

## Development

## PUBLIC LECTURE

**PL04 Recovery from Child Abuse: Effects of Child Abuse on Brain Development****Nobuko Uchida** *Jumonji University, Japan*

Two children of severe developmental retardation were rescued in 1972, the both showed developmental age 1 year of age or less, in spite of the elder sister F was 6 years olds and the younger brother M was 5 years olds. We had provided the remedial education for 20 years. In overall, F showed better recovery than M. There were large differences between F and M in the degree of attachment between guardians. First, attachment between guardians and children can be recreated at a later period, and second, hold the key to interpersonal relationships and linguistic and cognitive recovery. The both developed tremendously during adolescence. A synapse spurt in the frontal area also occurs in adolescence. The case suggests that an early relationship with one's mother is not the only factor that regulates human development, and development can be restarted and repaired at a later period in adolescence.

## SPONSORED SYMPOSIUM

**SPS07****The Role of Motor Activity in Psychological Development (Symposium sponsored by the Japanese Association of Behavioral Science)****Organizer: David I Anderson** *San Francisco State University, United States of America***Session Abstract:**

This proposal deals with a classic theme in behavioral science: the role of motor activity in psychological development. Self-controlled activity is deemed important for psychological development by nearly every theoretical tradition in developmental psychology. Some of the best evidence to support this idea comes from research on the psychological revolution that occurs after infants start to crawl. The onset of self-produced locomotion heralds a pervasive set of changes in perceptual, cognitive, emotional, and social skills that have crucial biological adaptive significance. The purpose of the current thematic session is to highlight some of the recent attempts to extend this important line of inquiry. Four presentations reveal the remarkable diversity and innovation of approaches currently being used to study the role of locomotor experience in psychological development and the rich implications this work has for developmental theory and clinical

practice. This symposium is supported by the Japanese Association of Behavioral Science.

**The Role of Agency and Attention in Infant Psychological Development****David I Anderson** *San Francisco State University, United States of America*

Though a wealth of evidence confirms the importance of self-controlled locomotion for infant psychological development, the processes by which locomotion engenders psychological changes have remained elusive. One speculation is that active locomotion forces the infant to pay much closer attention to the environment to prevent potentially dangerous falls or collisions and to navigate successfully. Changes in attentional deployment then mediate psychological changes linked to self-controlled locomotion. This idea was tested in prelocomotor infants ( $N=8$ ) by giving them 15 10-min active (agentic) sessions in which they could control the movement of a toy train in a cluttered environment via a joystick. The infants showed significant improvements on two spatial-cognitive skills following the training: 1) manual search for hidden objects, 2) the extraction of an object's invariant shape. The findings suggest that agency and attention are major contributors to infant spatial-cognitive development.

**Crawling Experience Sensitizes Infants to Visual Proprioception Specifying a Sudden Drop****Moeko Ueno, Ichiro Uchiyama** *Doshisha University, Japan*

Visual proprioception is the sense of self movement produced by patterns of optic flow. Prior research has shown a dramatic shift in infants' responsiveness to peripheral lamellar optic flow following the onset of crawling, evidenced by their robust postural compensation to movements of the side walls of a moving room. In the current study, same-aged crawling and pre-crawling infants were exposed to optic flows in a virtual moving room specifying a sudden translation forward and a sudden drop down a steep slope. Crawling infants showed much more appropriate postural and cardiac reactions than pre-crawlers to the optically specified translations, particularly when the optic flow specified a sudden drop down the steep slope. These findings further highlight the important role played by locomotor experience in the differentiation and utilization of optic flow. They also highlight the important role that visual proprioception plays in wariness of heights.

**Walking onset creates major psychological changes in infants****Joseph Campos, Minxuan He** *University of California Berkeley, United States of America*

Our prior research has clearly documented a widespread developmental shift following crawling—a shift involving social, spatial cognitive, emotional, and perceptual changes, as well as changes in infant-to-mother attachment. WALKING appears to generate related changes in psychological performance. A major psychological change is the sharp increase in both receptive and productive language (indexed by the MacArthur-Bates communicative Development Index) that occurs following walking onset. This shift has been documented by several cross-sectional studies as well as a longitudinal study of infants from 11 to 14 months of age. The effect is seen cross-linguistically, being replicated in Mandarin-learning Chinese infants in Shanghai. The changes following walking onset are not limited to language and include increases in willfulness, joint visual attention, search for hidden objects, and other domains. We will present a process explanation of these developmental shifts.

**SPS08****Accumulated evidence of personality development in Japan (Thematic Session sponsored by The Japanese Society of Personality Psychology)****Organizer: Atsushi Oshio** *Waseda University, Japan*

Discussant: Atsushi Oshio

Waseda University, Japan

**Session Abstract:**

Many researchers have been intrigued by the features of personality development across the life course. Especially, in Europe and the United States, evidence for age differences in some personality dimensions have been found for the past decade, whereas less accumulated evidence had existed in Japan. Some Japanese researchers sought to report the evidence on personality development during recent years, and the features of development in each trait become gradually clearer. In this session, four speakers will present the recent findings of life-span development in personality and/or temperamental traits based on the data from large Japanese samples. We will accumulate the evidence on how Japanese people develop throughout a lifetime, and share and discuss the characteristics of the personality development in Japan.

