In House

Department of Psychology
Brooklyn College of CUNY

MAY 21
2013

2013 Annual Department of Psychology In-House Conference

Welcome to the conference!

The in-house conference presents an excellent cross-section of current research conducted at the Department of Psychology. There are 3 talk sessions, 1 poster session, and breakfast, lunch and dinner!

Each talk will last 12 minutes with 3 minutes for questions.

We look forward to hearing about the exciting work that is going on in the department. We hope that you find time to take in as many talks and posters as you can. And, we hope that you stay around after the final talk for food and drinks.

Brooklyn College
The City University of New York

Schedule of Events

Coffee/Bagels	9:30am
Session 1	10:00 - 11:00am
Lunch/Posters	11:00 - 1:00pm
Session 2	1:00 - 2:00pm
Break	
Session 3	2:30 - 3:30pm
PIZZA	4:00pm

Session 1

10AM
11AM

10:00	Kozbelt, Ward, Snodgrass, Ostrofsky
10:15	Meredith & Kozbelt
10:30	Zhang, Gao, & Vuolo
10:45	Pappas, Hardin, Chua

11AM
1 PM

Lunch & Posters

Session 2

1PM
2PM

1:00	Abramov, Chavarga, & Gordon
1:15	Grasso
1:30	El-Haddad, Hadjisolomou & Kacinik
1:45	Mitchell & Crump

Session 3

2:30
3:30

2:30	Delamater & Derman
2:45	Seidel & Prinz
3:00	Chua & Bliss-Moreau
3:15	Crump

Session 1

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1. 10:00 - 10:15

An objective comparison of artists and non-artists' sensitivity to visual selection in a 'pixel' drawing task

Aaron Kozbelt, Edward Ward, Emma Snodgrass, Justin Ostrofsky

Research on artists' advantages in representational drawing rests largely on an empirical foundation of subjective ratings of the global accuracy of drawings. Here we compared the drawing performance of artists and non-artists on a novel 'pixel' drawing task that permits an objective measure of accuracy taken from signal detection theory. Nine artists and 27 non-artists completed a drawing task in which they placed 225 small squares of black tape within cells of a 28 x 32 grid superimposed on a photograph of a woman's face, with the goal of rendering the face as accurately as possible. Reponses were compared to an isomorphic pixelated image derived from an algorithm in Adobe Photoshop to yield hit and false alarm rates. Artists strongly outperformed non-artists, M(SD) d primes = 1.59 (0.52) and 0.96 (0.30) for artists and non-artists respectively, a highly reliable difference, $t(34) = 4.52$, $p < .001$, eta-squared = .38. Implications and future directions, pertaining to understanding top-down versus bottom-up accounts of drawing skill, will be discussed.

2. 10:15 - 10:30

Ascending/descending melodic interval asymmetry in Arnold Schoenberg's vocal music: Implications for trans-historical creativity

Daniel Meredith and Aaron Kozbelt

How can quantitative measures of musical patterns inform psychological questions of creativity and aesthetics? Large-scale archival studies of tonal music (e.g., Vos & Troost, 1989) have revealed an asymmetry whereby ascending intervals tend to be larger and descending intervals tend to be smaller. The cross-cultural pervasiveness of this asymmetry suggests a biological basis, which may operate as an implicit constraint on composers, even those wishing to rebel against tradition. In this study we coded more than 10,000 ascending and descending melodic intervals in 97 pieces of vocal music by modernist composer Arnold Schoenberg (1874-1951), whose works depart strongly from traditional Western tonality. Preliminary results suggest that, despite its many innovations, Schoenberg's vocal music preserves the usual asymmetrical pattern of ascending leaps and descending steps. These results are discussed in the context of psychological theories of trans-historical change in the arts.

Session 1

3. 10:30 - 10:45

Do Basal and Regulation Respiratory Sinus Arrhythmia (RSA) Predict Emotion Dysregulation of Psychopathic Personality Traits?

Wei Zhang, Yu Gao, Victoria Vuolo (SUNY college at Old Westbury)

Psychopathic personality traits include emotion deficits and antisocial behavior. Previous literature suggests psychopathy is associated with lower resting heart rate (HR) and HR reactivity which are influenced by both parasympathetic and sympathetic branches of the autonomic nervous system (ANS). This study examined the effect of the parasympathetic branch of ANS (as indicated by RSA) and its association with emotion dysregulation of psychopathic personality. Approximately 100 college students from Brooklyn College participated in the study. Electrocardiogram (ECG) and respiration rate were recorded and RSA basal activity and reactivity during a moderately stressful task were derived. Psychopathic traits were assessed using the Psychopathic Personality Inventory-Short Form (PPI-SF) and Levenson Self-Report Psychopathy Scale (LSRP). Preliminary findings from this study will be presented.

