



Abstracts

Undergraduate Poster Presentations

Department of Psychology

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The role of social information in event segmentation

Julia Boggia & Jelena Ristic

A wealth of studies show that faces play an important role in the interpretation of social situations. We investigated whether perception of faces and their features influence how participants parse dynamic visual information. Two groups of 15 participants viewed a 15-minute clip from a classic western and were asked to segment the clip into 'meaningful units' or 'meaningful social units'. Breakpoint analysis was used to behaviorally determine the units of perceptual segmentation. Movie minutes identified as breakpoints differed across the two groups. Critically, breakpoints identified by the group that received 'social' instructions contained the most images of close up faces. This result suggests that faces contain key information that allows us to parse and understand complex social events.

Finding Words in a Continuous Speech Stream: Evidence from 10-month-olds

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To understand speech and learn words, infants have to first parse the continuous speech stream they are exposed to. This experiment investigated the use of statistical cues and of two allophonic cues (aspiration and devoicing) by infants in the process of word segmentation. Thirteen infants ages 9,15 to 10,26 were exposed to CVCLVC stimuli (C - consonant, V - vowel, L - the sound /l/) containing different sets of cues, indicating either a branching (CV.CLVC, where the "." is a boundary between syllables) or a non-branching segmentation (CVC.LVC). Infants in the non-branching condition showed a novelty preference in a Head-Turn Preference test, while those in the branching condition showed no preference. These results indicate that infants may, indeed, use allophonic and statistical cues when segmenting words and provide a new piece to complete the puzzle that is speech segmentation.

Title: The Moderating Effect of the Cognitive Information Style on the Effectiveness of the Applied Muscle Tension Procedure

Diana Calatoru, Sarny Balegh, Blaine Ditto

The Applied Tension procedure (AT) consists of repeated contraction and relaxation of the arm and leg muscles in 5 second intervals. Although there is evidence that in some cases the AT helps to reduce blood donation-related vasovagal reactions (VRs) such as faintness, weakness and dizziness (Ditto, 2003), the moderating factors have not yet been fully identified. The present study examines the relationship between the Cognitive Information Style (CIS) - Monitoring or Blunting- and the effectiveness of the AT in reducing VRs while watching videos depicting blood draws and injections. It has been found that overall, individuals with a monitoring coping style (high monitoring score) benefited less from the AT technique. Moreover, individuals with low blunting scores but high monitoring scores had more VRs than low blunters who had low monitoring scores.

Keywords: Applied Muscle Tension, coping style, monitoring, blunting, blood donation

Academic Achievement in Relation to Alcohol Consumption and Personality Risk among Youth

Sara Colalillo; Maeve O'Leary-Barrett; Robert O. Pihl

The relationships between academic performance, alcohol consumption, and personality risk for alcohol abuse and dependence were examined in adolescents. A sample of 1246 students (mean age 13.7) was recruited from eight schools across London, England. Participants completed the Substance Use Risk Profile Scale to assess their personality risk for substance use, as well as a short questionnaire to determine their drinking behaviours. Drinking behaviours were assessed again at a 2-year follow-up. Participants' performance on national exams at ages 12, 14, and 16 were obtained. Grades for drinkers at age 14 decreased significantly from age 14 to age 16, while grades for non-drinkers remained the same. Binge drinkers experienced an even stronger drop in grades over two years. Low grades at age 12 did not predict heavier alcohol consumption at ages 14 and 16. Finally, a high-risk personality, specifically high scorers on negative thinking and anxiety sensitivity, significantly predicted lower grades at ages 14 and 16.

Effects of Religious Internalization on Goal Motivation, Goal Coherence, and Subjective Well-being

Agnes Colantuoni, Marina Milyavskaya, and Dr. Richard Koestner

This study explored the effects of religious internalization on goal motivation, goal coherence and subjective well-being. Seventy-five students who identified a religious affiliation completed an online questionnaire that assessed their goals, their motivations for pursuing each goal, the coherence they experience between their goals, and their level of subjective well-being. The participants also completed an adapted version of the Religious Internalization Scale. Introjected religious regulation was found to correlate negatively with goal motivation, goal coherence, and well-being in Christians only. No significant correlations were found for identified religious regulation. Discussion focuses on the implications of these findings for the field of the psychology of religion.

