triad is a key regulatory network in the pathogenesis of *Acinetobacter baumannii*. This study provides valuable insights into the role of the Ter Y-P Triad in the regulation of the ADP1 virulence factors, and highlights the importance of the Ter Y-P Triad in the pathogenesis of *Acinetobacter baumannii*.

Small Stakes, High Impact: How Varying Levels of Uncertainty in Low Consequence Games Influences Affect


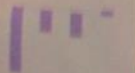
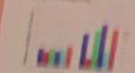
Samuel Zarky and John Horner
Colorado College, Colorado Springs, CO

Abstract
The present study examined how varying levels of uncertainty in low consequence games influence affect. Participants played a series of games with varying levels of uncertainty and reported their affect. Results showed that higher levels of uncertainty led to more positive affect. This suggests that uncertainty may be a key factor in determining affect in low consequence games.

Methods
Participants (N = 100) played a series of games with varying levels of uncertainty. They reported their affect after each game. The games were designed to be low consequence, meaning that the stakes were low and the consequences were minimal.

Results
The results showed that participants reported more positive affect when playing games with higher levels of uncertainty. This effect was significant and remained after controlling for other factors. The results suggest that uncertainty is a key factor in determining affect in low consequence games.

Discussion
The present study provides evidence that uncertainty is a key factor in determining affect in low consequence games. This has implications for understanding affect in a variety of contexts, including decision-making and social interactions. Future research should explore the underlying mechanisms of this effect.



Cognitive Broadening and the Other-Praising Effect

Jake Sullivan and Tomi-Ann Roberts
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Abstract
The present study examined the relationship between cognitive broadening and the other-praising effect. Participants played a series of games and reported their affect. Results showed that cognitive broadening led to more positive affect. This suggests that cognitive broadening may be a key factor in determining affect in low consequence games.

Hypotheses
Hypothesis 1: Cognitive broadening will lead to more positive affect. Hypothesis 2: The other-praising effect will be mediated by cognitive broadening.

Method
Participants (N = 100) played a series of games with varying levels of uncertainty. They reported their affect after each game. The games were designed to be low consequence, meaning that the stakes were low and the consequences were minimal.

PP: Emotion Induction Group
Participants were assigned to one of two groups: "Emotion Induction" and "Control". The Emotion Induction group was exposed to a series of images and videos designed to induce positive emotions. The Control group was exposed to neutral images and videos.

Measures of Cognitive Broadening
Cognitive broadening was measured using a series of questions. These questions asked participants to report on their ability to think about a wide range of topics and to think about topics that are not immediately related to the current situation.



Small Stakes, High Impact: How Varying Levels of Uncertainty in Low Consequence Games Influences Affect

Samuel Zarky and John Horner
Colorado College, Colorado Springs, CO

Introduction

Participants were presented with a choice between two options: a guaranteed reward or a gamble. The gamble involved a die roll where a 1 resulted in a loss and 2-6 resulted in a win. The reward was either a Hershey's Kiss or a Lindor Truffle. The gamble was either a 1/6 chance of winning the preferred chocolate or a 5/6 chance of losing it.

Methods

Participants

- 211 students
- Primarily Colorado College students
- Recruited through convenience sampling

Mixed Design - Independent Variables

- Game Type: each subject played three games
 - 1 to get the preferred chocolate
 - High probability (HP) roll a 1, 2, or 3 to get the preferred chocolate
 - Low probability (LP) roll a 1 to get the preferred chocolate
 - Control: receive the preferred chocolate

A dice pepper was used to roll the die.

Game Outcomes - participants were then assigned by the outcomes of their chance games: lost both, won both, lost HP and LP, and lost HP then LP.

Dependent Variables

- Subjective affect response for each game type
- Change in affect was measured using a modified Michigan Affective Scale

Procedure

- Before the experiment, participants indicated which chocolate they preferred: Hershey's Kiss or Lindor Truffle.
- After the experiment, participants were asked to rate their affect before and after each game.
- The order of play was different for each participant to counterbalance the results (every 6th participant got the same order of games).

Results

Free Chocolate Causes Happiness

- Participants were significantly happier at the end of the experiment than in the beginning.

Condition	Mean Affect Score
Lost Affect	~1.5
Final Affect	~2.5

Uncertainty and Affect

- There was a large difference between the affect scores of the choice condition, the HP game, and the LP game.
- The choice condition had the highest affect scores.
- Losses in the HP game caused a larger change in affect than losses in the LP game.
- Winning both games led to a significant increase in affect when compared to winning just the HP game.
- But not when compared to winning just the LP game.

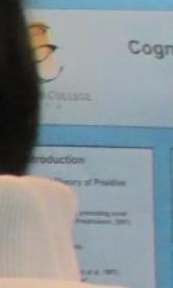
Condition	Change in Affect
Lost Both	~1.5
Lost HP then LP	~1.5
Won Both	~2.5

Change in Affect

- Winning the LP game increased affect more than winning the HP game.
- Losing the HP game reduced affect more than losing the LP game.

Condition	Change in Affect
Lost HP	~1.5
Lost LP	~1.0
Won LP	~2.0

Affect varied irregularly with the level of uncertainty.



Cognitive Broadening and the Other-Praising Emotions

Jake Sullivan and Tori-Ann Roberts
Colorado College, Colorado Springs, CO

Introduction

...and-Build Theory of Positive Emotions

Hypotheses

- Hypothesis 1: ...
- Hypothesis 2: ...

Method

Participants were 177 people in six US...

IV: Emotion Induction Group

Random assignment to one of four emotion induction...

- Control condition
- ... (not feeling)

Example: "I was so proud when I saw my friend...

... (not feeling)

... (not feeling)

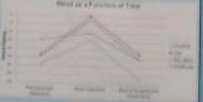
... (not feeling)

... (not feeling)

DFA Continued

- ... (not feeling)
- ... (not feeling)

Results



Manipulation Checks

- Participants highly recalled experiencing the intended emotion...

Hypothesis 1: Supported Indirectly

... (not feeling)

Hypothesis 2: Not Supported

... (not feeling)

Discussion

No Difference in Broadening

What Differs Between Positive Emotions

Form of Attention

... (not feeling)

... (not feeling)

... (not feeling)

... (not feeling)

... (not feeling)

... (not feeling)

...ing Levels of Uncertainty in ... Influences Affect

... (not feeling)

... (not feeling)

... (not feeling)

... (not feeling)

... (not feeling)

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COLORADO COLLEGE An Exp...

... (not feeling)

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