4. 10:45 - 11:00

Investigating the role of the self in social interaction

Carrie Pappas, Curtis Hardin, & Elizabeth Chua

In our research, we used looking at the self as an index of self-directed thinking to investigate self-focus during social interaction. To validate our measure, we demonstrated the self-reference effect in memory can occur with self-looking and showed improved memory performance for words paired with a picture of self compared to a picture of an other. To investigate self-focus in a conversation, we used eye tracking during online video chats in which participants could see both the self and an other on the screen. We measured time spent looking at the self to index self-focused attention, and assessed self-esteem. In Exp. 1, participants talked about a time when they felt proud of themselves and a time when they felt embarrassed. People with higher self-esteem (HSEs) looked at the self more when they were bolstered; people with lower self-esteem (LSEs) looked at the self more when they were threatened. Thus, results showed more self-looking in conditions that were consistent with self-image according to self-esteem. In Exp. 2, participants talked about a time when someone else was proud of them and a time when someone else was disappointed in them. HSEs looked at the self more during disappointment stories (admitting wrong); LSEs looked at the self more during proud stories (considered boasting). Thus, when social threat was emphasized, there was more self-looking in conditions that were inconsistent with self-image according to self-esteem. Taken together, we demonstrated the self is activated to maintain a consistent self-image during personal emotional expressions (Exp. 1) and to protect against social threat during expressions involving the consideration of an other (Exp. 2) and that self-esteem plays a significant role in the types

Session 2

1PM
2PM

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5. 1:00 - 1:15

Sex and Vision: Appearance of Monochromatic Lights

Israel Abramov, Alla Chavarga (Brooklyn College), James Gordon (Hunter College)

The hue sensations evoked by the different wavelengths of the visible light spectrum are not the same for males and females. Participant inclusion criteria: normal color vision, stereopsis, and spatio-temporal contrast sensitivity; ages from 16-61 years. Hue sensations were obtained by our standard magnitude estimation procedure. Data were obtained from two different optical systems; based on our previous work, the two data sets were combined; in the combined data set there were 69 females and 36 males. Results: There were relatively small, but clear and significant, differences between males and females in the hue sensations elicited by almost the entire spectrum. Generally, males required a slightly longer wavelength to experience the same hue as did females. The spectral loci of the unique hues (R, Y, B) were not correlated with color matches that depend only on the L- and M-cones, for which humans are polymorphic. Wavelength-discrimination functions derived from the scaling data show that males have a broader range of poorer discrimination in the middle of the spectrum. Conclusion: the color spaces of each sex are rotated slightly with respect to each other; also, one of them (males) is more constricted for hues evoked by the middle of the spectrum.

6. 1:15 - 1:30

Continuous nest maintenance, sociability & an invasive parrot in Brooklyn

Frank Grasso

Monk parakeets (Myiopsitta monachus) are an extremely gregarious species of parrot that have successfully invaded North America and Europe. They build large, free-standing, multi-chambered stick nests that are maintained year-round by social units larger than mated pairs. Behavioral studies in their native Argentina suggest they are cooperative breeders. Behavioral studies there also show year-round nest maintenance in urban and rural areas. While they are prolific in Florida and Spain, their success in Northern cities like Chicago and Brooklyn suggest urban micro-niches facilitate their ability to colonize these colder climates. Behavioral observations of their nest construction, usage and maintenance made on over 120 nests in Brooklyn over the last 11 years demonstrate that large social units (observed max=22) contribute to single chamber construction and larger groups contribute to single, multi-chamber nests (observed max=43). I suggest that the ability of monk parakeets to colonize northern urban settings results in part from their cooperative year-round nest construction behavior that makes the nest an important information-sharing center.

Session 2

7. 1:30 - 1:45

When adult dyslexics perform better: Evidence from comprehension and vocabulary tasks

Rita W. El-Haddad, Stavros P. Hadjisolomou, and Natalie A. Kacinik

We predicted that adults with dyslexia would perform worse than controls on spelling, phonological awareness, and various reading tasks. Similar performance to controls was expected on tasks that do not involve the activation of phonological representations. We recruited 17 adults with dyslexia and 23 controls from New York City public and private colleges and from online forums. Both groups consisted of bilinguals/multilinguals and native English speakers. Socioeconomic status varied, but all participants completed at least some higher education beyond high school. Participants were individually tested on spelling, phonological awareness and reading tasks in one 2-3 hour session. In line with previous research, the dyslexia group performed worse than controls in single-word reading, spelling, nonword reading, and Spoonerisms. Adults with dyslexia also performed similarly to controls on semantic fluency and a non-verbal task as these tasks do not explicitly activate phonological representations. The dyslexia group unexpectedly exhibited similar performance to the controls on Woodcock Johnson (WJ) Reading Fluency, a silent-reading and comprehension task, and WJ Reading Vocabulary. Even more surprising, the dyslexia group performed better than controls on WJ Passage Comprehension, and WAIS Vocabulary. These results of comparable or better performance on comprehension and vocabulary tasks could be explained by the higher socioeconomic status and increased education of the dyslexia group. Furthermore, adults with dyslexia may have acquired compensatory strategies over time through accommodations. Despite this compensation in comprehension and vocabulary tasks, adults with dyslexia still struggle with single-word reading and spelling and show a gap in achievement compared to controls.