Autonomous Motivation and Subjectively Natural Effort in Goal Pursuit

Emily Foxen-Craft, Marina Milyavskaya, and Richard Koestner

Self-determination theory posits that autonomous motivation leads to goal progress, but how the arduousness of effort is overcome remains unclear. We hypothesize that effort exerted in autonomous goals is subjectively experienced as more natural, and more associated with flow (a sense of absorption in an activity), and that these subjective experiences mediate the link between motivation and goal progress. University students (n=193) set 3 semester goals and reported their goal motivation, and 4 weeks later, rated their effort experience and goal progress. Results revealed that the natural subjective experience of effort and flow both mediated between autonomous motivation and goal progress. These results point to the value of linking research on autonomy, effort, and flow.

Dorsolateral Striatum Lesions Facilitate Win-Stay Learning in the Automated Radial Maze

Eric Finkel, Elia Nahas, Norman M. White

In earlier experiments using the manual version of the radial maze win-stay, a task previously associated with stimulus-response (S-R) learning, lesions of dorsolateral striatum (DLS) and some surrounding tissue impaired task acquisition. Contrary to these findings, more recent experiments using an automated radial maze found that dorsomedial (DMS), but not DLS, lesions impaired win-stay performance. In each of the latter experiments, the number of correct responses in each training session was fixed. As a result, improvements in performance were due to reductions in entries to incorrect arms, a form of learning known to be hippocampus-dependent; together with the lesion effects from the automated maze, this appears consistent with the close anatomical and functional relationship between the DMS and hippocampus. In order to make improvements in performance dependent on increases in correct responses and thus more dependent on S-R learning, the present experiment limited the number of incorrect responses in each session. It was predicted that win-stay performance would be impaired by DLS lesions in this condition. Contrary to this prediction, DLS lesioned rats showed accelerated acquisition of the win-stay task compared to controls. In conjunction with the fact that studies using the manual and automated versions of the radial mazes differ in some respects in the apparatuses and procedures used, these findings suggest that the predominance of S-R learning within the manual maze win-stay may in part depend on specific conditions which arise from these differences and not just on the temporal contiguity of the stimulus, response, and reinforcer.

Effects of Imagery-Replacement Strategies on the Intensity of Food Cravings

Jaclyn Fisher & Bärbel Knäuper

Different imagery strategies were compared in their effectiveness at reducing the intensity of food cravings. Participants were randomly assigned to one of two distraction-based strategies (imagining an enjoyed activity unrelated to food or imagining another enjoyable food), one of two acceptance-based strategies (urge-surfing or imagining the unpleasant effects of indulging the craving), or to a low cognitive load control condition. Participants first logged their cravings for four days (baseline), then were taught one of the five strategies, and then logged their cravings for an additional four days. Data from $n = 16$ out of $N = 125$ (target sample size) have been collected thus far. A descriptive exploration of the means shows that two strategies (imagery of an enjoyed activity and imagining the unpleasant effects of indulgence) seem to decrease craving intensity and two strategies (imagining a favorite food and urge-surfing) seem to increase craving intensity. Three out of the four conditions seem to reduce the vividness of the craving-related imagery, which could suggest that these strategies are effective at replacing craving-related imagery.

The Effects of Quarrelsome Workdays on High-Spin Individuals

David Gold, D.S. Moskowitz, Ph.D.
Rachel Sutton

Interpersonal spin is a dynamic personality construct that describes the variability of an individual's interpersonal behaviour. High spin is associated with increased neuroticism, quarrelsomeness, and problematic interactions with coworkers. High neuroticism and low agreeableness predict greater spillover in workplace problems to home. Event-contingent recording data from 2009 and 2010 was analyzed to test how spin affects workday quarrelsomeness, and whether it impacts the spillover of workday quarrelsomeness to subsequent interactions at home with a romantic partner. Spin was positively associated with workday quarrelsomeness, and negatively moderated the association between workday quarrelsomeness and subsequent home quarrelsomeness. High spin predicts greater quarrelsomeness at work, but with less impact on home interactions. The findings support a model of spin as erratic behaviour.

Beyond Pick-Up Lines: Behaviors of the Anxiously Attached Lead to Poor First Impressions

Christine Gros, Joy McClure, John Lydon, McGill University

Initiating relationships is often a challenging task. Previous research suggests that anxiously attached individuals have particular difficulty initiating relationships, but the precise mechanism for this is unknown. We investigated the behaviors anxiously attached individuals are manifesting in a relationship initiation context, and the link between those behaviors and negative first impressions. We coded participants' behavior during an interaction with an attractive, ostensibly single, opposite-sex confederate. Participants were also rated on whether they made positive first impressions. Three behaviors were shown to mediate the link between attachment anxiety and negative first impressions: gaze orientation, awkwardness, and interaction synchrony. Our findings suggest that anxious attachment is associated with characteristic behaviors in initial interactions, and these behaviors can lead to poor first impressions.