**Personality development among Japanese children****Iori Tani** *Tokaigakuen University, Japan*

Personality scales of five factor model are used many studies in Japan. But there is not enough study that examines developmental changes of personality among Japanese children. In this study, we examine developmental changes of personality of five factor based on cross sectional sample. In this study, 5412 participants (ages between 9 and 15years) were

completed big five scale (Soga, 1999). Stability of factor structures were examined by a multiple population analysis. The Big five scale was found to have stability of factor structures in every ages and gender. Analysis about estimated scale values of extroversion found no developmental change, and women were higher than men. Neuroticism was increased with age. And women were higher in Neuroticism. Each tendency became clear about the other sub scales. In this study, similar results of other countries were indicated, and consistency of five factor structure across culture was found.

### Personality development in a Japanese adolescent sample

**Tetsuya Kawamoto** *Graduate School of Education, The University of Tokyo, Japan*  
Adolescence is a time for psychological and physical changes, and is important period in investigating human lifelong development. Because previous studies have provided inconsistent findings on personality stability and change in adolescence, the present study examined developmental trends in personality traits with a Japanese adolescent sample. This study used an archival data from the secondary school affiliated with the University of Tokyo (N = 3,656; range 12–18; 1,832 females), collected from 1981 to 2010. Personality traits were assessed by the Yatabe-Guilford Personality Inventory. Latent change score model analyses revealed mean-level increases in Neuroticism related traits and slight mean-level declines in Extraversion related traits. Additionally, this study found significant gender and birth cohort effects on personality. Although the initial levels of personality traits differed according to both factors, the difference scores were different mainly for birth cohort. These findings suggest that personality development may be affected by the sociocultural context.

### Age differences in the Big Five personality traits across the lifespan among Japanese adults

**Yusuke Takahashi (1), Takahiro Hoshino (2)** *1. Kyoto University, Japan; 2. Keio University, Japan*

Recent research has shown that personality traits continue to change across the lifespan even in adulthood, and that people become more mature in terms of personality traits. Specifically, people generally become more emotionally stable, agreeable, and conscientious. The purpose of this study was to accumulate knowledge about the Big Five personality trait developmental patterns, especially mean-level changes across the lifespan. In total, 35,524 female and 58,015 male members (N = 93,539, age range = 21–78, Mage = 46.18, SD = 11.47) across Japan participated in this study. Personality traits were assessed by the Japanese version of Big Five

Inventory-44. Our results found the personality traits among Japanese adults continue to change and develop in a positive trend across the life course even in older age, supporting the maturity principle of personality development. These findings clearly open the forthcoming research identifying the causal links responsible for why personality mean-level changes occur.

### Personality development in a Japanese elderly population

**Yukiko Nishita** *National Center for Geriatrics and Gerontology, Japan*

The elderly population in Japan is rapidly increasing. Aging populations are becoming more diverse in terms of physical and mental health, lifestyle and others. The diversity of these factors are closely associated with individual personality. The National Institute for Longevity Sciences - Longitudinal Study of Aging (NILS-LSA), which observes and describes the process of normal aging with randomly sampled residents (N = approximately 2,300; aged 40 to 79 years), has been conducted personality survey using the NEO Five Factor Inventory. Through the study, a lot of longitudinal data on physical and mental health, and lifestyles has been collected. This presentation will focus on (1) the age-related changes in the personality of elderly people and (2) the relationship of personality with physical and mental health, as well as lifestyles, and will discuss how the elderly people's personality effects on adaptation to aging.

## INVITED ADDRESS

### IA042

#### Identity dynamics in adolescence: The interplay of individual, interpersonal, social, and cultural factors

**Elisabetta Crocetti** *Utrecht University, Netherlands*

Identity formation is the most important developmental tasks of adolescence. In this period young people undergo several biological, cognitive, and social changes that stimulate identity questions, such as "Who am I?", "What is my place in the society?". To capture the dynamic process by which individuals form and revise their identity, theoretical process-oriented identity models have been developed. A consistent literature has shown that identity plays a key role in adolescent psychosocial development and adjustment. In fact, identity is intertwined with multiple individual (e.g., personality, problem behaviors, well-being), interpersonal (e.g., family and peer relationships), and societal (e.g., social responsibility, civic engagement) dimensions. Furthermore, the way in which young people develop their identity is strongly embedded in the cultural context in which they live. Indeed,

identity processes might be more or less adaptive across different contexts and youth belonging to ethnic minorities might experience more uncertainty in their search for identity.

### IA043

#### Bio-Behavioral Synchrony and the Cross-Generation Transmission of Well-Being and Psychopathology

**Ruth Feldman** *Bar-Ilan University, Israel*

Synchrony - the coordination of biological and behavioral processes between attachment partners during social contact - provides the basis for social affiliation in mammals and is underpinned by the extended oxytocin (OT) system. In this talk, I will present our model on bio-behavioral synchrony and detail the contribution of OT to the development of social synchrony at the genetic, brain, hormonal, and behavioral levels across the individual's multiple attachments bonds. Research on the parental brain will be discussed as the junction of evolutionary progress and as a template for species-continuity and sociality in the young. Following, I will present decade-long projects involving disruptions to parental-infant bonding, including the long term effects of maternal post-partum depression and chronic trauma on children's brain, behavior, and neuroendocrine systems. The talk will conclude by addressing the implications of the findings for the mind-brain polarity and the construction of early targeted interventions

### IA044

#### Negativity as an important component of mother-infant negotiation dynamics

**Koichi Negayama** *Waseda University, Japan*

The mother-infant relationship has two opposing components: positivity and negativity. Demands of mothers and infants do not always agree, and can cause negativity between the individuals. As demands fluctuate over time, mothers and infants negotiate with each other and try to dynamically adjust them. Kowakare, a Japanese term originally describing offspring independence triggered by mother-offspring antagonism is an important concept for understanding normal development of mother-infant negotiations. Kowakare has two frameworks of mother-infant inter-body antagonism and allomothering. The first framework is exemplified at weaning in conflict between mother and infant, and the other framework in mother-infant separation, facilitated by secondary intervening systems of objects, persons, and institutions. In a cross-cultural comparison of Japanese and Scottish Kowakare, the Japanese mother-infant relationship appears more cohesive and infant-centered than their Scottish counterparts. The styles of Kowakare are also different between the two cultures, which makes the process of development in companionship different.