8. 1:45 - 2:00

A Closer Look at the Impoverished Mind: Resource Scarcity in a Family Feud Game

Kevonte Mitchell and Matthew Crump

An emerging area of research in Judgment and Decision-Making has focused on what is increasingly being considered a special population—the impoverished. This population appears to maintain unique strategies for economic problem solving, raising the question of whether observed differences are under the influence of stable internal factors like personality traits, or transient external factors like situation. One theory claims that it is the situation of poverty, or resource scarcity, that causes individuals to focus more on short-term solutions to problems to the detriment of the long-term consequences of those solutions. Here, we discuss a series of studies that aim to test this claim, each using a modified version of the Family Feud game where subjects are either given an abundance (rich) or scarceness (poor) of resources. Within the game, subjects were allowed to borrow from their pool of resources, but at a steep cost of a 100 percent penalty per unit; making borrowing a sub-optimal long-term strategy in most cases. General findings are reliably replicated and support the theory, with poor subjects outperforming rich subjects on a measure of short-term focus, and exhibiting a lack of long-term focus by borrowing more. However, closer examination of the effects and methodology uncovers further caveats to initial interpretations of the results.

Session 3

2:30
3:30

2:30	Delamater & Derman
2:45	Seidel & Prinz
3:00	Chua & Bliss-Moreau
3:15	Crump

9. 2:30 - 2:45

Extinction of Pavlovian Stimulus-Outcome Associations

Andy Delamater and Rebecca Derman

Prior Pavlovian conditioning research has revealed that once learning has been established, an "extinction" procedure does not eliminate the underlying memory trace of that learning. We have previously investigated the immunity of a specific form of learning in rats to the effects of extinction, namely, learning to associate a predictive cue with the specific sensory components of food reward. However, in more recent experiments in my lab we have noted that extinction can reduce control by these specific associations in some circumstances. If, for example, the extinction procedure is administered following a brief amount of training then control by these reward-specific associations can be reduced and sometimes eliminated. We are now in the process of more thoroughly examining this finding by systematically varying the amount of training given prior to extinction, by examining the durability of the extinction effect over time, and we plan to explore the potential role of the prefrontal cortex in mediating this extinction effect. Some preliminary findings will be reported that illustrate the robustness of the basic extinction effect we have obtained.

10. 2:45 - 3:00

Sound morality: Irritating and icky noises amplify judgments in divergent moral domains

Angelika Seidel and Jesse Prinz

Theoretical models and correlational research suggest that anger and disgust play different roles in moral judgment. Anger is theorized to underlie reactions to crimes against persons, such as battery and unfairness, and disgust is theorized to underlie reactions to crimes against nature, such as sexual transgressions and cannibalism. To date, however, it has not been shown that induction of these two emotions has divergent effects. In this experiment we show divergent effects of anger and disgust. We use sounds to elicit anger and disgust, and participants are then asked to consider moral vignettes. As compared to disgust and control condition, anger increases severity of judgments about crimes against persons, and disgust increases severity of judgments about crimes against nature, but not conversely.

Session 3

11. 3:00 - 3:15

Detecting Internal States: Interoceptive accuracy correlates with metamemory accuracy

Elizabeth F. Chua and Eliza Bliss-Moreau

We have the ability to monitor and sense our bodily states (i.e., interoception) and our cognitive states (e.g., metamemory awareness), but little is known about whether these abilities represent a unified process or separate but related capacities. The goal of Study 1 was to provide an initial test of the hypothesis that there are shared mechanisms for interoceptive and metamemory monitoring. Participants completed a heartbeat detection task in which they had to count their number of heartbeats in a given interval without touching their heart or feeling their pulse. Interoceptive accuracy was calculated by comparing the reported number of beats to the number of beats recorded by a pulse transducer. Participants also completed a face-name associative recognition memory task in which they gave retrospective confidence ratings. Metamemory accuracy was calculated by examining confidence-accuracy calibration. Individuals with better interoceptive accuracy also showed better metamemory calibration ($p<0.05$). In Study 2, we repeated the procedure and added time estimation and dot estimation tasks to test whether individuals were better at detecting external states as well. Multiple linear regression was used on preliminary data to develop a model for predicting confidence-accuracy calibration based on interoceptive sensitivity, time estimation, dot estimation, and memory accuracy. The model approached significance ($p<0.10$), with interoceptive sensitivity being the only significant predictor ($p<0.05$). This raises the possibility that there may be a general mechanism for monitoring internal states, likely relying on the insula.