Investigating reasons for relapse: The role of sensory and pain sensitivities throughout detoxification from opiates

Kayla Hamel, Sarah Coupland, Dr. Jeffrey Mogil, Dr. Kathryn Gill

Early attrition from treatments for opiate dependence is remarkably high. Given the strong relationship between length of time in treatment and positive prognosis, the lack of knowledge of the causes for early drop-out reveals a fundamental deficiency in the development of treatment for substance dependence. It has been suggested that heightened pain sensitivity upon cessation of opioid intake, known as opioid-induced hyperalgesia, could explain the propensity for relapse observed in opiate-dependent patients. The present study addressed the differential role of pain sensitivity in opiate dependent patients versus other substance dependent patients undergoing inpatient detoxification. We further assessed the role of sensory sensitivity throughout detoxification. Results indicate that opiate dependent patients are significantly more sensitive to subjective measures of sensory sensitivity, and objective measures of tactile and pain stimuli. These findings could contribute to improved treatment protocols that incorporate these patients' sensitized sensory systems. Further research should evaluate the role of sensory and pain sensitivity in long-term treatment outcomes for opiate dependent patients.

Enhancing Well-Being by Reflecting on Intrinsic Values

Nora Hope (PSYC 498D Honours student), Lucie Gouveia (PSYC 380D Honours student);
Natasha Lekes (Graduate student); Richard Koestner

Previous research has revealed that orientation towards intrinsic values, such as striving for fulfilling relationships, personal growth, and making the world a better place, as compared to extrinsic values, such as striving to be financially successful, attractive, and popular are related to significantly higher well-being (Kasser & Ryan, 1993; 1996). Propelled by these findings, we designed an experimental intervention in which undergraduate students reflected on their most important intrinsic values, by writing about them in an initial laboratory session, and engaging in brief reflection exercises on these values for four weeks. Students in an active control group wrote about their daily activities, and engaged in parallel reflection exercises involving their daily routine. Results revealed increased positive affect in the experimental group immediately following the intervention, as well as increased life satisfaction, and vitality at the four-week follow-up assessment.

Identification of familiar melodies from rhythm or pitch alone

Kathleen D. Houlihan & Daniel J. Levitin

This study examined the efficacy of song identification based on impoverished musical information. Specifically, it examined rhythm information and pitch information crossed with the sub-variables of quantization and dynamics. Participants were presented with excerpts of well-known songs with solely the rhythmic information or pitch information intact. The results revealed a low percentage of correct identification overall, and greater identification in the pitch conditions; however, we observed a wide range of accuracy in identification across songs. This indicates a previously unreported phenomenon that was masked in earlier reports that used averaging techniques: certain songs (presumably as a function of their underlying compositional features) are more readily identified by rhythm alone or pitch alone than others.

Psychological and physiological effects of non-deceptive placebo administration

Kate Howells*, Michael Lifshitz*, & Amir Raz

*Co-authors equally contributed to this work and are listed alphabetically

Placebos can have powerful therapeutic effects and may provide relief for patients with otherwise un-treatable maladies. And yet, placebo treatments present an ethical dilemma because they usually involve deception and therefore threaten the trusting relationship between doctor and patient. Recent preliminary reports, however, suggest that placebos may improve therapeutic outcomes even when patients are told they are receiving a placebo. In this way, placebos are slowly moving into the realm of ethical treatment. Expanding on these findings, the present study tested the differential effects of deceptive and open placebo administration on caffeine response. In contrast to other recent reports, our results suggest that, at least within our paradigm, open placebo administration does not lead to significant psychological or physiological changes.

