II-001 Age differences in judgments of attractiveness, likeability, and trustworthiness of faces
Diana Sanchez Cortesx, Stockholm University
Petri Laukka, Stockholm University
Håkan Fischer, Stockholm University

The focus of face perception research has predominantly been the recognition of emotions, with less research on how people perceive social aspects from faces (for example trustworthiness, competence, approachability or attractiveness). The current study investigates whether social attributions/judgements from faces change with aging.

(Social Psychology, Cognitive Psychology - Cognition & Emotion)

II-002 Art Appreciation: The Influence of a Foreign versus Native Language
Elena Stephanx, Bar Ilan University
Katy Borodkin, Tel Aviv University
Miriam Faust, Bar-Ilan University

Abstract art is typically liked less than representational art which more resembles objects in reality. We tested and supported in three studies the prediction that appreciation of abstract art may be enhanced by foreign language context that may distance individuals from pragmatic everyday perception and search for familiar meaning.
II-003 Behavioral and psychophysiological responses during decision making that involved financial risk among men with autism traits
Ming Ann Luix, Baptist University Hong Kong
No secondary authors

This study examined economic decision making among men with either high or low Autism Spectrum Quotient (AQ). High AQ scorers had significantly lower skin conductance responses (SCRs) than low AQ scorers during decision making. The participants’ loss aversion was shown in their behavioral and SCRs.

(Biological Psychology, Behavioral Economics - Cognition & Emotion)

II-004 Biases in psychological measures: The influence of word types and response options on reaction times.
Brian O'Shea, University of Warwick
Gordon D. A. Brown, University of Warwick
Derrick G. Watson, University of Warwick

Reaction times (RT) to images/words are the core feature of a number of prominent psychological tasks. Across four studies (N > 700) we show that the concreteness of words influence RTs. This bias could have an influential impact on various RT tasks and subsequent interpretations if not accounted for.

(Cognitive Psychology, Linguistics - Cognition & Emotion)

II-005 Building trust between humans and virtual agents: The effect of imitation on interpersonal trust
Ville Harjunen, Helsinki Institute for Information Technology, Aalto University
Dominique P. Lippelt, Social and Behavioural Sciences, University of Leiden
Michiel Spapé, Department of Psychology, Liverpool Hope University
Imtiaj Ahmed, Helsinki institute for information technology, University of Helsinki
Giulio Jacucci, Helsinki institute for information technology, University of Helsinki
Bernhard Hommel, Social and Behavioural Sciences, Leiden University
Niklas Ravaja, School of Business, Aalto University

 Earlier studies suggest that people manifest greater trust in persons who imitate their gestures. Using a repeated-trial BDM trust game and virtual reality we demonstrate that
gestural imitation increases trust in virtual agents’ and that this effect become stronger along time but is only manifested if not noticing the imitation.

(Social Psychology, Behavioral Economics - Cognition & Emotion)

II-006 Can anger have a positive effect on cognitive performance?  
Marcin Zajenkowskix, University of Warsaw  
No secondary authors

We found an interaction between energetic arousal and agreeableness in predicting trait anger: anger was positively associated with energy at low level of agreeableness, whereas at high agreeableness the correlation was negative. Furthermore, we tested consequences of this increased energy and approach motivation for intellectual performance.

(Personality/Emotion Psychology, Cognitive Psychology - Cognition & Emotion)

II-007 Can Creating and Coloring Mandalas Reduce Anxiety and Improve Attention?  
Mavis Wongx, University  
No secondary authors

Anxiety is one of the common mental illnesses. If the effectiveness of coloring and creating in anxiety reduction are determined, people can use other ways including coloring and creating pictures to reduce anxiety. 32 participants are students and Chinese. The participants are assigned one of four art activities.

(Cognitive Psychology, Personality/Emotion Psychology - Cognition & Emotion)

II-008 Can Emotional (Un)certainty Modulate the Decisional Fit Effects?  
Elvan Arikan Iyilikcix, Ege University  
Gözde Tuncer, Ege University  
Sonia Amado, Ege University

The present study aims to investigate the decisional fit effects in the context of Appraisal Tendency Framework (Lerner & Keltner, 2000, 2001). Specifically, we tested whether the perceived value of a decision outcome would increase when there is a fit between emotional (un)certainty and the depth of processing.
II-009 Can robots facilitate adaptive emotion regulation? Some preliminary evidence from two experimental studies
Silviu A. Matux, Babes-Bolyai University, Cluj-Napoca
Monica B Bartucz, Babes-Bolyai University, Cluj-Napoca
Victor D Cruceanu, Babes-Bolyai University, Cluj-Napoca
Daniel O David, Babes-Bolyai University, Cluj-Napoca; Icahn School of Medicine at Mount Sinai, New York

Robots have been proposed as a possible future solution for disseminating psychological treatments. Using the emotion regulation framework, we investigated if robots could help students manage social anxiety. Results offered some evidence for the usefulness of robotic agents, but much research and technological advancements are needed to develop such applications.

(Clinical Science, Cognitive Psychology - Cognition & Emotion)

II-010 Cognitive Processes in Burnout
Kathleen Hodkinsonx, Webster Vienna Private University
Aron Zieger, Webster Vienna Private University

Cognitive Processes in Burnout have received little research attention thus far. This prospective study investigated the role of cognitive distortions and dysfunctional attitudes in predicting burnout in university students. Results indicated that these cognitive processes are related to burnout but do not appear to predict burnout at a later date.

(Clinical Science - Cognition & Emotion)

II-011 Decision Making Styles in Women during Mestrual Menstrual Cycle
Rania M. Alfarx, Kafr-Elshiekh University

A sample of 120 virgin university students participated in the study. Subjects aged between 25-35 years completed a self-report measure of nine decision-making styles. The results indicated that there were significant differences in decision-making styles in women depending on the pattern (regular-irregular mensuration), and the stages of the menstrual cycles.
II-012 Depressive rumination from the cognitive outlook
Azra Jahanitabesh, Department of Cognitive Psychology, Institute of Cognitive Science Studies, Iran
Brittany Cardwell, Department of Psychology, University of Otago, New Zealand
Kumari Valentine, Department of Psychological Medicine, University of Otago, New Zealand
Jamin Halberstadt, Department of Psychology, University of Otago, New Zealand

To investigate whether rumination encourages thinking in concrete versus abstract terms, participants were asked to ruminate (or not) under different emotional conditions. Compared with controls, sad ruminators construed information more concretely. This cognitive consequence of depressive rumination may help explain why rumination prolongs negative affect.

II-013 Different Influence of Previously Perceived Affective Words and Faces on the Perception of Facial Emotion
Soyoung Kwon, Pusan National University
Haejin Kim, Pusan National University
Jeongsoo Lee, Pusan National University
Donghoon Lee, Pusan National University

Using a psychophysical procedure we investigate how the perceptual threshold of emotion in the face is modulated by previously seen affective words and emotional faces. While words lower the threshold, faces highten it. These results support the idea that language helps to constitute emotions.

II-014 Cognitive and Personality Determinants of Memory Misinformation
Abdrabo Soliman, Qatar University
Fatima H. Alkuwari, Qatar University

172 freshmen student students watched a video along with a narration of deceptive information and were administered several cognitive and personality measures. The findings revealed that participants with memory failure, dependent style, cognitive
failure, and several personality disorders experienced a greater susceptibility to memory misinformation.

(Cognitive Psychology, Personality/Emotion Psychology - Memory)

II-015 Cognitive load (in)dependency of involuntary autobiographical memories
Kryśtant Barzykowskix, Applied Memory Research Laboratory, Institute of Psychology, Jagiellonian University
Agnieszka Niedziwska, Applied Memory Research Laboratory, Institute of Psychology, Jagiellonian University

Using an experimental cognitive load manipulation we investigated why involuntary memories are often experienced during undemanding activities. Consistently across two experiments, we observed lower number of memories and thoughts in the cognitive load group. However, memories unexpectedly constituted higher percentage of all mental contents when participants were loaded.

(Cognitive Psychology - Memory)

II-016 Cognitive Load and Memory Bias: Three Experiments Using Sequential Stimulus Estimation
Sean Duffyx, Rutgers University
John Smith, Rutgers University - Camden Department of Economics

Two experiments report effects of high cognitive load (HCL) on spatial estimates of extent. Building on prior research demonstrating HCL increases memory biases, the present study further elaborates on the source of bias by varying whether HCL occurs at encoding or retrieval and whether HCL increases sequential biases.

(Cognitive Psychology, Behavioral Economics - Memory)

II-017 Competing Emotional Faces in Visuospatial Working Memory
Marlene Poncetx, University of Aberdeen
Sara Spotorno, University of Glasgow
Margaret C. Jackson, University of Aberdeen

We investigated how faces with different emotional expressions (happy, angry, sad, fearful) compete in visuospatial working memory for identity-location bindings. Our results demonstrate a happy benefit irrespective of other competing emotions present at
encoding, which could be explained by more efficient and less resource intensive binding processes.

(Cognitive Psychology, Social Psychology - Memory)

II-018 Contrastng Distinctive Processing and Retrieval Cue Efficacy Explanations of the von Restorff Effect
Qian Wen Chee, National University of Singapore
Winston D. Goh, National University of Singapore

The von Restorff effect refers to better memory for an isolated item made distinctive from other list items. We demonstrated that the effect could be obtained even without distinctive processing at encoding. Retrieval cue efficacy was sufficient to produce the effect even when the isolate was not obvious during encoding.