12. 3:15 - 3:30

Stimulus-driven control of explicitly induced attention filtering demands

Matthew Crump

Demonstrations of item/context-specific proportion congruent (PC) effects suggest that early stimulus processing can rapidly control attention filtering (see Bugg & Crump, 2012). Yet, PC manipulations are typically confounded with item-frequency, and PC effects may be driven by a learning process sensitive to item-frequencies. The present work examines whether explicitly induced attention filtering demands can transition from strategic to stimulus-driven control without manipulating PC or biasing item-frequencies. Several web-based flanker studies were conducted via Amazon Mechanical Turk. Each involved a 50/50 PC design. Attention filtering demands were induced by a 1-back memory task following each trial prompting recall of the last target or flanking letter. Blocking recall demands produced list-wide PC-like effects with larger flanker effects for flanker than target recall conditions. Mixing recall demands and associating them with particular stimulus-cues (location, color, letters, font) produced item/context-specific PC-like effects, and show novel unambiguous evidence for stimulus-driven control of attention filtering.

Posters 11AM -1PM

1. The effects of attention allocation on perceptual grouping

Sibel Akyuz and Daniel D. Kurylo

Using artificial, experimental stimuli, previous research indicated that perceptual organization does not occur without attention. In order to examine these effects in a complex, dynamic scene, we measured grouping performance in a dual performance task. Specifically, perceptual grouping by alignment (the principle of Good Continuation) was measured when it was performed either alone or at the same time as a visual tracking task. We also investigated whether dual-task effects interacted with level of task difficulty. We hypothesized that grouping ability will decline with reduced attention resources, and that this effect should be amplified with increased task difficulty. Participants viewed 30 sec video clips in which a beach ball was passed among a group of actors, each of whom wore a colored line at different elevations. In separate conditions, subjects indicated (1) errors in the sequence of ball passing, (2) alignment of the lines, or (3) both tasks at the same time (dual task). Mean reaction time to identifying aligned elements was 1.6 seconds. This value didn't notably change in the dual-task condition, nor did it notably change across levels of difficulty. These results indicate that under natural viewing conditions, with complex dynamic stimuli, attention resources are adequate to recognize regularities in the scene.

2. Relationship of Cognitive Strategy Use in Older Adults to Prospective Memory Performance

Avner Aronov, Laura Rabin, Joshua Fogel, Susan Chi, & Sarah Kann

Older adults typically demonstrate better performance on prospective memory (i.e., memory for future intentions) tasks carried out in naturalistic settings, which resemble real-life situations, because they compensate by using memory strategies. Additionally, research suggests that older adults are more inclined to employ external rather than internal memory strategies such as writing notes or lists to compensate for prospective memory difficulties. By using external strategies, which require lower levels of cognitive effort, older adults experiencing memory decline may succeed in performing memory tasks. Unfortunately, research has not investigated older adults' utilization of various types of memory strategies during performance of standardized tasks. The current study investigates the impact of memory strategy use on performance of a prospective memory test that features both time- and event-based tasks measured over short- and long-term retention intervals. We also examine usage rates of external versus internal strategies. In a sample of 165 community-dwelling older adults (aged 70 and above) with varying degrees of cognitive complaints and impairment, we found no use or minimal use for internal strategy use on a standardized task of prospective memory. Moreover, multivariate linear regression analysis showed that increasing number of external strategies was significantly associated with greater prospective memory performance ($p < .05$). Findings are discussed in relation to how external memory strategy use can potentially be enhanced or trained to improve everyday memory ability among older adults.