**Childhood Need Conflict:
Individual Differences in Responsiveness to Autonomy Support**

Kirstie Kellman-McFarlane, Sook Ning Chua & Richard Koestner

According to Self-Determination Theory (SDT), in order to develop healthy self-regulatory processes children must be exposed to autonomy supportive environments that foster the satisfaction of psychological needs. Conversely, controlling environments adversely effect development by causing psychological needs to conflict. Study 1 empirically tested the consequences of childhood need conflict proposed in SDT through an online questionnaire. Consistent with SDT, childhood need conflict was associated with self-fragmentation and lower subjective well-being, autonomous motivation and need satisfaction. Study 2 tested whether childhood need conflict moderates the beneficial effects of autonomy support on motivation and performance. Participants were primed with autonomy supportive or controlling instructions and then completed an anagrams task. Results did not yield any significant main effects but showed individuals who experienced high levels of childhood need conflict were less interested in the experiment in the controlling condition relative to the autonomy supportive condition.

**Collective Identity Threat and Executive Resource Depletion: How Threatening One's Left-Handed
Identity Impacts His/Her Ability to Self-Control**

Frank Kachanoff & Dr. Donald M. Taylor

The present study investigated how dealing with threats to the value and distinctiveness of one's collective identity can undermine one's ability to self-control. 80 left-handed participants read either 2 articles that threatened the value and/or distinctiveness of their left-handed collective identity, or 2 neutral articles. Participants performed 2 tasks requiring self-control; the Stroop task, and an impossible tracing task. The Stroop task appeared unrelated to left-handedness, while the tracing task appeared related to handedness. It was hypothesized that relative to controls, threatened participants would perform worse on the Stroop task and persist longer on the tracing task. No significant differences were observed between conditions for either outcome. These results are inclusive, as participants did not appear threatened by the articles.

Structure and Function: Exploring the relationship between hippocampal volume and performance on tests of learning and memory

Daniella Ladowski (undergraduate), Sarah Banks, Viviane Sziklas (PI)

Patients with unilateral temporal lobe epilepsy (TLE) typically show hippocampal sclerosis ipsilateral to the seizure focus and material-specific deficits in memory processing (impaired retention of verbal material in left TLE and deficits encoding nonverbal information in right TLE). Despite such findings, few studies have addressed directly the extent to which structural changes in the hippocampus contribute to the deficits observed in these patients. We measured hippocampal volume and performance on analogous tests of learning and memory (Rey Auditory Verbal Learning Test; Aggie Figures Learning Test) in healthy subjects and patients with right or left TLE. Our findings indicate that this structure-function relationship is most evident in healthy subjects and only mildly related to the memory deficits observed in TLE.

The Role of Intolerance of Uncertainty on the Decision to Receive the HPV Vaccine

Stephanie Leon, Zeev Rosberger, Andrea Krawczyk, Samara Perez, Elsa Lau

Background. This paper investigates the influence of a personality trait, Intolerance of Uncertainty (IU), on the decision of college students to receive the Human Papillomavirus (HPV) vaccine. We hypothesized that participants' Certainty and Intention regarding the vaccine would vary according to their score on the two underlying factors of the IU: Desire for Predictability (DFP) and Uncertainty Paralysis (UP).

Methods. To examine this issue, we evaluated the factor structure of the IU scale (IUS) using factor analysis in STUDY 1. Based on the findings, we investigated the influence of the two factors, DFP & UP, in the context of a study of knowledge, attitudes, beliefs and intentions of college students to receive the HPV vaccine in STUDY 2.

Results. The factor analysis confirmed factor structure stability since item loading was equivalent to the ones obtained previously by other researchers. Then, a one-way ANOVA and chi-square showed that none of the hypotheses turned out to be significant.

Discussion. Although it was one of the first studies to examine the influence of a personality trait on a preventive health behaviour, results suggest this type of uncertainty does not seem to have any impact on the decision to receive the HPV vaccine.

The Impact of Conformity and Norm Transgression on Self-Conscious Emotions and Counterfactual Thinking

By Alex Létourneau

This study had two components. First, it examined the influence of conformity versus transgression of social norms on four social emotions (pride, respect, guilt, shame). Second, it explored thought processes (i.e. counterfactuals) that followed normative behaviour and their influence on participants' emotional states. In line with previous research, results indicated that norm conformity and transgression result in different emotional experiences, although these are mediated by the type of norm involved. Norms and normative behaviour also influenced thought processes, as demonstrated by the counterfactual thoughts generated by participants. Conditions had systematic effects on the types and quantity of counterfactuals generated. Importantly, there was no difference in emotions among conditions following the writing down of counterfactuals, at time 2.

Can Rats Monitor the Serial Order of a Sequence of Spatial Locations?