(Cognitive Psychology - Memory)

II-019 Decoding Attended and Unattended Items in Working Memory
Polina Iamshchinina, Bernstein Center for Computational Neuroscience, Charité - Universitätsmedizin, 10115 Berlin, Germany
Thomas B. Christophel, Bernstein Center for Computational Neuroscience, Charité - Universitätsmedizin, 10115 Berlin, Germany
John-Dylan Haynes, Bernstein Center for Computational Neuroscience Berlin

Addressing an ongoing debate, we investigated neural activity patterns evoked by attended and unattended WM using fMRI and MVPA. Relevant WM contents were decoded from visual areas whereas information about currently irrelevant contents was found in parietal cortex. This speaks for separate storage of WM contents depending on their task-priority.

(Cognitive Psychology, Neuroscience - Memory)

II-020 Developmental differences in playing Concentration
Osman S. Kingo, Center on Autobiographical Memory Research, Dept. of Psychology and the Behavioral Sciences, Aarhus University
Trine Sonne, Center on Autobiographical Memory Research, Dept. of Psychology and the Behavioral Sciences, Aarhus University
Peter Krøjgaard, Aarhus University
This study shows how children (6 and 8 y) perform differently and at times better than adults in the memory game “Concentration”. Three different types of stimuli (cards) are compared (PICTURES, NUMBERS, PATTERNS) to show how different degrees of conceptual information interact with the performance of the different age groups.

(Developmental Psychology, Cognitive Psychology - Memory)

II-021 Differential Effects of Emotional Expression on Working Memory for Face Identity (Who?) versus Face Identity-Location Bindings (Who was Where?)
Margaret C. Jacksonx, University of Aberdeen
Marlene Poncet, University of Aberdeen
Sara Spotorno, University of Glasgow

It is well established that visual working memory (WM) for face identity is enhanced for angry versus non-threatening faces. Here we show that adding a spatial component to the task alters the emotion effect - visuospatial WM for who was where is enhanced for happy versus angry faces.

(Cognitive Psychology - Memory)

II-022 Do performance- and rating-based measures of working memory assess the same ability? Evidence that secondary memory but not primary memory predicts parent-rated working memory and inattention scores.
Kathryn J. Ralph x, University of Notre Dame
Bradley S. Gibson, University of Notre Dame
Dawn M. Gondoli, University of Notre Dame

Performance- and rating-based measures are both purported to measure working memory (WM) despite being poorly correlated. WM is comprised of primary (PM) and secondary memory (SM), so a mismatch may exist between the WM components assessed by each measure type. Multiple regressions revealed that solely SM significantly predicted rating-based measures.

(Cognitive Psychology - Memory)

II-023 Does suppressing a memory item facilitate retrieval of another item?
Satoru Nishiyamax, Kyoto University
Satoru Saito, Kyoto University
On the basis of interference theory of retrieval induced forgetting, we examined whether the recall of items can be facilitated by suppressing competitive items in the same category. In the current experiment, however, there was no facilitation in the retrieval of items in the same category as the suppressed items.

(Cognitive Psychology - Memory)

II-024 Emotional components of goosebumps and their association with personality traits
Kenji Katahirax, Kwansei Gakuin University
Ai Kawakami, Kwansei Gakuin University

The types of emotion that induce goosebumps and their association with the big five personality traits were examined. Individual differences in obtaining goosebumps with 10 discrete emotions yielded Positive, Negative, and Interest factors, and the Interest factor showed a significant positive correlation with the Openness to Experience factor of NEO-FFI.

(Personality/Emotion Psychology - Emotion)

II-025 Emotional Contagion: Mechanisms of the imitation of facial expressions.
Andres Pinilla Palaciosx, National University of Colombia
Ricardo M Tamayo Osorio, National University of Colombia

The aim of this research is to establish whether or not the probability of emotional contagion increases when the emotional state of the participant is closer to the target emotional state susceptible of being imitated, in quantitative terms of the Emotional Space Model (Caccioppo, Gardner & Bernston, 1997).

(Cognitive Psychology, Personality/Emotion Psychology - Emotion)

II-026 Emotional Integration of Bodies and Faces: Does It Survive Temporally?
Maya Leckerx, Hebrew University of Jerusalem
Hillel Aviezer, The Hebrew University of Jerusalem
Roy Shoval, Haifa University
Baruch Eitam, University of Haifa

Emotional face-body integration is thought to be robust and even persists with spatial misalignment. However, the temporal limits of this integration remain unclear. Using a
novel measure of visual integration, the current study finds that even extremely brief temporal gaps between bodies and faces can obliterate their integration.

(Personality/Emotion Psychology, Cognitive Psychology - Emotion)

II-027 Emotional Norms for Russian Nouns: The Database ENRuN
Dmitry Lyusinx, Higher School of Economics
Tatiana Sysoeva, Russian Academy of Education, Psychological Institute

The database ENRuN contains affective ratings for 378 emotional and nonemotional Russian nouns (DOI: 10.13140/RG.2.2.33177.62566). Participants rated relatedness of each word to five emotional categories – happiness, sadness, anger, fear, and disgust (N=100) – and two affective dimensions – valence and arousal (N=190). Results indicate high reliability of the ratings.

(Personality/Emotion Psychology, Cognitive Psychology - Emotion)

II-028 Empathy and Social Status: the Interplay between Perceptions of Empathy Expression and Social Status
Christine Spencerx, Queen’s University Belfast
Gary McKeown, Queen’s University Belfast
Damien Dupré, Queen’s University Belfast

The expression of empathy is increasingly being considered to be subject to context effects. It is predicted that perceptions of an unbalanced social status dynamic will have a significant effect on participant raters’ estimates of empathy displayed by individuals in a social interaction.

(Personality/Emotion Psychology, Social Psychology - Emotion)

II-029 Enigmatic Apes: Bonobos Show an Attentional Bias towards Positive Emotions
Evy van Berlox, Leiden University
Mariska E. Kret, Leiden University
Thomas Bionda, Apenheul
Jasper G. Wijnen, University of Amsterdam

Bonobos are highly endangered and enigmatic apes. They show an attentional bias towards positive emotional stimuli, which contrasts with findings from humans and chimpanzees. In this study, we investigated whether this attentional bias is moderated
by the identity of the individuals presented on the stimuli (i.e. familiar or unfamiliar conspecifics).

(Cognitive Psychology, Personality/Emotion Psychology - Emotion)

II-030 FACIAL EMOTION EXPRESSION AND RECOGNITION IN PARKINSON’S DISEASE
Matteo Bolognax, Sapienza, University of Rome, Rome, Italy
Isabella Berardelli, Sapienza, University of Rome, Rome, Italy
Giulia Paparella, Sapienza, University of Rome, Rome, Italy
Luca Marsile, Sapienza, University of Rome, Rome, Italy
Lucia Ricciardi, St George’s, University of London, London, United Kingdom.
Giovanni Fabbrini, Sapienza, University of Rome, Rome, Italy
Alfredo Berardelli, Sapienza, University of Rome, Rome, Italy

To study aim is to investigate possible deficits in facial expression and recognition and their relationship, if any, in patients with PD. The lack of any correlation between altered facial emotion expression kinematics and emotion recognition deficits in patients suggests that these abnormalities are mediated by separate pathophysiological mechanisms.

(Neuroscience - Emotion)

II-031 Facial emotional expression in Parkinson’s disease: the mistery of asymmetry
Lucia Ricciardix, St George’s, University of London, London, United Kingdom.
Federica Visco-Comandini, Sobell Department of Motor Neuroscience and Movement Disorders, UCL Institute of Neurology, University College London, London, UK
Roberto Erro, 2Sobell Department of Motor Neuroscience and Movement Disorders, UCL Institute of Neurology, University College London, London, UK
Francesca Morgante, Department of Clinical and Experimental Medicine, University of Messina, Messina, Italy
James Kilner, Sobell Department of Motor Neuroscience and Movement Disorders, UCL Institute of Neurology, University College London, London, UK
Mark J Edwards, Neurosciences Research Centre, Cardiovascular and Cell Sciences Research Institute, St George’s University of London, United Kingdom
Matteo Bologna, Sapienza, University of Rome, Rome, Italy

We aimed to evaluate possible differences in left or right dominance for the facial expressivity of the 6 main emotions (happiness, sadness, anger, surprise, disgust, fear) in 20 patients with Parkinson's disease and 20 healthy subjects. We showed a
significant difference in facial expressivity laterality between groups for the expressions of anger and surprise.

(Neuroscience, Cognitive Psychology - Emotion)

II-032 Gently Does It: Humans Outperform a Software Classifier in Recognizing Subtle, Non-stereotypical Facial Expressions
Neta Yitzhakx, Hebrew University of Jerusalem
Daniel S. Messinger, University of Miami
Emily B. Prince, University of Miami
Katherine Martin, University of Miami
Hillel Aviezer, The Hebrew University of Jerusalem

Emotion researchers focus disproportionally on intense prototypical facial-expressions. We report a novel dynamic set of non-prototypical, subtle facial-expressions rated more naturalistic than prototypical expressions. While well recognized by humans, a software classifier failed at classifying them. Humans are sensitive to a wide range of emotional cues beyond the classic prototypes.