3. The effect of perceptual organization on recognition and categorization of complex scenes

Beliz Hazan, Daniel D. Kurylo, Naomi Bowens, Zeynel Baran

For complex stimuli found in natural scenes, categorization is based upon organizing and identifying unified forms. Whereas much of the previous research on complex scene categorization has examined the role of global processing, less is known about processing at the level of constituent features. To investigate this issue, analysis was made of the contribution of constituent features on the ability to categorize complex images. Consistent with hierarchical models of complex scene perception, it is hypothesized that these fundamental components of form perception play a significant role in categorizing natural scenes. Participants viewed images of natural and man-made scenes that were systematically degraded by an occluding mask. Reduced stimulus integrity, which is produced by the occluding mask, is derived by a stimulus mask (random array of solid white circles) superimposed on the image. Each image varied along 26 levels of occlusion, presented in a series from the most occlusion to the least. For each image, the level of degradation was progressively reduced until observers were able to accurately categorize images, thereby establishing an index of perceptual ability. Comparisons were then made across separate conditions, in which color, grayscale, low pass spatial frequency (LPSF), high pass spatial frequency (HPSF), contour information is selectively extracted from images. In color, grayscale, LPSF and HPSF conditions, 79%, 67%, 35%,52%, 54% occluded scene could be recognized, respectively. These results show that the specific stimulus features of color, low and high spatial frequency components, and surface texture, contribute to perceptually grouping local components of complex, natural scenes.

4. On the Relative Salience of Temporal and Visual Cues in Pavlovian Simple and Conditional Discriminations

Rifka Derman and Andrew Delamater

In one experiment, rats trained in a simple discrimination task learned at comparable rates when they were trained with temporal or visual discriminative cues. In this task, 2-min periods in which a visual stimulus was turned on alternated with 2-min periods in which it was off. In Group Visual, food pellets were delivered randomly in time within only one of these periods. In Group Temporal, food pellets were delivered only at the same specific time point in both of these periods. On nonreinforced probe trials rats in both Groups equally learned to respond more when reward was expected than when it wasn't. In another experiment, rats were trained in a similar situation, but with different rewards (pellets, sucrose) being signaled by different 10-s auditory stimuli within these visual or temporal contexts. Whether or not the auditory stimulus was rewarded, was conditional upon visual cues, in Group Visual, or temporal cues, in Group Temporal. In this task, only Group Visual rats successfully learned the discrimination. These data argue against the centrality of time as a fundamental determinant of learning, and suggest, instead, that rats will be more likely to structure their learning around "events" rather than "time."

Posters 11AM -1PM

5. Is Electrodermal Conditioning Associated with Moral Decision Making?

Rebecca Dienstag, Yu Gao, and Sarah Riccio

Electrodermal fear conditioning is a form of associative learning. When a neutral stimulus is paired multiple times with a negative stimulus, the neutral stimulus elicits the same somatic fear response. Following the Somatic Marker Hypothesis that states that conditioned emotional responses assist the decision-making process, reduced electrodermal fear conditioning is hypothesized to be linked to reduced electrodermal responses during contemplation of moral dilemmas, which leads to more utilitarian responses in moral dilemma tasks. One hundred and one Brooklyn College students were recruited to participate in this study. All of the participants underwent two tasks. In the conditioning task, they were presented with two different tones. One tone was followed by an aversive stimulus that included an image of a pit bulldog and a loud noise while the other tone was not. Participants also were presented with fifteen dilemmas and asked if they would endorse the action. Electrodermal activity was recorded during the two tasks. Students showed stronger somatic responses to aversive stimuli than to neutral tones. Inconsistent with our hypotheses, no significant relationship between electrodermal conditioning and electrodermal responses during moral dilemmas or between conditionability and utilitarian responses were found. This is the first study attempting to demonstrate that basic classical conditionability may partially contribute to producing utilitarian responses. Results suggest that the unconscious somatic responses may only play a partial role at most in the process of moral decision making.

6. Effects of Instrumental Training Context on Pavlovian-to-instrumental Transfer (PIT)

Ebony Holland & Andrew R. Delamater

Sixteen naïve Long Evans rats learned to make two spatially distinct instrumental lever press responses (left/right) for different reinforcing outcomes (e.g., Left-Pellet, Right-Sucrose). For eight animals this training took place in two dissimilar contexts (Group Differential). A second group of eight animals learned both response-outcome (R-O) relations in both contexts (Group Non-Differential). In a second phase rats were given Pavlovian training in a third context. In these sessions, neither lever was available, but the rats received pairings of one conditioned stimulus (CS) with one of the outcomes used previously and a second CS with the other outcome (e.g., Light-Pellet, Tone-Sucrose). During testing, the impact of the Pavlovian stimuli on instrumental lever pressing was assessed with both levers available and these tests occurred in either the Pavlovian or the instrumental training contexts. The two CSs significantly increased the response associated with the same specific outcome as that signaled by the stimulus (e.g., Light only increased Left lever responses and Tone only increased Right lever responses), but this effect was only seen in Group NonDifferential. In addition, this effect was not dependent upon the context in which animals were tested (i.e., the Pavlovian or instrumental training contexts), suggesting that the performance problem in Group Differential was not related to a retrieval deficit. These data suggest that rats given instrumental training in different contexts fail to learn specific instrumental R-O associations, probably because different context-outcome associations overshadow that learning. Overall, these data identify boundary conditions whereby learned cues can influence behavior.