Yu Chen Liu, Michael Petrides

In primates, the prefrontal cortex plays a central role in executive functions, such as online monitoring and manipulation of information, active memory retrieval, and decision making (Brown and Bowman, 2002; Penelope & Petrides, 2003; Petrides, 1991). Although it has been shown that the prefrontal cortex of rats are involved in a number of executive functions, for example, attention processing, inhibitory control, and behavior flexibility (Birrell and Brown, 2000; Chudasama et al., 2003), the lack of an area that anatomically comparable to the dorsolateral prefrontal cortex (DLPFC) of primates raised concerns about using rats as an animal model to study the functions of the prefrontal cortex (Preuss, 1995). The aim of the present study was to further investigate whether normal rats demonstrate behavior dependent on functions associated with the primate DLPFC, specifically the ability to encode the precise serial order of a sequence of stimuli. Six normal rats were trained to perform a spatial serial-order memory task on a radial arm maze, which requires monitoring a sequence of four entered arms. The results showed that rats required a small number of training sessions (mean = 8 sessions) to correctly judge the serial order of pairs of spatial locations, when one of the locations was either the first or last visited arm in the sequence. Here, performance can be based on the primacy or recency effects. Rats required extensive amount of training in reaching criterion (mean= 70 sessions) for serial order judgment of pairs of spatial locations that occupied the middle sequential positions. Performance on this stage requires the coding of the precise serial order of stimuli. The data collected so far shows that rats can monitor and remember the serial order of a sequence of four spatial locations. However, the use of behaviour strategies by the rats such as using odor traces should be further investigated.

The Effectiveness of Mindfulness Skills in Curbing Chocolate Cravings

Jinshia Ly, Julien Lacaille, Natalie Zacchia, and Bärbel Knäuper

Food craving is as an urge to consume a specific type of food, which tends to be unhealthy. Mindfulness is a present-centered psychological quality, in which thoughts, feelings and emotions are accepted as they are. We identified three distinct components (skills) of mindfulness that could potentially be trained – *awareness*, *disidentification* and *acceptance*. The present study examined the short- and long-term effectiveness of training these mindfulness components in reducing state and trait cravings of chocolate. This study was a 15-day longitudinal study, involving two laboratory sessions and 13 days of home practice in between. Five conditions were involved in this study: (1) Awareness, (2) Awareness + Disidentification, (3) Awareness + Acceptance, (4) Awareness + Disidentification + Acceptance, and (5) control. Forty-three participants, who experienced frequent chocolate cravings, took part in the study. All strategies were equally effective in reducing state cravings in the short and long term. Combining all mindfulness skills was more effective at the $p < .10$ level than the disidentification strategy in reducing trait-cravings. Insignificant findings may be due to the fact that so far only about one third of the target sample size has been realized.

The N400 Indexes Contextual Inhibition

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We investigated, using electroencephalogram recordings, the processing of information that is inappropriately-activated during reading. We hypothesized the N400 event-related potential (ERP) component indexes inhibitory neural processes that depress activation of irrelevant information, which was previously associated with a stimulus. In a reading and recall task participants were shown one content word ending two distinct sentences. Participants were cued with the content word and asked to recall both sentences. ERPs elicited at the second sentence were computed depending on whether participants recalled or did not recall the first sentence. Consistent with our hypothesis, larger N400s were elicited when the first sentence was forgotten. This supports a reading comprehension model where N400 related inhibitory processes select the semantic information available in working memory.

An Experimental Investigation of the Effects of Perceived Injustice and Gender on Pain Expression and Pain Experience

Lara Manganelli, Rebecca Guttman, Zina Trost, Michael Sullivan

Recent research has implicated perceived injustice as a type of psychological appraisal that may negatively affect pain experience and outcome. The present study aimed to examine whether perceptions of injustice differentially affect pain ratings, distress ratings and pain behaviour for men and women. Forty individuals between the ages of 18 and 40 years were used as participants for this study. Pain was experimentally induced using the Cold Pressor Task (CPT). Perceptions of injustice were induced in participants assigned to an Negligence condition by informing them that they would have to repeat the CPT procedure due to the negligence of the experimenter. Participants in the Control condition were told that the repetition is a standard part of experimental protocol. Results revealed that participants in the negligence condition displayed a marginal increase pain ratings and distress ratings in response to the manipulation of injustice. Women did not show a higher increase in pain ratings or distress ratings in response to the manipulation of injustice. Contrary to expectation, women displayed significantly lower pain behaviour than men after the manipulation of injustice.