(Social Psychology, Personality/Emotion Psychology - Emotion)

II-033 How much time do we need to recognize vocal emotions?
Paula Castiajox, 1Neuropsychophysiology Lab, School of Psychology, University of Minho
Ana P. Pinheiro, Voice, Affect and Speech Lab, Faculty of Psychology, University of Lisbon; Neuropsychophysiology Lab, School of Psychology, University of Minho

The time needed to recognize vocal emotions from speech prosody varies as a function of emotion type. Here we demonstrated that emotional cues may be more rapidly and reliably detected from nonverbal vocalizations compared to other means of emotional expression (e.g., faces or prosody).

(Neuroscience - Emotion)

II-034 Assessing attentional biases in depression using categorization tasks and models
Isa Ruttenx, University of Leuven
Wouter Voorspoels, University of Leuven
Ernst Koster, Ghent University
Wolf Vanpaemel, University of Leuven
Attentional bias assessment in depression is known for its methodological challenge. In this study we test whether a categorization approach, consisting of a prototype classification task and model, can be used to assess attentional biases towards sadness and away from happiness in depression.

(Cognitive Psychology, Clinical Science - Attention)

II-035 **Attentional bias to slimmer bodies in young women**

Francisco Estevesx, Mid Sweden University, Östersund, Sweden.
Marie Manholm, Mid Sweden University
Kerstin By, Mid Sweden University
Alexandra M Jansson, Mid Sweden University
Billly Jansson, Mid Sweden University
Marie-France Larsson, Mid Sweden University
Anna Bjärtå, Mid Sweden University
Örjan Sundin, Mid Sweden University

A group of young women unsatisfied with their bodies was compared to a control group while viewing photos of women with different body shapes (thinner or heavier). The group with body dissatisfaction showed an attentional bias for slimmer bodies, while the control group did not show this pattern.

(Cognitive Psychology, Personality/Emotion Psychology - Attention)

II-036 **Attentional Networks in Children with Dyslexia**

Suvarna Rekha Chintax, IIIT-Hyderabad
Bipin Indurkhya, Jagiellonian University, Cracow (Poland)

Studies demonstrated three attention networks: alerting, orienting, executive are independent in nature and found no correlation between networks in a typical population. Comparatively less investigated in children with dyslexia. Thus, this study explores if these attentional networks hold for children with dyslexia.

(Cognitive Psychology, Neuroscience - Attention)

II-037 **Can the Mental Spatial Representation of Digits and Country Names Shift Spatial Attention?**

Katrin Liebergesellx, University of Graz
Marie-Sophie Bergen, University of Graz
Anja Ischebeck, University of Graz
Christof Körner, University of Graz
Margit Höfler, University of Graz

Digits are represented on a mental (left-to-right) number line and were shown to shift spatial attention. Countries may be similarly represented on a mental spatial map (i.e., western countries on the left). However, we found no evidence that countries or digits induced an attentional shift.

(Cognitive Psychology - Attention)

II-038 Cognitive Control of Response Representations in a Response-Set Switching Task
Erina Saekix, Kyoto University
Yuki Tanida, Osaka University
Christopher Jarrold, University of Bristol
Simon Farrell, University of Western Australia
Satoru Saito, Kyoto University

To examine control processes for response representations, we required participants to judge the parity of digits with two alternating sets of response mappings. Changing the mapping diminished performance, and the deterioration could not be compensated for by preparation time. This implies that category-response mappings are less amenable to proactive control.

(Cognitive Psychology - Attention)

II-039 Cross-cultural differences in conflict monitoring
Jarang Kwakx, Department of Psychology, Pusan National University
Donghoon Lee, Pusan National University
Rebecca B Weldon, Department of Psychology, Juniata College
Myeong-Ho Sohn, The George Washington University

We compared Koreans and Americans in their Stroop task performance. In two experiments, Koreans did not show the sequential modulation of the conflict effect, while Americans demonstrated substantial modulation. These results indicate that conflict monitoring is subjected to attention deployment strategies that can be associated with different cultures.

(Cognitive Psychology - Attention)
II-040 Different Measures of Multitasking Performance Reveal Separate Cognitive Limitations
Alan C.N. Wong, Department of Psychology, The Chinese University of Hong Kong
Kelvin F. H. Lui, The Chinese University of Hong Kong

Does the ability to multitask come in only one type, or are there multiple skills involved? Exploratory factor analyses revealed three processing limitations underlying multitasking costs measured in different paradigms. Results will facilitate the comparison of multitasking ability between different populations and the development of multitasking training protocols.

(Cognitive Psychology - Attention)

II-041 Digits are Not Just Digits: Arabic Versus Roman Digits and Their Ability to Shift Attention
Paul Pürcher, University of Graz
Anita Kovacs-Harmat, University of Graz
Anja Ischebeck, University of Graz
Christof Körner, University of Graz
Margit Höfler, University of Graz

Previous research indicated that smaller arabic digits shift visuo-spatial attention to the left side and larger arabic digits to the right side. Using a spatial-cueing paradigm, we showed that this effect cannot be extended to roman digits, suggesting that roman digits might be processed differently as compared to arabic digits.

(Cognitive Psychology - Attention)

II-042 Do deviant sounds interfere with action plans? A new account of deviance distraction
Fabrice B. R. Parmentier, University of the Balearic Islands

Deviant sounds in an otherwise repetitive sequence of task-irrelevant sounds produce behavioral distraction in an ongoing task. Here I present new findings and a theoretical framework revealing the impact of deviant sounds on action plans and demonstrating how such sounds can hinder or facilitate responses in an ongoing task.

(Cognitive Psychology - Attention)
II-043 Driver inattention: relationships between attentional networks and propensity to commit errors while driving.  
Paulina E. Robalino Guerrax, UADE- CONICET  
Mariel F. Musso, National Research Council-CIIPME CONICET (Argentina)- UADE

The objective was to analyse the relationships between attention and the error proneness while driving. Sample: 70 drivers from Buenos Aires (Argentina). Findings provide evidence about the fundamental role of individual differences in executive attention and reaction times on specific dimensions of driving, and the mediating role of expertise.

(Cognitive Psychology, Other - Attention)

II-044 Females follow eye gaze of others regardless of the social power in dangerous situations.  
nazli altinx, University of Sheffield  
Danielle Matthews, University of Sheffield  
Megan Freeth, University of Sheffield

We investigated the influence of social power in dangerous situations on gaze following, and whether this differed according to gender. Findings suggested female participants were more likely to follow the gaze of others regardless of the social power. The gender of the gazer did not influence participants' gaze following behavior.

(Cognitive Psychology, Social Psychology - Attention)

II-045 Gaze-cueing effect by single eye: Nasal versus temporal shift  
Saki Takaox, Rissho university  
Aiko Murata, Waseda University  
Atsunori Ariga, Hiroshima University  
Katsumi Watanabe, Waseda University

The shift of one eye is sufficient to modulate the viewer's attention even when the other eye is kept straight. The present study demonstrated that this single-eye gaze-cueing effect is not determined solely by the presence and contingency of single gaze direction but also influenced by the context.

(Cognitive Psychology - Attention)

II-046 Building Interdisciplinary PBL Simulations: Promoting Student Learning
Scott W. Brown, University of Connecticut
Kimberly A Lawless, University of Illinois at Chicago

An interdisciplinary web-based PBL simulation of international negotiations is described - implemented from secondary grades through college. The simulation contains three phases: Research, Interaction and Debriefing, as teams play a country addressing the PBL scenario. Their goal is to reach an agreement among participating countries within a mediated environment.

(Political Psychology, Social Psychology - Educational Psychology)

II-047 Cognitive and non-cognitive factors: relationships and effects on Complex Problem Solving
Pablo C. González, UADE- CONICET
Mariel F. Musso, National Research Council- CIIPME CONICET (Argentina)- UADE
Maida Mustafic, University of Luxembourg
Samuel Greiff, University of Luxembourg
Eduardo C. Cascallar, KU Leuven

Recent educational and cognitive research have emphasized the importance of cross-curricular skills such as complex problem solving (CPS) not only for success in the school but also for success in life within modern societies. Objective: to analyze the relationships between cognitive processes, perseverance and openness on several dimensions of CPS.

(Cognitive Psychology - Educational Psychology)

II-048 Developing Students’ Writing Skills in Science through an Online Multiplayer Simulation
Scott W. Brown, University of Connecticut
Kimberly A Lawless, University of Illinois at Chicago
Christopher Rhoads, University of Connecticut
Sarah Newton, University of Connecticut
Lisa Lynn, University of Illinois at Chicago

GlobalEd2, a Problem-based Learning intervention combining classroom and online environments in a 12-week simulation of international negotiations among science advisors. Data demonstrates the impact of on students’ written argumentation scores. HLM of treatment/comparison groups (n=1818) demonstrated a significant effect on the students’ scores, with an effect size of 0.25 (p<.001).
II-049 Development of School Performance during Compulsory Education in Switzerland: Effects of Heritage Language and Socio-Economic Status

Urs Moser, University of Zurich
Jeannette Oostlander, University of Zurich
Martin J. Tomasik, University of Zurich

Trajectories of school achievement were investigated in a longitudinal sample of N = 1,970 students between grades 3 and 9 using standardized tests that were mapped on the same metric scale using IRT. Findings show that school achievement trajectories differ as a function of both heritage language and socio-economic status.

II-050 Does shared book reading between mother and infant improve the quality of their relationships?

Ayumi Sato, Kyoto University
Shoji Itakura, Graduate School of Letters, Kyoto University
Ichiro Uchiyama, Doshisha University

This study examined the effects of increasing shared mother-infant book reading frequency at home on their interactions by assigning to experimental (shared book reading) group or control group and observing their interactions before and after the intervention. The results suggested that shared book reading increases maternal praises and sensitivity.