## IA045

**Empathy in children: Theory, development, and assessment**

**María C Richaud** Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina

Although empathy is a basic process for social-emotional development, it has been difficult to develop a theory that integrates emotional and cognitive aspects, while creating operational definitions in order to empirically study the theories. In this presentation different theoretical perspectives of empathy, its development in children, and results about the dispositional and social origins of empathy and about their psychometric study will be discussed. While some authors as Watt (2007) claim that the resonance induction of at least one version of the suffering of others within us and intrinsic motivation to reduce suffering or distress of others are essential parts of empathy, results will be presented suggesting that empathic process is malleable and can be modulated by volitional acts of self-regulation and implicit assessment processes (Decety, 2011). Although these modulators processes may have adaptive advantages, they can also produce discriminatory behavior, so prosociality is not necessarily a result of empathy.

## IA046

**Development and Social-Cultural Learning of Cooperation Sharing Behavior of Only Children and Children with Siblings in China**

**Liqi Zhu** Institute of Psychology, Chinese Academy of Sciences, China

The previous one-child policy in China makes it a special context to study the prosocial behavior of only children. There's a great concern in the society that the only child would be more self-centered for being spoiled. In a longitudinal study conducted in rural China we examined the development of young children's sharing behavior towards friends and strangers in a dictator game. Results showed that most of the 4-year-old children in rural areas behaved altruistically, indicated by their willingness to share stickers with both friends and strangers. However, two years later, the same children became more willing to share with friends but less willing to share with strangers. These findings suggest a human developmental trend towards favoritism of reciprocal relations. There was no striking difference between only and non-only children's sharing behavior, indicating that a higher need for friendship and social networking may counterbalance the only children's self-centered tendency.

## IA047

**Dynamic Changes in Human Brain and Behavior Revealed by Connectomics: A Lifespan Perspective**

**Xi-Nian Zuo** Institute of Psychology, Chinese Academy of Sciences, China

A central goal of modern cognitive sciences is to catalogue the rich phenotypic variation among individuals in terms of differences in the wiring diagram of the brain and its functional interactions (i.e., connectome) as well as their behavioral correlations. This talk aims to: 1) survey recent connectivity studies across the lifespan, emphasizing the convergence of empirical studies and theoretical models onto an integrative lifespan model; 2) motivate the adoption of lifespan connectome studies to guide novel explanations of brain-behavior development; 3) demonstrate the feasibility of delineating normative lifespan connectome trajectories by aggregating data from existing resources into network models, and prioritize targets for future lifespan studies in human brain connectomics; 4) highlight translational benefits of understanding normative lifespan brain network development to earlier detection of various brain diseases and to better design of more personalized and targeted pharmacological/surgical interventions; 5) identify opportunities for the standardization of assessments across the lifespan.

**INVITED SYMPOSIUM**

## IS044

**Working Memory: Insights from Development**

**Organizer: Valerie Camos** Université de Fribourg, Switzerland

Discussant: Pierre Barrouillet  
Université de Genève, Switzerland

**Session Abstract:**

Working memory is in charge of the storage and processing of information at short term. As a consequence, it is involved in all cognitive activities and conceived as the hub of human cognition. Although studied for decades, many questions are still pending about its functioning and more especially about its development. Although changes in working memory capacity throughout childhood is considered as playing a major role in cognitive development since the neo-Piagetian revolution, the factors underpinning these changes remain largely unknown. The aim of its symposium is to shed light on this question through the presentation of up-to-date research on working memory by world leaders in this field.

**Development of working memory: what is the trend from infancy through childhood?**

**Nelson Cowan** University of Missouri, United States of America

Our understanding of cognitive development depends on working memory, the limited information temporarily accessible for language processing and problem solving. I will assess possible reasons why working memory

performance improves with development. The literature leads to the weird impression that working memory capacity reaches adult-like levels during infancy but then regresses by the early elementary school years. Instead, I consider how infant studies may lead to overestimates of capacity if one neglects supports that the tasks provide, compared to adult-like tasks. Further development of working memory during the school years is also considered. Various confounding factors (development of knowledge, strategy, etc.) have led many investigators to suspect that working memory capacity per se is constant after infancy. Instead I will show that, with each of these factors controlled, working memory still develops after infancy. Suggestions are made for research to bridge the gap between infant and child developmental research.

**Bridging visual working memory research from infancy through adulthood using dynamic systems models**

**Vanessa R Simmering (1), Sammy Perone (2)** 1. University of Wisconsin - Madison, United States of America; 2. University of Minnesota, United States of America

Visual working memory (VWM) predicts higher-level cognitive skills, such as fluid reasoning and scholastic achievement, both longitudinally from infancy as well as concurrently in older children and adults. Despite empirical evidence for developmental continuity in VWM processes, theories have historically focused on only one developmental period, sometimes prosing mechanisms that cannot easily be translated to other tasks and age groups. This is a major limitation because identifying mechanisms of developmental continuity could offer an opportunity for early intervention. This talk presents a process-oriented theory of VWM development to bridge between previously disconnected areas of research. This theory is formalized in a computational model that shows how a single developmental mechanism can account for improvements in VWM from infancy through later childhood. We conclude by discussing the implications of this theory for understanding how VWM relates to other cognitive skills over development.