How Assumptions Affect the Actions of a Pill: The Role of Perceived Control in Expectancy Effects

Laura McClemon, Vanessa Maggio, & Amir Raz

Previous research has demonstrated that non-drug factors, such as the colour of a pill, have a significant impact on the effect of drugs. This study examined how perceived control over which colour pill to ingest can modulate the placebo response. Forty-eight undergraduate students were assigned to 1 of 6 conditions, which varied in the colours of the pills presented (blue-white vs. blue-red vs. red-white) and the level of perceived control over ingestion (high vs. low). Blood pressure, heart rate, and a 12-item questionnaire was taken before and 10 minutes after ingestion. There was a significant effect of pill colour on perception of active ingredient and change in diastolic blood pressure. No significant effect of colour or choice was found in blood pressure, heart rate or psychological parameters between pre-and post-ingestion.

Priming Motivational Goals: An experience mediated by General Causality Orientations

Kainaz Mistry, Marina Milyavskaya, & Richard Koestner

The Auto-Motive Model argues that goals can be activated and pursued automatically in the absence of conscious awareness but it is unknown how this automatic pursuit of these goals is then experienced. Presently, there is no research on the role of personality orientations in the experience of primed motivational goals. We hypothesize that autonomy oriented individuals will experience motivational primes as more interesting than controlled oriented individuals. In order to test our hypothesis we primed participants with achievement and asked them to solve some anagram puzzles. We found that, participants in the Prime condition solved more anagrams than the Neutral condition and participants in the Primed Condition who were autonomously oriented expressed more interest for the activity than controlled personality types. Our findings demonstrate that subtle, non-conscious cues in the environment do affect people's performance on an activity and that the subjective experience of the activity following such a prime varies based on personality.

Bilinguals' sensitivity to rhythmic patterns in speech

Michele Morningstar, Pascale Lidji & Caroline Palmer

Bilinguals' experience with the stress patterns of many languages may influence their perception of rhythm in speech. To verify this, highly fluent English-French bilinguals completed a speech tapping task, in which they were asked to tap along to the beat they perceived when hearing French and English sentences. Participants produced a more regular pattern of tapping when hearing English than when hearing French; as well, taps were more closely aligned with syllable onsets when responding to English sentences. Correlations between the variability of stimulus syllable onsets and the variability of taps suggest that bilinguals were able to follow the patterns of regularity in both languages. Thus, both the stimulus language and listeners' sensitivity to rhythmic stress patterns influenced tapping performance.

Title: The Relation Between Catastrophizing, Fear of Pain, and Repetition Induced Summation of Activity-Related Pain in a Non-Clinical Sample

Authors: Samira Moumne, Tsipora Mankovsky, Rebecca Guttman, & Michael Sullivan

The primary purpose of the present study was to investigate Repetition Induced Summation of Activity Related Pain in a non-clinical sample. Furthermore, this study investigated catastrophizing and pain-related fear as psychological correlates of RISP. Participants were first induced with Delayed Onset Muscle Soreness. The following day, participants rated their pain as they lifted a series of weighted canisters, and completed the Pain Catastrophizing Scale (PCS) and Fear of Pain Questionnaire-III (FOP). An index of RISP was derived as the change in mean activity-related pain ratings across lifts. A RISP effect was observed whereby pain ratings increased as participants lifted successive canisters. Although catastrophizing and fear of pain were correlated with RISP, these correlations were non-significant.

Early Age of Drug-Use as Marker for Attenuated Amphetamine-Induced Dopamine Release and Risk Factors for Substance Dependence

HY Ng, KF Casey MSc, C Benkelfat MD, DERBH, MV Cherkasova, GB Baker PhD, A Dagher MD, M Leyton PhD.

Early substance exposure has been implicated in more severe drug issues in the future. In the present study, we examined whether age of first substance use predicts family functioning, personality trait, family history, and amphetamine-induced dopamine release in 48 individuals at varying risk for substance dependence. Factor analysis showed a common underlying factor among age of *stimulant* (e.g. cocaine) but not *depressant* (e.g. alcohol) drug use. These factors related to the personality trait of 'harm avoidance' and family environment of 'expressivity', showing a relation with environmental and genetic predisposition. Additionally, low scores on this factor predicted attenuated dopamine release striatum, predominantly in ventral regions. In summary, age of drug use is related to risk factors for substance dependence and correlates with early biochemical differences in response to drugs.

Do Young Children Show Within-Group Biases when Cooperating with Adults?