II-051 Effectiveness of a School-Based Universal Program for Bullying Prevention: Considering the Extended Effects Associated with Achievement of the Direct Purposes of the Program

Katsuyuki Yamasaki, Naruto University of Education
Atsuko Umakoshi, Kokufu Elementary School
Kanako Uchida, Naruto University of Education

The current study examined the effectiveness of a school-based universal program for bullying prevention. Participants were third grade children in elementary schools in Japan. Results revealed that all the purposes of the program were achieved in the intervention group compared to the control group, along with several extended effects.
II-052 German Teachers’ Understanding of Violence: Associations with their Perception of Bullying, their Interventions, and Students’ Behaviour in Relational Bullying Situations.
Ludwig Bilz, Brandenburg University of Technology Cottbus-Senftenberg
No secondary authors

This study investigates the association between German teachers’ beliefs and student bullying. More precisely, we are interested in the impact of teachers’ understanding of violence on their perception of bullying, their intervention, and students’ behaviour in bullying situations.

II-053 Literacy practices in families of children with Down Syndrome: A Latin American study
Marcela Tenorio, Universidad de los Andes, Chile
Consuelo Reyes, Pontificia Universidad Catolica de Chile
Paulina S. Arango, Universidad de los Andes, Chile
Katherine Strasser, Pontificia Universidad Católica de Chile

In this work we reported data recollected using an on-line survey distributed in four countries in Latin-America (Chile, Argentina, Colombia and Mexico) about literacy home practice and future expectations in parents of children with Down Syndrome between 0 and 14 years old.

II-054 Managing Cognitive Load During Complex Learning: A Study on Worked Examples and Element Interactivity
Udita Gupta, University of Utah
Robert Zheng, Department of Educational Psychology, University of Utah

The study investigated three-way interaction between prior knowledge (low vs. high), format of worked examples (full or completion) and element interactivity (easy and difficult). The impact of these three variables were also studied in terms of cognitive load and motivation experienced by the learner.
II-055 Math Anxiety Is Related to Performance in Mathematics Beyond Individual Differences in Numerical Intelligence and Arithmetic Abilities: Insights from the German Adaptation of the Abbreviated Math Anxiety Scale (AMAS).

Frieder L. Schilling, Institute of Psychology, University of Graz, Austria
Stephan E. Vogel, Institute of Psychology, University of Graz, Austria
Jennifer Diedrich, Federal Academy of Lower Austria (Niederösterreichische Landesakademie), Austria
Roland H. Grabner, Institute of Psychology, University of Graz, Austria

The German adaptation of the Abbreviated Math Anxiety Scale (AMAS) was evaluated in a group of 228 university students. Results recommend the tool as a reliable and valid assessment of math anxiety (MA). Furthermore, MA was related to performance in mathematics beyond individual differences in numerical intelligence and arithmetic abilities.

II-056 Museum visiting experience in children: when art help citizenship

Claudia Annehin, University of Verona
Margherita Pasini, University of Verona
Rob Hall, Environmetrics Pty Ltd, Sydney, Australia

A pioneering study of museum visit benefits, enquiring the sensation of "being part of a Cultural Community" is presented. This term refers to individuals who enjoy museum spaces and contents, creating a collective debate about Cultural Heritage. The research aims to analyze children's negotiation skills improvement after the visit experience.

II-057 Reconciliation of Work, Study and Family, E-technologies and Recovery Experiences: A qualitative study

Claudia Andrade, College of Education, Coimbra

The aim of this research was to look at the role of e-technologies as a resource in the reconciliation of work, study, and family responsibilities for working student parents. A total of 12 working student parents participated in a semi structured interviews. Results
showed that overall the use of e-technologies made a difference to better cope with interrole conflicts.

(Social Psychology - Educational Psychology)

II-058 A Stereotype Content Model Approach to Perceptions of Black/White Interracial and Same-Race Couples
Kendal M Wongx, University of Illinois at Chicago
Daniel P. Cervone, University of Illinois at Chicago, USA

To understand the differential experiences and perceptions of those in same-race and interracial relationships, the present work examined stereotypes of targets in Black/White interracial and same-race couples. Results suggest that race of target and race of target’s partner have differential influences on participant’s perceptions across target genders.

(Social Psychology - Stereotyping and Prejudice)

II-059 A study of dehumanization in children from a metaphor-based approach
Alexandra Chasx, Universidad de La Laguna
Verónica Betancor, Universidad de La Laguna
Armando Rodríguez-Pérez, Universidad de La Laguna

The aim of the present research is to prove whether the tendency to associate human words with the in-group and animal words with the out-groups also occurs in children.

(Social Psychology - Stereotyping and Prejudice)

II-060 Brazilian Transgender and Gender Diverse People HIV-Related Healthcare Needs and Access Barriers
Angelo B. Costax, Pontifícia Universidade Católica do Rio Grande do Sul
Heitor Tomé da Rosa, Department of Psychology, Pontifícia Universidade Católica do Rio Grande do Sul
Paola F Pase, Department of Psychology, Pontifícia Universidade Católica do Rio Grande do Sul
Anna Martha V Fontanari, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)
Ramiro F Catelan, Department of Social Psychology, Universidade Federal do Rio Grande do Sul
Andressa V Mueller, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto
Alegre (HCPA)

Dhiordan Cardoso, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)

Bianca F Soll, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)

Karine Schwarz, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)

Maiko A Schneider, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)

Daniel Augusto M Gagliotti, Transdisciplinary Gender Identity and Sexual Orientation Service (AMTIGOSNUFOR), Hospital de Clinicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP)

Alexander Saadeh, Transdisciplinary Gender Identity and Sexual Orientation Service (AMTIGOSNUFOR), Hospital de Clinicas da Faculdade de Medicina da Universidade de São Paulo (HCFMUSP)

Maria Inês R L, Gender Identity Program (PROTIG), Hospital de Clinicas de Porto Alegre (HCPA)

Henrique C Nardi, Department of Social Psychology, Universidade Federal do Rio Grande do Sul (UFRGS)

Silvia H. Koller, Department of Psychology, Universidade Federal do Rio Grande do Sul, Brazil

This study analyzes HIV-related healthcare needs of and access barriers for Brazilian transgender and gender nonconforming people.

(Social Psychology, Other - Stereotyping and Prejudice)

II-061 Categorization of ambiguous faces as human or animal: the role of gender.

Ramón Rodríguez-Torres, Universidad de La Laguna

Elena Delgado, Universidad de La Laguna

Alexandra Chas, Universidad de La Laguna

Paula Hernández-Reyes, Universidad de La Laguna

Laura Rodríguez-Gómez, Universidad de La Laguna

The aim of this study was to analyse the role of gender in the categorization of ambiguous faces as humans or animals.

(Social Psychology - Stereotyping and Prejudice)

II-062 Cultural Symbols of Bias Motivation

Edward W Dunbar, Pacific Psychological Associates

No secondary authors
Given the difficulty in prosecuting hate crimes due to free-speech rights in the United States and the need to know the motivation behind the crime, the evolution of laws that govern the prosecution of a hate (or bias-motivated) crimes and their relationship to acts of domestic terrorism will be presented.

(Clinical Science, Social Psychology - Stereotyping and Prejudice)

II-063 LGB People’s Support for Transgender Rights: Effect of LGB Group Discrimination and its Mechanism
Eddie S. K. Chongx, University of Maryland–College Park
Jonathan J. Mohr, University of Maryland–College Park

Lesbian, gay, and bisexual (LGB) individuals and transgender individuals share common experiences of prejudice related to gender and sexuality. The study examines whether and how discrimination expectations among LGB people may influence their support for transgender rights—a topic that advances understanding of coalition building for social change.

(Social Psychology, Personality/Emotion Psychology - Stereotyping and Prejudice)

II-064 Observed microaggressions predict lower engineering identification among women in engineering group project teams
Denise Sekaquaptewax, University of Michigan
Lorelle A. Meadows, Michigan Technological University
Jakob Williams, University of Michigan

Behavioral manifestations of gender stereotypes – microaggressions – were tested as a contributor to gender differences in engineering identification. 58 engineering students were videorecorded as they worked on engineering projects. Their interactions were scored for microaggressions by independent judges. Results showed that observed microaggressions predicted lower engineering identification among women, not men.

(Social Psychology, Teaching - Stereotyping and Prejudice)

II-065 Representations of refugees: linguistic abstractness, essentialism and stereotyping. Language and social cognition approaches.
Eleni Lipourlxlx, University of the Aegean, Rhodes, Greece
Antonis Gardikiotis, Aristotle University of Thessaloniki, Greece
Two studies examined the relationship between the use of various levels of abstract language and essentialist beliefs about refugees. Also, how these beliefs are related to stereotype content, especially its fundamental dimensions of warmth and competence. Abstract language moderated the relationships among essentialism, warmth, emotions and behavioural intentions.

(Cognitive Psychology, Social Psychology - Stereotyping and Prejudice)

II-066 Social Dominance Orientation and Perceived Discrimination in Gender Context
Abdulkadir Kuzlakx, Middle East Technical University
Burcu Çuvas, TED University
Nuray Sakalli-Ugurlu, Middle East Technical University

Current study aimed to understand how social dominance orientation and perceived discrimination is related for different genders. Decreased perceived discrimination is associated with increased social dominance orientation for women whereas, increased perceived discrimination is associated with increased social dominance orientation for men. Results are discussed from system justification perspective.