**Examining the sources of development of pre-schoolers working memory**

**Valerie Camos** Université de Fribourg, Switzerland

Contrary to older children, pre-schoolers' working memory is not affected by variation in concurrent attentional demand (Camos & Barrouillet, 2011). This finding was taken as evidence that pre-schoolers do not reactivate memory traces through attentional refreshing; their recall performance being dependent on

the duration during which traces are passively maintained in working memory (i.e., the longer the duration, the poorer the recall). Despite the absence of active maintenance, working memory capacity increases from 4 to 6–7 years of age. We examine two potential sources of development that could account for such an increase. In a first series of experiments, we examine the age-related changes in the rate of forgetting through time. In a second series, we assess the role of attention in working memory tasks.

### The development of visual and verbal short-term memory consolidation in children

**Donna M Bayliss (1), Jade Bogdanovs (1), Christopher Jarrold (2)** 1. *School of Psychology, University of Western Australia, Australia*; 2. *School of Experimental Psychology, University of Bristol, United Kingdom*

Research suggests that a process of short-term consolidation is evident in children. Yet, little is known about the nature of this process, the development of consolidation across childhood, or the relationship between consolidation and working memory performance. In this study, we compared consolidation functions across 7- to 11-year-olds using visual and verbal change-detection tasks designed to measure short-term consolidation. Similar consolidation functions to those reported for adults were found for children. For the visual task, the older age-groups were faster overall, however, the consolidation functions did not differ across age-groups. In contrast, the verbal consolidation functions varied across age-groups. Associations were evident between estimates of visual consolidation efficiency and measures of working memory, however, associations were less consistent between estimates of verbal consolidation efficiency and measures of working memory. These results suggest that the consolidation of visual and verbal information may involve separate mechanisms that follow different developmental trajectories.

### Accumulation of knowledge in the Hebb repetition paradigm affects immediate serial recall: Implications for the development of verbal working memory

**Satoru Saito, Masataka Nakayama** *Kyoto University, Japan*

Children receive considerable information from their language environment, which affects the development of verbal working memory. In order to examine the effect of language experience on verbal working memory - particularly serial order memory - we conducted Hebb repetition experiments with a sample of adults. Although previous studies reported that the Hebb paradigm detected only limited effects of repeated presentation of serial order information at an item position level, our results

indicated that extensive exposure to patterned serial order information promoted the accumulation of position-specific order information in long-term memory and that such phonotactic knowledge had an impact on immediate serial order memory. This suggests that language experience shapes knowledge about linguistic serial order information, which subsequently affects verbal working memory performance.

### IS045

#### Cultural and social factors in the development of face recognition

**Organizer: Chang Hong Liu** *Bournemouth University, United Kingdom*

#### Session Abstract:

This symposium focuses on cultural and social influences on the development of face recognition. Prior research has revealed cultural differences in face recognition. However, little is known about the onset of these differences in the early childhood. The purpose of the symposium is to bring together new findings in this area and to exchange information about how different forms of cultural and social elements play a role in development of face recognition. The symposium will consist of five talks. The first theme of these talks will be face-processing strategies inferred from children's eye movement. The second will be on the face processing bias in infants. The third will be on developmental changes in attention to faces to face in early infancy, the fourth will be on development of the own-race advantage, and the fifth will be on perceptual narrowing for faces in infants.

#### British children all look the same: Patterns of eye movements are stable from five years of age

**Rachel J Bennetts, Chang Hong Liu** *Bournemouth University, United Kingdom*

Adults and older children show stereotypical patterns of eye-movements when viewing faces, which are influenced by their cultural environment. However, it is unclear when and how these culturally-influenced patterns develop throughout childhood, and how they face recognition ability. In this study, 45 British Caucasian children (aged 5–11 yrs) completed a memory task with Caucasian and Asian faces. Fifteen children completed the task in an eye-tracker. There was no behavioural difference between Asian and Caucasian face recognition, and no difference in viewing time for individual features (eyes, nose, mouth) of Caucasian and Asian faces. Children spent more time viewing other facial areas (e.g., cheeks, forehead) and hair for Asian than Caucasian faces. This pattern remained consistent across the age range tested. These results suggest that children's patterns of eye movements are relatively stable by 5 years of age, and exhibit subtle effects of race even in the absence of behavioural differences.

#### Spatial and temporal stimulus characteristics eliciting attention to faces in early infancy

**Yumiko Otsuka (1), Hiroko Ichikawa (2), So Kanazawa (3), Yamaguchi K. Masami (4)** 1. *Ehime University, Japan*; 2. *Tokyo University of Science, Japan*; 3. *Japan Women's University, Japan*; 4. *Chuo University, Japan*

Human infants preferentially look at faces from birth. While this initial upright face preference seems to depend on a very crude representation, the preference become more specifically tuned to realistic faces within a few months. This talk will discuss findings from studies examining spatial and temporal characteristics of stimuli that elicit an upright face preference in infants. Even though the coarse, low spatial frequency (LSF), content of facial images carries greater contrast energy, a recent study on 4-to 5-month-old infants revealed no advantage for LSF over high spatial frequencies (HSF) in eliciting an upright face preference in infants across image durations of 300 ms, 600 ms and 5 s. Rather, the results revealed that the infants showed an upright face preference at shorter image durations when faces were depicted with HSF compared to when they were depicted with LSF.