Carla Oberth, Marie Lippeveld, Jordan Friedman and Thomas Shultz

The present study explored whether there exists an evolutionary basis for ethnocentrism. We tested whether children preferred to help a member of their own group (defined by language) opposed to a member of another group. During the warm-up phase, eight 14- to 19-month-old children interacted equally with two actors. One actor spoke in the children's native language (English or French) and the other actor spoke in a foreign language (Foreign Language condition) or in the children's native language but with a foreign accent (Foreign Accent condition). During the test phase, each actor attempted to complete three different puzzles that were missing one piece. One copy of that piece was placed within the children's grasp, giving them the opportunity to help one of the actors. The results indicated that in the Foreign Language condition, the children always helped the native actor during the first help, while in the Foreign Accent condition, the children always helped the foreign actor. The results suggest that children can use language but not accent as an indicator of kind and group membership.

The Effects of Working Memory on Social Attention

Natasha Pestonji, Dana Hayward and Jelena Ristic.

Where others look reveals where they are attending. However, the nature of this social behavior remains unknown. We investigated whether willful orienting to gaze direction is suppressed by a concurrent working memory (WM) task. As gaze direction predicts events, participants will utilize executive resources to perform the task. As WM load increases, participants will also utilize executive resources to perform the WM task. Participants performed an attentional orienting task while completing a WM task of increasing difficulty.

The data indicated that the magnitude of social orienting increased with increased WM load. This suggests that social orienting occurs reflexively because combined WM load and willful attentional processes have exhausted the available executive resources thus allowing the reflexive orienting system to work.

The Impact of Teaching Religion on Religious Beliefs and Well-being: The Mediating Role of Life Goals

Cynthia Psaradellis, Richard Koestner & Natasha Lekes

Previous research has shown that identified religious beliefs were associated with well-being whereas introjected religious beliefs were not. The relationship between religious internalization and well-being and the role that life goals play were explored. Surveys were completed by 120 Roman Catholic catechists and coordinators while teaching religion. Results showed that teachers decreased in their level extrinsic life goals over the three months. Extrinsic life goals were associated with introjected religious beliefs, higher negative affect and negatively associated with identified religious beliefs. Identified religious beliefs were marginally related to the teachers making great progress on their goals for religious education. These results highlight the value of exploring life goals as possible mediators in the relation of religious beliefs to well-being outcomes.

Reciprocal Behaviour in Foraging Animals via Mutual-Exploitation

Laksh Puri, Louis Lefebvre, Thomas Shultz

Foraging behaviour among animals is conceptualized using the Producer-Scrounger framework, where a producer that invests a significant amount of energy to discover a resource is later exploited by a low-investing scrounger. One model of foraging behavior, known as the skill-pool (SP), allows an individual to interchange its role as a producer and scrounger, so that if its produced resource is scrounged by others, it can later scrounge others' resources. This behaviour across individuals gives rise to a system of reciprocity, which, intriguingly, is a direct consequence of individuals exploiting each other. We investigated the SP through the use of computer simulations, and our results showed that environments with relatively rich resources lead to high levels of reciprocal behaviour among foraging animals. Evidence of such reciprocity is important for understanding and predicting cooperative behaviour among animals, which is especially puzzling to ecologists due to its counter-evolutionary implications.

Implicit Devaluation of Attractive Alternatives as a Means of Romantic Relationship Maintenance.

Amber-Lee Shattler , Dr. John Lydon

Previous studies examining the devaluation of attractive alternatives effect have mainly utilized explicit measures to determine whether people in committed relationships will devalue attractive alternatives more than single individuals. It is theoretically important to learn whether devaluation can operate in an automatic fashion. Using the Affect Misattribution Procedure (AMP), we examined whether an attractive alternative prime preceding a neutral figure, a Chinese character, would lead to increased automatic pleasant ratings of the neutral figure for singles and increased automatic unpleasant ratings for daters. Results show that singles gave higher pleasant ratings when primed with attractive faces than with any other face prime; this difference was significantly smaller for the dating group (although evaluations with attractive primes did not decrease significance).