(Social Psychology - Stereotyping and Prejudice)

II-067 Computational Measurements of Communication Dynamics in Autism
Veronica Romerox, University of Cincinnati
Paula Fitzpatrick, Assumption College
R. C. Schmidt, College of the Holy Cross
Michael J. Richardson, University of Cincinnati

Recent advances in the quantitative and computational measurement of conversational content has resulted in a novel set of methods that provide a more objective and reliable way of identifying the conversational biomarkers of autism and a better understanding of the time-evolving dynamics of social communication in these individuals.

(Other, Clinical Science - Embodied Cognition)

II-068 Concurrent Actions Change the Level of Construal of Action Sentence Understanding
Omar Escámez, Mind, Brain, and Behavior Research Center, University of Granada, Spain
Andrea Flumini, Mind, Brain, and Behavior Research Center, University of Granada, Spain
Spain

Gabriella Vigliocco, Deafness, Cognition and Language (DCAL), University College London, United Kingdom
Daniel Casasanto, Dept. of Psychology, University of Chicago, USA
Julio Santiago, Mind, Brain, and Behavior Research Center, University of Granada, Spain

Embodied theories propose that language comprehension requires detailed mental simulations. Here, we show that repetitive motor action with hands or feet selectively changes the level at which descriptions of actions of the same effector are construed. Meaning construction results from a balance between perceptuo-motor and multimodal areas.

(Cognitive Psychology, Neuroscience - Embodied Cognition)

II-069 Does the Habitual Reading and Writing Direction Affect the Aesthetic Appreciation of Photography?
Sobh Chahbounx, Dept. of Language and Literature, Norwegian University of Science and Technology, Norway
Andrea Flumini, Mind, Brain, and Behavior Research Center, University of Granada, Spain
Carmen Pérez González, Interdisciplinary Centre for Science and Technology Studies, Bergische Universität Wuppertal, Germany
I. Chris McManus, Dept. of Clinical, Educational, and Health Psychology, University College London, UK
Julio Santiago, Mind, Brain, and Behavior Research Center, University of Granada, Spain

Spanish participants preferred photographs with a left to right directionality over those with right to left directionality, whereas Moroccans showed the opposite preference. This bias did not interact with sex of the model. The results have implications for current models of lateral biases in visual depictions.

(Cognitive Psychology, Cognitive Anthropology - Embodied Cognition)

II-070 Gestures and Mental Models
Maura Austinx, University of Central Florida
Michele Gill, University of Central Florida
Valerie Sims, University of Central Florida

Researchers have speculated that gestures communicate information that is not provided in purely verbal communication. To test this, we examined the effects of
gesture-watching on watchers’ cognitive load. We found no evidence that gestures communicate any additional information or support mental model development. The results have implications for cognitive psychology as well as educational psychology.

(Cognitive Psychology, Teaching - Embodied Cognition)

II-071 **Imaginistic Representation for Intrinsic and Extrinsic Features of Events**

*María Noel Macedox, Center for Basic Research on Psychology*
*Johnny Rodríguez, Center for Basic Research on Psychology*
*Roberto Aguirre, Center for Basic Research on Psychology*

Space is a ground domain for imaginistic representations. When processing event’s time on a lateral mental timeline, a scheme-time interaction was registered: shorter latencies for horizontal events on future than on past. Results suggest a matching between the prospective profile of the future and lateral axis for mental timeline.

(Cognitive Psychology, Linguistics - Embodied Cognition)

II-072 **Interpersonal visuo-tactile stimulation enhances emotional contagion**

*Ilaria Minio Paluello, IRCCS Fondazione Santa Lucia, SCNLab Department of Psychology, Sapienza University of Rome*
*Marco Gandolfo, Sapienza University of Rome*
*Sarah Boukarras, Sapienza University of Rome*
*Giuseppina Porciello, 1. Department of Psychology, Sapienza, University of Rome; 2. Social and Cognitive Neuroscience Laboratory, IRCCS, Santa Lucia Foundation, Rome, Italy;*

Simple synchronous visuo-tactile stimulation of self and of another person’s face is able to enhance facial mimicry, an emotional contagion response to the emotions experienced by another person. Such effect is stronger for highly empathic individuals and necessitates the observed emotion to be considered realistic.

(Neuroscience, Personality/Emotion Psychology - Embodied Cognition)

II-073 **Joint Simon Effect in Romantic Relationship: Support for the Self Expansion Model of Love**

*Virginie QUINTARDx, Centre de Recherches sur la Cognition et l'Apprentissage (UMR CNRS 7295), University of Poitiers*
*Stéphane JOUFFRE, Centre de Recherches sur la Cognition et l'Apprentissage (UMR CNRS 7295), University of Poitiers*

(Cognitive Psychology, Teaching - Embodied Cognition)
Jean-Claude CROIZET, Centre de Recherches sur la Cognition et l'Apprentissage (UMR CNRS 7295), University of Poitiers
Cédric A BOUQUET, Centre de Recherches sur la Cognition et l'Apprentissage (UMR CNRS 7295), University of Poitiers

The present study tested the influence of romantic relationship vs. friendship on the Joint Simon Effect (JSE) – indexing the inclusion of the other in the self. The JSE was larger when performing the task with the beloved vs. with a friend, providing empirical evidence for the self-expansion model of love.

(Cognitive Psychology, Social Psychology - Embodied Cognition)

II-073 REActivity - Autism in Sync: Supporting communication in children with ASD
Grazia Ragonex, University of Sussex
No secondary authors

The system REActivity exploits and integrates advanced achievements in the field of sound computing with behaviour measurement through log data. The aim has been to investigate movement patterns in children with autism and its potential therapeutic value in addressing cognitive, behavioural, social and communicative aspects of autism.

(Developmental Psychology, Methodology - Embodied Cognition)

II-074 Matching Matchboxes: Co-actors Create Non-conventional Communication Systems for Joint Action
Cordula Vesperx, Central European University
Tiffany Morisseeau, Central European University
Günther Knoblich, Central European University
Dan Sperber, Central European University

We investigated how non-conventional communication systems are created in joint action. Results from two experiments, in which a knowledgeable co-actor informed a partner about object categories, suggest that marking object categories ostensively may be crucial for establishing successful communication.

(Cognitive Psychology, Cognitive Anthropology - Embodied Cognition)

II-075 Mirroring and Non-Mirroring: Special Cases of the Same Phenomenon?
Galit Shahamx, The Hebrew University of Jerusalem
Hillel Aviezer, The Hebrew University of Jerusalem

Alongside the well-known mirroring phenomena, "non-mirroring" also exists. We show that both mirroring and non-mirroring show very similar characteristics, suggesting that they share the same mechanism. Our findings question the special significance of mirroring and call for investigation of the role both mirroring and non-mirroring play in social cognition.

(Cognitive Psychology, Social Psychology - Embodied Cognition)

II-076 Mental and Physical Wellbeing: Testing Causal Pathways with Mendelian Randomisation
Robyn E. Woottonx, University of Bristol
Oliver S.P. Davis, University of Bristol
Claire M.A Haworth, University of Bristol

Observational evidence suggests a bi-directional association between mental and physical wellbeing. Research suggests high mental wellbeing predicts better cardiovascular health, immune functioning and a healthier BMI, as well as better health predicting greater wellbeing. This study used Mendelian Randomisation to investigate whether or not these associations are causal.

(Behavioral Genetics - Well-Being)

II-077 Coping, Affect, and Satisfaction with Life among Female Military Spouses
Mei-Chuan Wangx, Fayetteville State University
Anne-Marie W Harcrow, Fayetteville State University
Angela Spears, Fayetteville State University

Data from 221 female military spouses indicated that task-oriented and avoidance-oriented coping strategies indirectly increases satisfaction with life through positive association with positive affect and negative association with depressive symptoms. Emotion-oriented coping indirectly reduced satisfaction with life through negative association with positive affect and positive association with depressive symptoms.

(Personality/Emotion Psychology, Clinical Science - Well-Being)

II-078 Does Living in a Scenic Environment Matter for Wellbeing in Adolescence?
Abigail L. Mottershawx, University of Bristol
Oliver S.P. Davis, University of Bristol
Claire M.A Haworth, University of Bristol

Living in an environment of high natural beauty is associated with many positive outcomes in adults, though little is known about the effect in adolescence. We investigated the link between scenic environments and wellbeing using data from over 10,000 16-year-olds and show that scenic environments affect ratings of life satisfaction.

(Social Psychology, Personality/Emotion Psychology - Well-Being)

II-079 Finding Healers Within: 2 Pilot Reports for Mind-Body Compassion Intervention for Healthcare Professionals
Sunny Y. Alperson, Old Dominion University
Lea Lee, Old Dominion University, Dept of Taching and Learning
Jay R Alperson, Emeritus Professor, Dept of Behavioral Science, Psychology
Sandra Wawrytko, San Diego State University, Department of Philosophy

The poster will introduce a mind-body integrated compassion training as a potential self-care tool for the well-being of healthcare professionals. The intervention consists of four compassion mantras and seven easy Taichigong movements. Two studies that tested the intervention in an educational and a clinical setting have shown significant positive results.