#### Development of the own-race advantage in school-age Taiwanese children: Revealed with a morphing face paradigm

**Sarina Hui-Lin Chien, Chu-Lik Tai, Shu-Fei Yang** *China Medical University, Graduate Institute of Neural & Cognitive Sciences, Taiwan*

Previous studies on the other-race effect in children mostly focused on recognition memory. Here we explored the encoding advantage hypotheses in Taiwanese children. 5- to 12-year-old children and adults were tested with a sequential face matching task with swathes of morphed images of Caucasian and Asian female faces. In each trial, the participant viewed an Asian- or Caucasian-parent face followed by either the "same" (0%) or a "different" morphed face (15%, 30%, 45%, or 60% mixture). The group psychometric functions on rejection rates were fitted with sigmoidal functions. Adults exhibited a smaller discrimination threshold and a sharper slope in the Asian condition, supporting the encoding advantage hypothesis. Children aged 5–8 did not exhibit an encoding advantage for own-race; it appears to emerge around 9–10 and became apparent around 11–12. In sum, school-aged children made progress in discriminating own-race faces but their ability to discriminate other-race faces remained relatively unchanged.

#### Perceptual narrowing towards adult faces is a cross-cultural phenomenon in infancy: A behavioral

### and near-infrared spectroscopy study with Japanese infants

**Megumi Kobayashi (1), Viola Macchi Cassia (2), So Kanazawa (3), Masami K Yamaguchi (4), Ryusuke Kakigi (1)** 1. National Institute for Physiological Sciences, Japan; 2. University of Milano-Bicocca, Italy; 3. Japan Women's University, Japan; 4. Chuo University, Japan

Recent data showed that, in Caucasian infants, perceptual narrowing occurs for own-race adult faces between 3 and 9 months of age, possibly as a consequence of the extensive amount of social and perceptual experience accumulated with caregivers and/or other adult individuals of the same race. We explored the neural correlates of perceptual narrowing for own-race adult faces by using near-infrared spectroscopy (NIRS). In Experiment 1, we confirmed that Japanese infants showed perceptual narrowing for adult faces between 3 and 9 months of age. In Experiment 2, we measured hemodynamic responses to adult and infant faces in 9-month-olds, and revealed adult faces induced significant increases in hemodynamic responses in the right temporal areas. Our data suggest that perceptual narrowing towards adult faces is a cross-cultural phenomenon occurring between 3- and 9-months of life, and translates by the 9 months of age into a right-hemispheric specialization in the processing of adult faces.

#### IS046

### Children's scientific reasoning skills in the light of general cognitive development

**Organizer: Elsbeth Stern ETH Zuerich, Switzerland**

Discussant: Olivier Houdé

Paris Descartes University, France

#### Session Abstract:

Hypothesis testing and evidence evaluation are decisive for scientific literacy. While basic scientific reasoning skills already emerge in early childhood, they are continuously refined as a consequence of cognitive development and learning. The symposium will focus on the mechanisms that guide the acquisition of these skills. Paper 1 will discuss the role of language development by highlighting parallels between scientific reasoning and inferring word meanings. In Paper 2, longitudinal data will display relationships between the Theory of Mind at age 3–4 and scientific reasoning skills at age 8. Paper 3 is on evidence evaluation by investigating whether preschool children trust mother's testimony when it is in conflict with children's naïve theory. Paper 4 will highlight to what extent scientific reasoning skills can be indirectly boosted by content-specific learning about elementary physics. An integrative view on the papers will contribute to a better understanding of individual differences in scientific reasoning.

### Theory of Mind Predicts Scientific Reasoning. A Longitudinal Study from Preschool to Elementary School Age

**Beate Sodian (1), Susanne Kristen-Antonow (1), Susanne Koerber (2)** 1. LMU Muenchen, Germany; 2. University of Education, Freiburg, Germany

The ability to differentiate claims from evidence in scientific reasoning is conceptually related to the ability to distinguish beliefs from reality. Therefore, we expect predictive relations between Theory of Mind and scientific thinking. Although there is a burgeoning literature on early causal and scientific reasoning, to date, very little research has addressed the developmental relations between milestones of cognitive development and the emergence of scientific thinking skills. In the present longitudinal study of  $N = 140$  children, we tested for predictive relations between Theory of Mind measures, assessed at the ages of 4–6 years, and three scientific thinking tasks, administered at the age of 8 years. First- and second-order false belief understanding were predictive of scientific thinking, independently of verbal IQ, and scientific thinking skills were concurrently related to mathematical abilities. These findings are discussed with respect to conceptual development, as well as the preschool prediction of school performance.

### Do young children trust mothers testimony when mothers testimony is conflict with children's naïve theory

**Liqi Zhu, Tingyu Li Institute of Psychology, Chinese Academy of Sciences, China** Previous studies showed that children tended to trust their mothers when mothers and strangers offer conflicting claims in a novel situation (Corriveau et al., 2009). This study investigated children's epistemic trust when mothers' testimony is conflict with children's naïve theory. Ninety 3–5 year old children were given scientific testimony on a physics context by their mothers, while strangers offered layman testimony which was consistent with children's misconception. Results showed that when mothers' testimony was strongly conflict with children's own naïve concept, children tended to believe strangers' testimony more than their mothers'. This tendency increased with age: Older children were more reluctant to accept their mother's testimony when it was not consistent with their naïve theory. The finding suggests that children do not accept their mothers' testimony unconditionally. Implications of the findings on science education would be discussed.