Social Evaluative Threat Appraisal and the Cortisol Stress Response

Ellen Stephenson, Julie Andrews, Annie Duchesne, and Jens C. Pruessner

Social evaluative threat (SET) characterizes psychosocial stressors known to activate the hypothalamic-pituitary-adrenal (HPA) axis. Increased sensitivity to SET could help explain individual differences in HPA axis reactivity. This investigation aims to assess the role SET appraisal plays in determining cortisol reactivity to a standard psychosocial stress paradigm. Ten men (study 1) and fourteen women (study 2) provided saliva samples, completed questionnaires, and underwent a standard or modified version of the Trier Social Stress Test. Study 2, but not study 1, revealed a trend for an association between greater perceived SET and greater salivary cortisol. Differences between the study protocols may account for the discrepant findings. Nevertheless, future work should explore for whom and under what conditions SET appraisal has an effect on stress reactivity.

The relationship between implicit pain-self associations, pain severity and pain behaviours during a cold pressor task

Dr Michael Sullivan, Whitney Scott, Sarah Griffin, Cameron Taylor

Psychology is an important component in the pain experience, and implicit cognitive processes are an integral part of psychology. This is the first experiment to use the Implicit Association Task (IAT) to relate implicit pain/self associations to pain severity and pain behaviours. Healthy participants completed a pain inducing cold pressor task, and also completed a Pain IAT. The results suggest the validity of the Pain IAT in a healthy population. A negative correlation between pain/self associations and pain behaviours was found in the first condition, in which participants completed the cold pressor task after doing the IAT. Conversely, a positive correlation was found in the second condition, in which participants completed the cold pressor task before and after doing the IAT. Further research should aim to solve this conundrum.

Are You Rational? Quantum Probability Explains Why You're Not

Cameron Taylor, Thomas Shultz, Jerome Busemeyer

Abstract: This experiment involved two moral decision-making tasks in which participants had to find a defendant guilty or not guilty. Each task had three conditions, in which the third condition was a disjunction of the first two. The law of total probability suggests that the rates of guilty responses in the third condition should be an average of the first two. Results showed disjunction effects, a violation of the law of total probability: defendants were more likely to be found not guilty in the ambiguous disjunctive situation, even if both sides of the ambiguity result in guilty convictions. As such, disjunction effects could have serious consequences for judicial processes. A quantum probability model accurately predicts our results.

The effects of ipsilateral vPFC-vHC lesions on impulsive premature response in the rat

Emma Vallance, Debra Langleben, and Yogita Chudasama

Past research implicates the involvement of the ventral hippocampus (vHC) and ventral prefrontal cortex (vPFC) in components of executive function including behavioral inhibition and attention. Neuroanatomical projections from the vHC to vPFC are well described in the literature. However, there has been little attempt to understand how these two structures are concurrently engaged in executive function. The present study employed an ipsilateral vHC-vPFC disconnection procedure and assessed performance in the Five Choice Serial Reaction Time Task. Results indicated that vHC-vPFC ipsilateral disconnection lesions precipitated an impaired ability to inhibit impulsive premature response in the task. These results suggest that vHC-vPFC ipsilateral projections contribute to a common neural system that subserves inhibitory control in the rat

Assessing the Viability of a Meta-Analysis on Attentional Biases in Anxious and Depressed Youth

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Youth with anxiety and depression display significant social impairments. The social information-processing (SIP) model (Crick & Dodge, 1994) posits that cognitive processes contribute to these social deficits. The current study explored the viability of a meta-analysis focusing on the relationship between the first stage of this model—encoding—and youth internalizing symptoms. Results showed that anxious youth were quicker to respond to angry facial expressions than non-anxious youth, suggesting an attentional bias toward threat. An insufficient number of studies, due primarily to the exclusion of studies that did not differentiate between social and non-social stimuli, limited our ability to examine other potential biases. Consequently, our next step will be to consider information-processing more generally.

The Effectiveness of Training Mindfulness Skills to Reduce Food Cravings

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Food cravings are associated with several negative outcomes and it is important to develop effective coping techniques. Mindfulness is a technique which involves noticing and accepting the presence of cravings instead of controlling them. This study investigated the ability of mindfulness skills (Awareness, Disidentification, Acceptance, Disidentification and Acceptance) to curb chocolate cravings. Craving intensity and feeling bothered by cravings were recorded in students before and after a training period. Preliminary results from a subset of the sample show that with training, the Disidentification and Acceptance condition became less bothered by cravings compared to the Awareness condition and experienced less intense cravings than the Awareness, Acceptance and Control conditions. With training, the Acceptance condition experienced less intense cravings than the Control condition, but more than the Awareness condition, and the Awareness condition experienced less intense cravings than the Control condition. The Disidentification and Acceptance condition seems to be most beneficial.