(Clinical Science - Well-Being)

II-080 How people differ in experience structure during professional activity depending on their personality
Alexey Bondarenko, Branch of Lomonosov Moscow State University in Tashkent
Olga Mitina, Lomonosov Moscow State University, Moscow, Russia

Supposed that specific of professional activity determine structure of relations between subjective experience (flow, engagement etc.) and personal characteristics of specialists in work and leisure activity. It was verified for sample of theatre's actors, athletes and programmers within the framework of positive psychology.

(Industrial/Organizational Psychology, Personality/Emotion Psychology - Well-Being)

II-081 Psychological Well-Being and its Linguistic Correlates Among Russian Facebook Users
Polina Panichevax, Saint Petersburg State University, Russia
Yanina Ledovaya, Saint Petersburg State University, Russia
Roman Tikhonov, Saint Petersburg State University, Russia
Olga Bogolyubova, Clarkson University

We investigated the association between psychological well-being (WHO-5) and linguistic features of the publicly available posts among 1,972 Facebook users. The use of negative words and impersonal predicates was negatively correlated with psychological well-being. There were no significant correlation between well-being and positive words.

(Personality/Emotion Psychology, Linguistics - Well-Being)

II-082 Rehabilitation Psychology. A missing link in current Danish practices
Chalotte Glintborgx, Aalborg University
Tia Hansen, Aalborg University

Psychological support may be a missing link in neurorehabilitation. Therefore, based on this research, we have developed a new master programme, Clinic for Handicap and Rehabilitation Psychology (CHaRe), at the Department of Communication and Psychology at Aalborg University. CHaRe aims at qualifying students for future work as rehabilitation psychologists.

(Personality/Emotion Psychology - Well-Being)

II-082 The Presence of Other People and Inferences on the Attraction to Goods
Masayo Nodax, Kinjo Gakuin University
Joanna Roszak, University of Social Sciences and Humanities

The goal of this study is to examine how the presence of other people can influence our inferences of a target’s attraction for goods and compare that among different cultures. The results revealed that the existence of other people in evaluating goods has an interactional effect between culture and gender.

(Social Psychology, Consumer Behavior - Culture)

II-083 Adult Attachment Dimensions and Well-Being: Exploring the Role of Experiential Avoidance as a Mediator of the Relationship Between Attachment and Well-Being
Evangelos D. Panousopoulos, Deree - American College of Greece
In the present study it was found that insecure attachment dimensions were positively associated with lower levels of well-being and higher levels of experiential avoidance. Experiential avoidance was positively linked with lower levels of well-being, and partially mediated the relationships of each attachment dimensions with life satisfaction and overall well-being.

(Personality/Emotion Psychology, Clinical Science - Well-Being)

II-084 A Cross-Cultural Analysis of Adversity and Behavioral Outcomes
Brian Sanchezx, University of California, Riverside
No secondary authors

Participants from 21 countries described a situation they experienced at 7pm of the previous day. Afterwards they completed two Q-Sorts, one assessing psychological characteristics of situations and another assessing their behavior. Results showed individuals behaved similarly when experiencing situations of sociality. When experiencing adversity, they behaved in diverse ways.

(Personality/Emotion Psychology - Culture)

II-085 Construction and Validation of Altruism Index in a Hybrid Society
Qijin Chengx, University of Hong Kong
Chi-Leung Kwok, University of Hong Kong
Forrest Cheung, University of Hong Kong
Paul Yip, University of Hong Kong

The present study documented the construction and validation of an Altruism Index (A-Index) in Hong Kong context. A 10-item four-dimension model was derived from an expert panel review, a large sample survey, and a series of qualitative studies. The constructed A-Index is shown to be a valid tool to measure altruism in Hong Kong.

(Social Psychology - Culture)

II-086 Cultural differences when judging if difficult questions are possible to answer
Bodil S. A. Karlsson, University of Gothenburg  
Carl Martin Allwood, University of Gothenburg

When asked about difficult knowledge questions and color judgments Swedish participants more often think that “nobody can answer that question” compared to Chinese and Indian participants.

(Cognitive Psychology, Cognitive Anthropology - Culture)

II-087 Cultural mode of self: An ERP investigation of positive and negative information among Japanese.  
Mayumi Karasawa, Tokyo Woman's Christian University  
Aya Kamikubo, Tokyo Woman's Christian University  
Shinobu Kitayama, University of Michigan

To understanding the process of cultural self, we recorded event-related potentials (ERP) from Japanese participants while they read vignettes of self- or other-relevant information in positive or negative events and judged self-esteem. Early ERP components were biased in the direction of negative polarity for negative (vs. positive) events.

(Social Psychology - Culture)

II-088 Cultural values, social support, and happiness: Examining the influence of gender  
Dana Donohue, Northern Arizona University

Happiness as influenced by cultural values, social support, predictor interactions, and gender differences was examined. For males, collectivism, familism, and social support predicted happiness. Interactions were also found. For females, collectivism, familism, and social support satisfaction predicted happiness. The differing patterns of main effects, interactions, and implications are discussed.

(Developmental Psychology - Culture)

II-089 Culturally responsive psychology education: Outcomes of the Australian Indigenous Psychology Education Project (AIPEP)  
Pat Dudgeon, University of Western Australia  
Sabine W Hammond, Australian Psychological Society
The gap between Indigenous and non-Indigenous mental health and wellbeing is a national emergency in Australia. This poster reports on the curriculum framework and principles developed by the Australian Indigenous Psychology Education Project (AIPEP) with the aim to increase the cultural competence and responsiveness of psychologists working with Indigenous peoples.

(Clinical Science - Culture)

II-090 **Culture, temporal information focus, and self-continuity**

**Li-Jun Jix**, Queen’s University  
**Emily Hong**, Queen’s University  
**Tieyuan Guo**, University of Macau  
**Zhiyong Zhang**, Beijing University  
**Yanjie Su**, School of Psychology and Cognitive Science, Beijing Key Laboratory of Behavior and Mental Health, Peking University.  
**Ye Li**, Central China Normal University

Four cross-cultural studies showed that, compared to Euro-Canadians, Chinese participants were more likely to attend to both past and future, indicating their greater temporal information focus. Chinese participants also reported greater self-continuity than Euro-Canadians. Temporal information focus mediated the effect of culture on self-continuity.

(Social Psychology - Culture)

II-091 **“We are Bound to Live Together”: Investigating Gender Dynamics in Ejagham Discourse.**

**COMFORT OJONGNKPOTx**, UNIVERSITY OF BUEA, CAMEROON  
No secondary authors

While earlier studies had perceived gender as a social construct that draws a line between the sexes, thus highlighting the Deficit, Dominance and Difference Approaches, considering gender as sex-binary, the present study departs from that
stance and reveals that the Ejagham language engenders parity among the sexes, thus encouraging communality.

(Linguistic Anthropology, Linguistics - Gender Studies)

II-092 A Comparison of Gender Differences in Self-efficacy for Four Different STEM Majors and English
Sylvia Beyer, University of Wisconsin, Parkside
Hannah Yonke, University of Wisconsin-Parkside

We examined women’s underrepresentation in Science, Technology, Engineering, and Math (STEM) majors. We compared undergraduates’ self-efficacy, performance, and accuracy of post-performance self-evaluations in four STEM fields to each other and a control major, English. We found that females underestimated their STEM and English test performance significantly more than males did.

(Social Psychology - Gender Studies)

II-093 A Content Analysis of Gender Representations in Preschool Television
Abigail Walsh, University of California, Santa Cruz
Campbell Leaper, University of California, Santa Cruz

We conducted a content analysis of gender representations in television programs for preschool-age children. Three episodes of 34 shows were coded for number characters, speech variables, and activity variables using time sampling. All significant gender comparisons had large effect sizes. Whether shows had female or male lead characters moderated effects.

(Developmental Psychology - Gender Studies)

II-094 Analysis of Aircraft Accidents by Gender
Robert Walton, Embry-Riddle Aeronautical University Worldwide
Michael Politano, ABPP

Analysis of Aircraft Accidents by Gender Using the NTSB database to 2014, differences in primary accident event codes were examined for male and female pilots. Findings suggested male pilots were likely to have accidents involving poor planning while female pilots were likely to have accidents dealing with mishandling of the aircraft.
II-095 **Breaking Gender and Heterosexuality Norms Predicts Positive Attitude Towards Gender-Neutral Pronoun in Swedish**

Hellen P. Vergoossen, Stockholm University  
Emma A Bäck, Gothenburg University, Department of Psychology  
Anna Lindqvist, Lund University  
Marie Gustafsson Sendén, Stockholm University

The gender-neutral pronoun ('hen') introduced into Swedish a few years ago evokes both positive and negative attitudes. In this study, different forms of non-normativity were found to predict a positive attitude towards 'hen', such as self-chosen non-binary pronoun, having a non-heterosexual orientation, and having a less pronounced gender identity.

(Social Psychology - Gender Studies)

II-096 **Could ‘hen’ reduce the gender bias in the Swedish language?**

Anna Lindqvist, Lund University  
Emma A Bäck, Gothenburg University, Department of Psychology  
Marie Gustafsson Sendén, Stockholm University

We examine if the Swedish gender-neutral third-person pronoun ‘hen’, existing parallel with the pronouns representing ‘she’ and ‘he’, reduces gender bias in language. Our results show that ‘hen’ is perceived as gender-neutral compared to other “neutral” paraphrases, which are associated with masculinity or, if the context is feminine, with femininity.