7. Recognition of natural scenes and processing types

Pamela Husbands and Daniel D Kurylo

Human vision is a dynamic and active process, and oft times one single glance is enough to make sense of a natural scene. Previous research has determined that processing time to make sense of a scene varies minimally. However, studies have indicated that a very short duration of image exposure afforded humans the ability to decidedly detect a natural scene category. Studies also indicate that human observers display sensitivity to information about global properties during a short duration of exposures to natural scenes. Three goals were addressed in this study: (1) processing time for natural scene recognition; (2) to determine how much information can be gathered with brief exposure to a natural scene; (3) processing time for recognizing global properties vs local features. Three categories of natural scenes were used. Participants viewed images of natural scenes displayed on a computer monitor, and identified scene categories. In one condition, scene categories were identified (global properties); in a separate condition, specific items in the scene were identified (local features). Evaluation of results from this study indicate that for complex natural scene processing local features contribute to global perception, although processing of local features require significant processing time which is likely related to other cognitive processes such as visual search and visual short term memory.

8. Biasing Memory: The effect of gender stereotypes on associative memory for emotional content

Rachel Weintraub and Elizabeth F. Chua

There is a stereotype that women are more emotional than men. The aim of the present study was to determine the impact of negative gender stereotypes on memory. Memory is a good task to use because memory for emotional events is different from non-emotional events. Participants (n=34) were randomly selected into one of two conditions: some participants were exposed to the negative gender stereotype while others were not. All participants were tested using an associative memory paradigm using both emotional and neutral stimuli. Preliminary results of a 2 (condition: stereotype vs. no stereotype) x 2 (stimuli: emotional vs. neutral) x 2 (gender: male vs. female) mixed model ANOVA revealed an overall main effect for condition, such that that people exposed to the stereotype statements performed more poorly on associative memory tasks [$F(1, 30) = 5.55$, $p<.05$], but no other main effects or interactions. Based on our hypotheses, we tested for differences by gender for types of stimuli. We found a significant difference, such women (n=23) exposed to the stereotype performed more poorly with emotional stimuli [$t(21)= -1.86$, $p<.05$], but there was no significant difference for neutral stimuli [$t(21)= 1.25$, $p>.05$). Interestingly, men (n=11) showed a similar trend. Those exposed to the negative gender stereotype performed more poorly with emotional stimuli [$t(9) = -1.83$ $p<.06$)], but not with neutral stimuli [$t(9)= 1.11$, $p>.05$). These preliminary findings suggest that stereotype threat might affect associative memory with emotional content, and raises the possibility that the negativity of the stereotype may generalize beyond the target of the stereotype.

9. The effect of priming on contour integration training

Jay A. Jeschke, Daniel D. Kurylo

Visual contour integration training, as well as priming contour detection, have both been shown to improve the ability to recognize contours embedded in visual noise. However, the possible benefit of combining training as well as priming has not been explored. The aim of the present study was to determine if contour integration training with added priming cues would improve contour detection. Experiments were conducted in which all subjects first viewed a series of Gabor element displays with varying degrees of jitter in contour segment alignment. Subjects indicated the direction which the embedded contour was pointing. From this task baseline threshold for contour recognition was established. Subjects were then randomly assigned to training with contour priming or without contour priming, starting after baseline assessment. Training continued for two more consecutive days. After training on day three, all subjects were given the same assessment as given at baseline. Results from pre-training psychophysical measures indicate that contours are detectable up to a jitter deflection of 11°. Thus far, results validate use of the chosen stimulus parameters, as well as specifics of the psychophysical methods. Given that contour integration relies on co-activation of orientation selective cells in early visual areas, positive results would suggest that contour priming aided the cooperative effort of these cells. Another explanation is that top-down effects of shape recognition facilitate training. These results may have implications for the design of cognitive remediation programs aimed at improving basic sensory processing.

10. Small Elephants and Big Needles: Can Perceptual Information Affect Memory and Judgments about the Meaning of Words?

Natalie A. Kacinik, Rita W. El-Haddad, Samuel Salamon, Kendall J. Eskine, & Lolly Starr-Glass

There is now considerable evidence that representations of word meaning are "embodied" and grounded in our perceptual and motor experiences (Barsalou, 2008; Glenberg, 2010; Hauk et al., 2004; Zwaan et al., 2002). However, the majority of this research has relied on priming and interference procedures, or on measuring or manipulating brain activity. A better test of embodiment theories would be to examine the extent to which perceptual information may be incorporated into existing representations to potentially alter their processing, and whether those effects persist over time. The present study therefore involved manipulating the perceptual appearance of words, specifically font size, to be congruent or incongruent with an object's actual size (e.g., elephant presented in a large or small font, respectively). Participants were presented with the words in either an explicit or more implicit memory paradigm prior to engaging in a recognition memory test and property judgment task, in the same session and after a 2-week delay. We hypothesized that words presented in a font-size that was either congruent or incongruent with the item's actual size would result in correspondingly better or worse memory and property judgment performance compared to the middle "neutral" font. However, the results showed that the font size manipulation generally did not have significant effects on how participants represented and processed the words. These findings thus appear to present a challenge for embodied accounts of word meaning, but some potential explanations and issues will be discussed with respect to the type of perceptual manipulation and stimulus items employed in this study.