### The impact of domain-specific learning in physics on scientific reasoning skills in elementary school children

**Elsbeth Stern, Ralph Schumacher, Peter Edelsbrunner, Lennart Schalk, Anne Deiglmayr ETH Zuerich, Switzerland**

In a longitudinal study based on an intervention-control design with altogether 181 elementary school children, we focus on the impact of content-specific learning in physics on general scientific thinking skills. Six third-grade classes got an intensive inquiry-based instruction on four physics curricula on the topics of floating and sinking, the stability of bridges, sound, and air pressure. Before and after the curricula were applied, a test on experimentation skills was applied. A control group of six classes got the tests only. It was investigated whether experimentation skills increase as a consequence of undergoing the four physics curricula. Latent regression models revealed an effect of the intervention: Having received the four physics curricula accounted for an additional 8% of variance in the posttest on experimentation skills. How this considerable transfer effect from content-specific physics instruction to broader scientific thinking can be further exploited for science learning, will be discussed.

### Abductive inference in learning of word meanings and scientific concepts

**Mutsumi Imai Keio University, Japan**

Children need to learn words by inference, thereby they need to come up with the most plausible meaning of words among all other possible ones, recruiting cues available in the context and various sources of linguistic and conceptual knowledge. This type of inference—the inference to the best explanation or solution—is abduction (Thagard, 2006). Abductive inference is precisely what scientists do to discover the most plausible explanations for a set of phenomena. I argue that abductive inference (rather than purely inductive or analogical inference) is the key for acquisition of language and scientific concepts for children. I explore the origin of the cognitive ability to make plausible abductive inference possible, and present data from a comparative study with human infants and chimpanzees. I conclude the talk underscoring the intricate bootstrapping relation between cognitive functions for thinking and learning, and the lexical and conceptual knowledge.

#### IS047

### Synchrony as the foundation of cognitive and social development: Mother-infant co-manipulation of time structure

**Organizers: Noriko Toyama (1), Koichi Negayama (2)** 1. Waseda University, School of Human Sciences, Japan; 2. Waseda University, Japan

Discussant: Ruth Feldman

Bar-Ilan University, Israel

**Session Abstract:**

Synchrony, defined as a dynamic and reciprocal adaptation of the temporal structure of verbal and non-verbal behaviors (e.g., motor action, gestures, gaze, and vocalizations), is a key concept of mother-infant interactions, and is a criterion for distinguishing between normal and pathologic interactions. In this symposium, we examine the time structure of mother-infant interactions, and discuss the following: (a) from early on, both a mother and her infant co-regulate and co-construct synchronous interactions; (b) synchrony is inherently inter and multi-modal; and (c) a synchronous interaction is not interpreted as a perfect symmetric timing exchange-breaks and variations in synchrony are important to improve adaptation, creativity, and stimulation; (d) synchrony is an antecedent for the emergence of social and cognitive functions, for example, language, skill development, and social competence; and (e) different patterns of synchrony are observed among cultures, and early mother-infant synchrony is a basic building block to construct interpersonal relationships.

### Synchrony of preverbal vocal behavior and rhythmic motor action in early infancy

**Keiko Ejiri** *Ibaraki Christian University, Japan*

We report on synchrony (co-occurrence) of vocal behaviors and motor actions in infants in the prelinguistic stage. Four Japanese infants were studied longitudinally from the age of 6 to 11 months. For all the infants, a 40-min. sample was coded for each monthly period. The vocalizations produced by the infants co-occurred with their rhythmic actions with high frequency, particularly in the period preceding the onset of canonical babbling. Among the vocalizations recorded in the period when synchrony appeared most frequently, those that co-occurred with rhythmic action had significantly shorter syllable duration and shorter formant-frequency transition duration, compared to those that did not co-occur with the rhythmic action. The present acoustic features were similar to those found in mature speech. Our findings suggest that synchrony of rhythmic action and vocal behavior may contribute to the infant's acquisition of the ability to perform articulatory movements that are indispensable for spoken language acquisition.

### Mother-infant co-construction of solid feeding

**Noriko Toyama** *Waseda University, School of Human Sciences, Japan*

Solid feeding is a collaborative and interactive process between caregivers and infants. The present study examined how mothers and infants coordinate to construct solid feeding interactions. Based on naturalistic longitudinal observations of several Japanese mother-infant

dyads, the followings are discussed; (a) when feeding children, mothers often moved their mouths though they did not eat food themselves. Mothers' eating-like mouth movements display a kind of synchrony, and the development of synchrony functions to coordinate mothers' body movements with their infants' behavior. (b) From around 10–11 months of age, feeding interactions became harmonious. Before this age, rhythmic and synchronized body movements had frequently emerged, suggesting that through rhythmic movements, mothers and children practiced in matching their timing of body motions. (c) Rhythmic movements tended to co-occur with onomatopoeia verbalization. Onomatopoeia which is intrinsically multimodal seems to assist construction of shared timing of solid feeding.

### Development of mother-infant synchrony and dissynchrony in feeding and its cultural comparison

**Koichi Negayama** *Waseda University, Japan*

Feeding is a situation of triadic mother-infant-food relationship, and the precise adjustment of food-taking is required for smooth, efficient eating. The timing of the component acts of the feeding appeared to be initially regulated by the mothers, who were highly empathetic, indicating in their own mouth movements. Such empathetic behavior decreased after the infants' attainment of autonomy in eating. The infants' active role in feeding was also suggested by experimentally manipulating the movement of the mothers' feeding hand. A difference exists between Japan and Scotland in the regulation of this synchrony. The empathetic mouth-opening behavior was more frequent in Japan, whereas the Scottish mothers showed stronger regulation in the infants' attention-calling in feeding. The Scottish mothers also withdrew from the feeding interaction more quickly after the infants started to self-feed than the Japanese mothers did. In the latter case, the infants' refusal of synchronous food acceptance promoted their eating autonomy.