(Social Psychology, Linguistics - Gender Studies)

II-097 **Can ability evaluations by teachers and perceived teachers’ ability evaluations explain gender differences in math-specific self-concept?**

Katharina Kriegbaum, Heidelberg University  
Ricarda Steinmayr, TU Dortmund  
Birgit Spinath, Heidelberg University

This study investigated the role of ability evaluations by teachers and perceived teachers’ ability evaluations (PAE) explaining gender differences in math-specific self-concept in elementary school. In a longitudinal model, we found direct effects from prior
ability evaluations by teachers and PAEs on subsequent self-concepts explaining those gender differences.

(Cognitive Psychology, Teaching - Self Concept)

II-098 Diffusion Model Analysis of Age Group Effects on Implicit Self-Esteem
Bartosz Gulax, Universität Klagenfurt, Institut für Psychologie
Rainer W Alexandrowicz, University of Klagenfurt, Department of Psychology

In two studies we used the Diffusion Model to investigate age-related differences in two implicit measures of self-esteem: Standard and Single-Block IAT. We found lower drift rates, higher response thresholds, and higher nonresponse times for (1) the incompatible relative to compatible IAT conditions and (2) older compared to younger participants.

(Cognitive Psychology, Social Psychology - Self Concept)

II-099 Event-related Potentials Associated with Self-referential Processing of Another Person's Face
Mateusz Wozniakx, Central European University
Dimitrios Kourtis, Central European University
Günther Knoblich, Central European University

We run two EEG experiments with a modified self-prioritization paradigm. We associated faces of unfamiliar people with the self, friend, and stranger. We found that presentation of a self-associated stimuli leads to faster processing of the subsequent stimulus, regardless of its association and form, and elicits stronger central-parietal P3.

(Cognitive Psychology, Neuroscience - Self Concept)

II-100 Here and There – How Imagining the Self in Time and Space Affects Well-being
Corinna Michelsx, University of Cologne
No secondary authors

Previous research on mental simulation has often confounded temporal (imagining the self in future) with spatial changes (imagining to be somewhere else). Differentiating both forms more accurately, a first study showed that pure spatial as opposed to temporal imagination increases psychological and subjective well-being. Study 2 partially replicated this effect.
II-101 How People Fused with a Group See Themselves? Self-construals and Personal and Group Identity Fusion
Tomasz Bestax, University of Gdansk
No secondary authors

Four studies analyzed self-perception of people highly fused with a group (N1=244, N2=164, N3=166, N4=796). High identity fusion was described by (a) high results for interdependent and independent self-construal; (b) simultaneously high agency and communion; and (c) a strong desire for self-verification at the group and personal levels of self-description.

II-102 Interdependent Self-Construal predicts the illusory feeling of ‘owing another person’s face’ via other-oriented traits
Giuseppina Porciello, 1. Department of Psychology, Sapienza, University of Rome; 2. Social and Cognitive Neuroscience Laboratory, IRCCS, Santa Lucia Foundation, Rome, Italy;
Ilaria Minio Paluello, IRCCS Fondazione Santa Lucia, SCNLab Department of Psychology, Sapienza University of Rome
Lucia Mannetti, Department of Psychology of Developmental and Socialization Processes, Sapienza, University of Rome
Ilaria Bufalari, Department of Psychology of Developmental and Socialization Processes, Sapienza, University of Rome

This study explores how inter-individual differences in self-construal, namely how individuals define the self in relation to others, determine the susceptibility to ‘enfacement’, the illusion of merging one’s with others’ face following synchronous visuo-tactile stimulation. Results indicate that interdependent self-construal predicts the strength of enfacement via other-oriented traits.

II-103 Adult Attachment Theory: Evidence of construct validity and analysis of the invariance
Erika M. Arias, University of Barcelona
Carmen E. Navia, Universidad Nacional de Colombia
This poster presents evidence of construct validity about the theory of Adult Attachment proposed by Hazan & Sharver (1987), through psychometric analysis and differential item functioning (DIF) in an application of the scale of adult attachment ASS (Collins & Read, 1990) in a sample of Colombian adults.

(Clinical Science - Assessment)

II-104 **Categories of Play Activities on the Developmental Play Assessment**  
**Rachel Ruahx**, Northeastern University, USA  
**Ashley Cameron**, Northeastern University, USA  
**Emanuel J. Mason**, Northeastern University, USA  
**Karin Lifter**, Northeastern University, USA  
**Takuya Minami**, University of Massachusetts at Boston

Categories of play activities on the Developmental Play Assessment (DPA) in 457 children with and without developmental delays between the ages of 8 to 60 months and the emergence of sequences and substitutions in their play are described.

(Developmental Psychology - Assessment)

II-105 **Dynamic multidimensional assessment and measurement of mindfulness attention.**  
**Vincent M. Cicconix**, University of Melbourne

Dynamic multidimensional assessment and measurement of mindfulness attention. In modern psychological science the use of sound measurements is of vital importance. This paper reviews important methods and practices in mindfulness assessment measuring attention under various conditions.

(Personality/Emotion Psychology, Neuroscience - Assessment)

II-107 **Horizontal Relationship for A Better Environmental Activity: A Case Study on Collaborative Activities between SPES and Local Residents in Austria**  
**Shino Kodax**, Tokyo University of Social Welfare

Based on the results of the case study conducted in SPES Zukunftsakademie, Austria, this research suggests that horizontal relationship based on the mutual trust between a
principal as a promoter of an environment-oriented norm and the participants is essential for a better environmental activity.

(Social Psychology - Environmental Psychology)

II-108 Influence of Lighting Color Temperature on Effort-Related Cardiac Response
*Ruta Lasauskaitė*, *Psychiatric Hospital of the University of Basel*
*Christian Cajochen*, *Psychiatric Hospital of the University of Basel*

Here we proposed that higher color temperature of light should reduce mental effort intensity. We tested mental effort-related cardiac response under four lighting conditions and found, as predicted, that cardiac reactivity decreased with increasing color temperature of light.

(Biological Psychology - Environmental Psychology)

II-110 Map learning in older adults: the role of individual visuo-spatial factors
*Veronica Muffato*, *University of Padova*
*Chiara Meneghetti*, *University of Padova*
*Erika Borella*, *University of Padova, Italy*
*Rossana De Beni*, *University of Padova*

The poster analyzes the age-related differences in map learning between young and normally-aging young-old and old-old adults in relation to individual visuo-spatial factors (visuo-spatial working memory, rotation abilities, strategies). The poster will present the study's theoretical framework, method, and results. Overall, individual visuo-spatial factors support map learning, even in aging.

(Cognitive Psychology - Environmental Psychology)

II-111 Attitudes Towards Uncommitted Sexual Activity, Desire, and Adult Attachment Style
*Robert W. Moeller*, *Middlebury College*
*Martin Seehuus*, *Middlebury College*
*Ilana Gratch*, *Middlebury College*
*Paige Guarino*, *Middlebury College*

This study explored the relationship between adult attachment styles and desire and attitudes towards uncommitted sexual behavior, using the Bartholomew measure of
adult attachment styles. Significant findings support a model of adult attachment that differentiates between avoidant-dismissing and avoidant/fearful attachments for understanding relations between attachment and sexual desires and attitudes.

(Clinical Science, Developmental Psychology - Sexuality/Sexual Behavior)

II-112 Consensual sexual nonmonogamy, extradyadic sex, and relationship satisfaction

Diniz Lopesx, ISCTE-Instituto Universitário de Lisboa
David Rodrigues, ISCTE-IUL, CIS-IUL / Goldsmiths, University of London
Marco Pereira, Faculty of Psychology and Educational Sciences, University of Coimbra

We examined whether consensual sexually non-monogamous relationships moderate the association between sociosexuality and relationship satisfaction in a sample of heterosexuals using a dating website. Results showed a negative association between sociosexuality and satisfaction, yet moderated by sexual agreement: while monogamous relationships showed this negative association, it was positive for non-monogamous relationships.

(Social Psychology - Sexuality/Sexual Behavior)

II-113 Is Sociosexuality Negatively Associated With Relationship Functioning?

David Rodriguesx, ISCTE-IUL, CIS-IUL / Goldsmiths, University of London
Diniz Lopes, ISCTE-Instituto Universitário de Lisboa
Carrie Veronica Smith, University of Mississippi

We examined the sociosexuality and relationship quality association according to (non)monogamy. Study 1 found the association between sociosexuality and extradyadic sex emerged only for less committed individuals. Study 2 showed that non-monogamous (vs. monogamous) individuals were the most sociosexually unrestricted, but showed no differences in relationship quality.

(Social Psychology - Sexuality/Sexual Behavior)

II-114 Sexual assaults on university campus: Is a problem in Argentina?

Santiago Resettx, UADE/Universidad Argentina de la Empresa
Santiago Reset, UADE/Universidad Argentina de la Empresa

The present study aims to explore the incidence of sexual assaults in Argentina. Results showed that a 4% of student suffered sexual assault at least one time. The attacks
ranged from persistent sexual advances or sexual messages made by text or social medias to be touched in a sexual manner.

(Social Psychology, Developmental Psychology - Sexuality/Sexual Behavior)

II-115 New meta-research on the validity of the digit ratio (2D:4D) biomarker for prenatal androgen action
Martin Voracekx, University of Vienna
Michael Kossmeier, University of Vienna
Ulrich S Tran, University of Vienna

The influential claim that finger-length patterns (digit ratio, 2D:4D) constitute a valid retrospective biomarker for prenatal androgen action has meanwhile led to 1200 journal publications. However, meta-analytic organization of the evidence indicates that the actual validity status of 2D:4D is notably weaker and more uncertain than stated in the literature.