11. Linearity and Word Internal Structure in the Visual Processing of Italian Complex Words

Franca Ferrari-Bridgers & Natalie A. Kacinik

The representation and processing of complex poly-morphemic words has been the subject of considerable debate. Specifically, it is unclear whether such words are stored and accessed as (i) distinct morphemes (Taft et al., 1975), (ii) as whole words (Cole et al., 1989), (iii) as both morphemic and whole forms accessed in parallel (Caramazza et al., 1988, or (iv) whether morphemes are not represented discretely, but emerge from the overlap of semantic, phonological and orthographic codes (Gonnerman et al., 1999). The present lexical decision study was conducted to address this theoretical debate by manipulating the linearity (i.e., sequential order of morphemes, Hudson et al., 1995) and word internal structure of Italian prefixed and suffixed words. This was accomplished by comparing three different kinds of affixes in both prefixed and suffixed words: (1) syntactic affixes that change the grammatical class of the stem in addition to modifying it semantically (e.g., amministra[V]zione[N] 'adminstration' in[V]-grand[A]-ire [V] 'enlarge'); (2) semantic affixes that only modify the base semantically (e.g., matit[N]-ina[N] small pencil' and ri[V]-fare[V] 'redo'), and (3) "lexicalized" words with an unproductive affix/stem that has lost its semantic transparency (e.g., pallino 'bullet', rimanere 'to stay'). Structural complexity was found to affect suffixed words as expected, such that more complex words required longer processing times; whereas prefixes, due to their position at the beginning of words, seem to privilege syntactic-category information so that it is processed first (Friederici et al., 2007). The lexicalized word results further indicate that derived words are not necessarily processed faster or slower than simple words (Bertram et al., 1999), but that their processing varies according to the sequential order of morphemes and the information encoded in the affix. Strictly dichotomous claims that derived words must be stored and accessed in either decomposed or whole word forms, or via two distinct routes, are therefore inadequate. Instead, the present findings are most consistent with connectionist constraint satisfaction theories of lexical processing (Mirkovic et al., in press; Plaut & Gonnerman, 2000).

12. Executive control and mathematival problem solving: Is there a bilingual advantage?

Marta Mielicki, Yasmine Ouchikh, Farrukh Karimov, and Natalie Kacinik

It has been suggested that bilingualism has beneficial effects on cognition because bilinguals have been found to outperform monolinguals on tasks requiring the use of executive control (i.e. inhibition, task-switching, monitoring, and selective attention). Although executive functions are also important for solving mathematical problems (Cirino, Morris, & Morris, 2002 & 2007), specific underlying processes have not been identified and the effects of bilingualism on mathematical ability have not been investigated. The present study compared the performance of bilingual and monolingual young adults (18-35) on various tasks of executive control (Letter-Number Sequencing and Digit-Symbol subtests from the WAIS-III, a Stroop task, and a Plus-Minus task) and mathematical problem solving skill (Calculation and Applied Problem subtests from the Woodcock Johnson III and a new Symbol Problems measure specifically developed for this study) to determine 1) whether bilingual advantage effects previously shown by children and older adults would also be found in young adults, 2) if the potential benefits of bilingualism extend beyond typical executive control tasks to a more applied domain like mathematical problem solving, and 3) identify the specific facets of executive function important for mathematical problem solving and that bilingualism may benefit . With a couple of exceptions, the results thus far have generally failed to show significant differences between bilinguals and monolinguals in any of the executive control and mathematical problem solving tasks. This lack of significant findings may be due to our relatively small sample of monolinguals and the heterogeneity of our participants compared to previous studies.