### The prospective and embodied nature of communication: Sharing time with another

**Jonathan Delafield-Butt** *University of Strathclyde, United Kingdom*

This paper advances embodied experience and its composition within a single body and between bodies as atomistic and future-oriented, arranged in a nested hierarchy of conscious purpose that expands in human development beyond the self to include others in discreet, purposeful intersubjective units of engagement. Its origins can be identified in the first signs of awareness and purposeful motor activity of the second trimester foetus, whose self-generated movements anticipate their consequences. Such early conscious action reveals

a primary psycho-motor unit that is intentional, subjective, and objective in motor expression. After birth, single intentions become serially organized into projects with increasingly ambitious distal goals and social meaning. Throughout development, the narrative form of creative agency with its four-part structure of 'introduction,' 'development,' 'climax,' and 'resolution' is present. Structured by a common neuro-motor system with shared spatiotemporal patterning, meaning-making is achieved in co-created psycho-motor time with common purpose, or 'synchrony'.

### Development and time structure of mother-infant interaction in tickling play

**Konomi Ishijima** *Waseda University, Japan*

Tickling play is important in exploring the development of mother-infant intersubjectivity because intensive emotional reaction is caused in infants by a shared bilateral experience of touch between mother and infant. Mother-infant's tactile play including tickling was naturalistically observed, and the time-structure of tickling and its development were analyzed. The results showed that the mother began to insert a pause in the sequence or show a fake tickling in the air just before an actual touch at around 7 months. At the same time, the infant reacted to them with an anticipatory ticklishness. Such manipulation of timing by the mother occurred more often at 7 months than 5 months. It seems to boost the infant's excitement and joy by an anticipation of the mother's behavior and a share of the narrative.

## CONTRIBUTED SYMPOSIUM

### CS036

### Family Influences at Different Ages - Data and Results from Large Panel Studies

**Organizer: Thomas Bäumer** *LifBi, Germany*

Discussant: Jutta Von Maurice

LifBi, Germany

#### Session Abstract:

In the symposium three European panel studies (ELFE, NEPS, and PAIRFAM) are employed to analyze the effect of family on different outcomes of the children. The papers look at children at different times in their lifecycle, namely before, during, and at the end of schooling: (1) "Effects of the family structures and the family education on the early development of children. First outcome of the French cohort ELFE at one year." by Bertrand Geay and Pierig Humeau. (2) "Effects of Family Background and the Home Learning Environment on Participation in Extra-curricular Activities from Grade 5 to Grade 7. Results from the National Educational Panel Study

of Germany." by Thomas Baeumer and Hans-Guenther Rossbach. (3) "The Transition to Adulthood in Europe and China: A comparative panel-analysis of the trajectories from school to work, from partnership to parenthood and of leaving the parental home." by Bernhard Nauck and Nicolai Groepler.

### Effects of the family structures and the family education on the early development of children. First outcome of the French cohort ELFE at one year

**Bertrand Geay (1), Pierig Humeau (2)**  
1. *University of Picardie (Curapp-Cnrs), France*; 2. *University of Limoges, France*

This presentation will be based on the first results of the ELFE inquiry at one year ( $n = 18,000$  french children). The questionnaires permit to measure the development of the child in different dimensions (socialization, autonomy, gross or fine motor development, expressive and receptive language ability), with the help of standardized modules: the « Child Development Inventory » and the « Mac Arthur-Bates » inventories. The statistical analysis will proceed by logistic regressions and by geometric analysis of the data. It will be about measuring the importance of the care and educational practices, in relation with the social background and the school trajectory of the two parents.

### Effects of Family Background and the Home Learning Environment on Participation in Extra-curricular Activities from Grade 5 to Grade 7. Results from the National Educational Panel Study of Germany

**Thomas Bäumer, Hans - Gunther Roßbach** *LfBi, Germany*

We investigate influence of family on participation in extra-curricular activities (courses in music or art schools as well as sports). Whereas individual characteristics (like gender) and aspects of the familial background (like SES, parent education, migration background) have been analyzed to a great extent, process characteristics of the family (home learning environment) are often neglected. Using data from Starting Cohort 3 of the National Educational Panel Study of Germany, we first take a look at participation rates in extra-curricular activities. Whereas courses are attended by only one third of sample, two-thirds participates in sports several times a week. Participation from grade 5 to grade 7 is quite stable. Using regression analyses, we can show that participation in courses and in sports is influenced by individual and family background variables. Moreover, there is an additional impact of home learning environment (joint cultural activities) on attending courses but not on sports participation.

### The Transition to Adulthood in Europe and China: A comparative panel-analysis of the trajectories from school to work, from partnership to parenthood and leaving the parental home

**Bernhard Nauck, Nicolai Groepler**  
*Chemnitz University of Technology, Germany*

Trajectories to adulthood differ considerably cross-culturally with regard to the prevalence, the timing and the sequencing of events, such as the timing of home leaving, the prevalence of a moratorium between education and employment, or the sequencing of cohabitation, marriage and parenthood. Using panel studies from Germany (the German Family Panel), the UK (Understanding Society), Taiwan (Taiwan Youth Project) and China (Chinese Family Panel Studies), we demonstrate the interplay of structural effects of the respective institutionalization of school-work transitions and of welfare state regulations on individual choices in intergenerational housing, on the length of a moratorium between school and work, and on the entry into relationships and parenthood. The analysis of cross-societal differences in effect sizes from multivariate event history analyses test the hypothesis whether family-of-origin-effects are buffered by welfare state provisions or extended kinship relations.