(Biological Psychology, Methodology - Psychobiology)

II-116 Social exclusion can modulate profiles of gut microbiome in human
Dong-Mi Shin, Department of Food & Nutrition, Seoul National University, Seoul
Yunju Jeong, Department of Food & Nutrition, Seoul National University, Seoul
Go Eun Shin, Department of Psychology, Chungnam National University, Daejeon
Soomi Kim, Department of Psychology, Chungnam National University, Daejeon
Woo Young Chun, Department of Psychology, Chungnam National University, Daejeon

The profiles of gut microbiome in individuals with psychological pain due to social exclusion were analyzed. It is found that the ratio of Bacteroidetes to Firmicutes was lower in the group of social exclusion than that of control group, although there was no difference in their dietary pattern between the two groups.

(Biological Psychology, Social Psychology - Psychobiology)

II-117 Social functioning of children and adolescents after resection of craniopharyngioma - does lack of vasopressin matter?
Agnieszka Maryniak, University of Warsaw
Agnieszka Ondruch, Children's Memorial Health Institute
Iga Jurowska, University of Warsaw
Whether the vasopressin deficiency (neuropeptide involved in regulation of retention of water, but also regulation of social behavior) could be a significant factor in social functioning and some psychopathological symptoms observed in patients after surgery of craniopharyngioma (rare tumor of the central region of the brain)?

(Biological Psychology, Neuroscience - Psychobiology)

II-118 The Effects of Testosterone on the Psychological, Physiological, and Behavioral Stress Response
Hana H. Kutlikovax, University of Vienna, Vienna, Austria
Jaroslava Durdiaková, Comenius University, Bratislava, Slovak Republic
Igor Riecansky, University of Vienna, Vienna, Austria and Slovak Academy of Sciences, Bratislava, Slovakia
Bernhard Wagner, FH JOANNEUM Ltd, Graz, Austria
Christoph Eisenegger, Neuropsychopharmacology & Biopsychology Unit, Department of Basic Psychological Research and Research Methods, Faculty of Psychology, University of Vienna

Sex differences in the human stress response may be due to the inhibitory effects of the hypothalamic-pituitary-gonadal axis’s primary product testosterone, but causal evidence in support of this is lacking. We report the effects of single-dose testosterone administration on neurophysiological and hormonal indices of physiological and social-evaluative stressors.

(Biological Psychology - Psychobiology)

II-119 The Effects of Cognitive Load on Cerebral Blood Flow During Moderate Exercise
Samantha B. Douglasx, Azusa Pacific University
Michelle Farve, Dept of Pharmacology, Physiology & Neuroscience, Rutgers Biomedical Health Sciences, Newark, NJ, USA
Lauren Arratia, Azusa Pacific University
Arlene Reynoso, Azusa Pacific University
Scott J Wood, Azusa Pacific University
Jorge M Serrador, Dept of Pharmacology, Physiology & Neuroscience, Rutgers Biomedical Health Sciences, Newark, NJ, USA; War Related Illness and Injury Study Center, Department of Veterans Affairs, NJ Healthcare System, East Orange, NJ, USA

The present study examined the effects of acute moderate exercise on cognitive performance (single and dual-tasking) and cerebral blood flow velocity. A significant effect of walking speed on reaction time measures was observed. An overall effect of tasking type on mean cerebral blood flow velocity was also found.
II-120 Adjusting without belonging: Experiences of Frequent Moves during Childhood and Adolescence  
Noam Tamirx, University of Haifa  
Nurit Gur-Yaish, Oranim Academic College of Education  
Hadas Wiseman, University of Haifa

We explored recollections of the experience of frequent moves during childhood and adolescence in children of former military personnel ("Air force children"). Based on in-depth interviews with these children in emerging adulthood we found a picture of positive adjustment to the frequent moves alongside difficulties in a sense of belonging.

(Developmental Psychology, Personality/Emotion Psychology - Qualitative Methods)

II-121 Forms of subjectivation: Generation Y and the contemporaneity  
André Verzonix, PUCRS  
Carolina Lisboa, Pontifícia Universidade Católica do Rio Grande do Sul

This empirical article is a result of a qualitative, exploratory and cross-sectional research in which we investigate the forms of subjectivation of the young people of Generation Y. Though the concept that seeks to describe the contemporary youth disregards some specificities, it can be useful as a base that can unravel new subjectivities.

(Social Psychology, Personality/Emotion Psychology - Qualitative Methods)

II-122 Understanding Child Abuse Through the Eyes of the University Students Who have Participated Youth Disseminating Life Skills Program  
M. Rita Krespix, Psychology Department, Kadir Has University  
Irem Akduman, Golge Psychological Counselling Centre  
Ceren Acarturk, Psychology Department, Sehir University  
Figen Sahin Dagli, Faculty of Medicine, Department of Pediatrics, Gazi University  
Tolga Dagli, Medical Faculty, Department of Pediatric Surgery, Marmara University

This study explored the views of university students who attended a training program on child abuse. The sample consisted of 13 university students. Analysis showed that participants’ views of child abuse included nature and causes of, feelings about, ways to prevent child abuse and barriers to prevention of child abuse.
Construction of meaningful work: Narratives of young social entrepreneurs
Ketoki Mazumdar, Tata Institute of Social Sciences
No secondary authors

Qualitative study conducted on cohort of young social entrepreneurs who quit their corporate careers to find meaningful work in their chosen field of social ventures. Their narratives reflected more purposeful and meaningful engagement with their work after shift in career heightened by a sense of autonomy fulfilment and protean career orientation.

The role of sexual selection in visual art perception.
Beatrice de Gelder, University of Maastricht
Rebecca Watson, Maastricht University
Maarten Vaessen, Maastricht University
Minye Zhan, Maastricht University
Matteo Diano, University of Turin

Can markers of gender differences be found in fMRI based brain activations measured when people view art images? We show that participants viewing art images of male and female bodies with and without arrows (based on the Saint Sebastian pierced with arrows) show differential brain activations.

Early life stress and brain activation underlying emotion regulation
Andrzej Sokolowski, The Interdisciplinary Centre for Behavioural Genetics Research, Faculty of Psychology, University of Warsaw, Poland
Wojciech Dragan, The Interdisciplinary Centre for Behavioural Genetics Research, Faculty of Psychology, University of Warsaw, Poland
Katarzyna Jednoróg, Laboratory of Psychophysiology, Department of Neurophysiology, Nencki Institute of Experimental Biology, Polish Academy of Sciences, Warsaw, Poland

The study aimed to explore relation between the early life stress and brain activity related to voluntary emotion regulation. Using functional magnetic resonance imaging (fMRI) we indicated that frequency of childhood adversity determined altered neuronal
activity during performance of tasks engaging the processes of emotional self-regulation.

(Neuroscience - Neuroimaging)

II-126 Is logical reasoning related to mathematical problem solving?
Terry Tin Yau Wongx, The Education University of Hong Kong
No secondary authors

The current study examined the relation between children’s conditional reasoning and their mathematics skills. Children’s conditional reasoning significantly predicted mathematical problem solving after controlling for potential confoundings, and the relation was mediated by number sentence construction skills. Relation processing maybe the underlying mechanism of the above relation.

(Developmental Psychology, Cognitive Psychology - Reasoning)

II-127 Moral Reasoning in a Native vs. Foreign Language Across Four Tasks
Ayse Aycicegi-Dinxx, Istanbul 29 Mayis University
Sevil Hocaoglu, Istanbul University
Catherine L. Caldwell-Harris, Boston University

Bilinguals completed reasoning tasks that varied in their emotional vs. cognitive characteristics. Agreement with selfish choices was stronger for foreign-language dilemmas compared to native language versions. However, for decision-making that was emotional and involved multiple factors, using a native language facilitated integrating the information needed to arrive at optimal decisions.

(Cognitive Psychology - Reasoning)

II-128 Workplace bullying and organizational well-being: A moderated-mediation model of resilience and perceived victimization
Richa Guxt, Research scholar
Arti Bakhshi, University of Jammu

This study assessed the impact of workplace bullying (WB) on organizational well-being (OWB) through mediation of perceived victimisation among 512 Indian employees. The role of resilience as a protective factor in the mediated relationship was explored. The results revealed a moderated-mediation impact of WB on OWB using Structural Equation Modelling.
II-129 Values of Preschool Education students  
Marta Licardox, Faculty of Education, University of Maribor, Slovenia  
No secondary authors

The purpose of this study is to research values of preschool education students and to determine differences in students’ values for better understanding of professional development of preschool education students. We’ve analyzed the differences in students’ values regarding type of study, years of study, age, work experience and status (employed/student status).

II-130 Is Humblebragging an Effective Impression Management Strategy?  
Adéla Beckováx, Faculty of Arts, Charles University, Prague, Czech Republic  
Marek Vranka, Faculty of Arts, Charles University, Prague, Czech Republic  
Petr Houdek, Faculty of Social and Economic Studies, J. E. Purkyne University in Usti nad Labem, Czech Republic; a Faculty of Business Administration, University of Economics in Prague, Czech Republic

Our study builds on a recent study by Sezler et al. (2015) which proposes that humblebragging is an ineffective strategy for self-promotion. First, we explore the extent of humblebragging during job interviews amongst Czech students. In the following online study, we try to identify situations when humblebragging can be effective.