13. Separable encoding of sensory and temporal features of expected outcomes in reaction time tasks with humans

Natasha Nadler and Andrew R. Delamater

In reaction time (RT) tasks, humans learned the relationships between distinct visual cues and their associated visual targets to which they were to respond. In one study, the cue-target interstimulus interval (ISI) was fixed during training at 800 ms. On “valid” test trials, these same pairings occurred as before, but, in addition, the specific cue-target relations were switched on “invalid” trials. Furthermore, the ISI during test was either 400, 800, or 1600 ms. Subjects responded more rapidly on valid than invalid trials, suggesting that they had learned the specific cue-target associations. However, this validity effect was observed equally at each test ISI although overall RT was fastest on trials with the training ISI. A second experiment replicated this effect when two cues predicted these targets during training with a short ISI (800 ms) and two additional cues predicted the same set of targets during training at a long ISI (1600 ms). The results from both studies support the view that specific sensory and temporal target attributes are encoded in a separable rather than an integral manner. If the latter were true, we would have expected a larger validity effect on test trials that occurred at the same ISI as was used during training. Thus, when humans learn to associate a cue with a target, they apparently learn two separate associations, one with the target’s specific sensory qualities and one with its temporal aspects.

14. 10,000 hours in 10 minutes? Memory for sequence learning

Emily Paolillo and Matthew Crump

Previous research has shown that gaining expertise in skilled motor tasks such as playing a musical instrument or typing on a keyboard takes about 10,000 hours. But what if we could produce a simple laboratory model of skill learning in 10 minutes? In this study, we tested participants' ability to type the alphabet on a newly arranged keyboard compared to their ability to type the alphabet on a regular QWERTY keyboard. We then asked them to remember where the keys were placed on each keyboard to examine the type of learning involved in this task. Our results were examined in three parts. First, we found that participants got about 2.5 times faster in typing the alphabet on the irregular keyboard over 20 trials (10 minutes of practice). Second, after analyzing accuracy in the memory task, we found that participants performed significantly better than chance in both conditions, yet only averaging about 30% to 40% correct. For incorrect responses, participants were only about one key away on average. This implies both explicit and implicit knowledge are active during this sequence learning task. Finally, we found no differences in learning curves for keys that were correctly identified in the memory test vs. those that were incorrectly identified. We conclude that early skill acquisition is driven by implicit knowledge for this skilled motor task.

15. Life satisfaction in older adults: The role of various demographic, psychosocial, and health-related variables

Tangeria R. Adamsa, Laura A. Rabina, Joshua Fogelb, & Valdiva G. Da Silvaa

Life satisfaction is an important component of overall well-being and its role in positive and aversive physical, social, and psychological outcomes is an area of active scientific inquiry. Recent research suggests that older adults are at risk for reductions in life satisfaction and that sharp declines may be stronger predictors of proximity to death than actual age. As such, it is important to identify the variables associated with both the reduction and maintenance of life satisfaction in older adulthood. We investigated various demographic, social, objective and subjective cognitive, exercise, emotional, and health variables to determine their associations with self-reported life satisfaction. Participants were 165 non-demented, community-dwelling older adults from the Bronx, NY (mean age = 81.9 (SD=5.14); mean years of education = 14.4 (SD=3.37). Almost two-thirds of participants were women and slightly more than one-third were of non-white race/ethnicity. Multivariate linear regression analysis showed that increased perceived social support and decreased depressive symptoms were significantly associated with increased life satisfaction. None of the demographic, cognitive, exercise, or health variables were significantly associated with increased life satisfaction. These findings demonstrate the importance for professionals working with elderly adults to attend to the quality and reciprocity of older adults' social networks as well as subclinical depressive symptoms. Interventions tailored to monitor and buffer against decline in these key variables may be of paramount importance for successful aging and survival in older adults.

16. Could Birthplace be a Mediator between Agreement with Age Stereotyping and Behavior?

Kadija Ny'Omi Williams and Elisabeth Brauner

We understand stereotypes to be generalized ideas about the characteristics, attributes, and behaviors of particular groups and their members. In navigating our environment we depend on stereotypes when there is lack of information or time for deeper processing. Stereotypes are constructed over time from a variety of sources, including social groups like family and friends, and the media. Because these sources are frequently traversed the stereotypes are repeatedly activated (Dixon, 2000). These ideas may not only affect how we perceive or behave toward other people, but our attitudes can affect our self-perceptions and behaviors. Our exploratory study examines the effects of attitudes toward age on behaviors such as memory performance and speed. Results suggest that the relationship between age-related attitudes and behaviors may be mediated by birthplace. Although the results were not all statistically significant, generally speaking participants who agreed with age stereotypes were slower to do the task than participants who did not agree with age stereotypes, and participants who were foreign born were slower to complete the task than participants who were US born. However, when birthplace became a factor Foreign born participants who agreed with age stereotypes and were faster to do the task than Foreign born participants who did not agree with age stereotypes, and Foreign born participants who agreed with age stereotypes were faster to do the task than US born participants who agreed with age stereotypes. These incongruent findings suggest that birthplace may mediate the relationship between age attitudes and behaviors.