### CS037

#### Socialization in different contexts: moderating and mediating effects of intervention programs

**Organizer: Katrien Helmerhorst** *University of Amsterdam, Netherlands*

Discussant: Metin Özdemir  
*Örebro University, Sweden*

#### Session Abstract:

The relationships and experiences that children have with their immediate environment determine their later development. Specifically, interactions in proximal social contexts such as the family, childcare, and the peer group in school may be crucial in shaping a variety of social-emotional and behavioral developments. Therefore it is important to assess the interactions that children experience with their immediate environment and moreover, to improve them by means of intervention programs when needed. This symposium features the examination of intervention programs that are widely implemented in different contexts, in which children of different ages develop: family, early center based child care, and the peer group in school. The presentations will focus on moderating and mediating factors of intervention programs: KiVa anti-bullying program by Christina Salmivalli; Incredible Years, parenting program by Geertjan Overbeek; Comet, Incredible Years and Cope, parenting

programs by Tatiana Trifan; and CIP Training, video-feedback program for caregivers in childcare by Katrien Helmerhorst.

### Working mechanisms of the KiVa antibullying intervention among primary school children

**Silja Saarento, Christina Salmivalli** *University of Turku, Finland*

This longitudinal study examines the mediating mechanisms by which the KiVa antibullying program reduces bullying and victimization among primary school students. Both student-level mechanisms leading to reduced bullying perpetration and classroom-level mechanisms leading to reductions in bullying and victimization were considered. Multilevel structural equation models were based on data from 7,491 Grade 4–6 students (Mage 11.3 years; 49.5% boys) in 421 classrooms in 77 schools. At the student level, antibullying attitudes and perceptions regarding peers' bystander behaviors and teacher attitudes toward bullying mediated the effects of KiVa on bullying perpetration. At the classroom level, the program effects on bullying were mediated by students' collective perceptions of teacher attitudes toward bullying. Finally, the classroom-level reductions in bullying accounted for the reductions in victimization. These findings enhance knowledge of the developmental processes contributing to bullying and victimization and shed light on the key mechanisms by which school bullying can successfully be counteracted.

### Moderating effects of the Caregiver Interaction Profile training on caregiver-child interactions in center based child care

**Katrien Helmerhorst (1), Marianne Riksen-Walraven (2), Ruben Fukkink (1), Louis Tavecchio (1), Mirjam Gevers Deynoot - Schaub (3)** 1. *University of Amsterdam, Netherlands*; 2. *Radboud University Nijmegen, Netherlands*; 3. *Kohnstamm Institute, Netherlands*

This study examined moderating effects of the Caregiver Interaction Profile (CIP) training at posttest and follow-up (three months after the posttest) using a Randomized Controlled Trial design. The CIP training is a five-week video feedback training for caregivers in early child care centers (0–4 year-olds) aimed at improving caregiver-child interactions. The CIP training focusses on six key interactive skills: Sensitive responsiveness, respect for autonomy, structuring and limit setting, verbal communication, developmental stimulation, and fostering positive peer interactions. We examined the influence of caregiver's age, work experience, burnout, physical workload and job resources on training outcomes. Results show that burnout significantly influenced training effects at posttest for respect for autonomy and verbal communication;

caregivers experiencing less burnout, had more favorable training outcomes. Surprisingly, having less job resources at the child care center positively influenced training outcomes at follow-up for respect for autonomy and fostering positive peer interactions.

### Self-help intervention based on a parenting book: does it work as well as face-to-face programs for children with conduct problems?

**Tatiana Alina Trifan** *Orebro University, Sweden*

Problematic child behavior is linked to harsh parenting (Snyder & Patterson, 1995). Starting from findings showing that minimum support for parents improves parenting skills (Markie-Dadds & Sanders, 2006), we explored whether a book for parents is efficacious in tackling problems in children and improving parental outcomes. We used a four-group RCT design, and compared a self-help to two face-to-face group interventions (Comet, and The Incredible Years) and with no intervention on short-term (12 weeks after pre-test) and long-term (1-year follow-up). The sample consisted of 655 parents (61% of boys, 3–12 years old,  $M = 7.41$ ,  $SD = 2.48$ ). Latent Transition Analysis and Latent Growth Curve Models showed that both types of interventions improved both child behavior and parental practices compared to no intervention. However, face-to-face interventions reduced child problems and parental harshness more than self-help, irrespective of child's age, gender, and diagnosis. These findings should be considered in practice at different sectors of care.

### Children's genetic susceptibility to parenting: Evidence from a randomized trial of the Incredible Years parent training program

**Geertjan Overbeek, Joyce Weeland, Rabia Chhangur** *University of Amsterdam, Netherlands*

This study examined children's genetic susceptibility to parenting, and examined specific gene-environment interplay in the development of children's externalizing behavior. Data were used from 387 parent-child dyads (child  $M$  age = 6.31,  $SD = 1.33$ ), who participated in a randomized controlled trial of the parent training Incredible Years. Allelic variation in participating children was assessed across the 5HTT-LPR, DRD2, DRD4, MAOA, and DAT1 genes. Latent growth curve analyses showed that children whose parents received the Incredible Years parent training significantly decreased in externalizing behavior, compared with controls. This intervention effect was significantly moderated by child genotype. Specifically, children with a higher score on a polygenic susceptibility index benefited more from the intervention than children lower on this polygenic index. Additional analyses will test intervention effects for

children's prosocial behavior and for positive and negative parenting strategies, building on both parent report and observational data.

### Working mechanisms of the KiVa antibullying intervention among primary school children

**Christina Salmivalli, Silja Saarento** *University of Turku, Finland*

We focus on the mediating mechanisms by which the KiVa antibullying program reduces bullying and victimization among primary school students. Longitudinal analyses were based on a sample of 7,491 students nested within 421 classrooms within 77 schools. At the beginning of program implementation, the children were in Grades 4, 5, and 6 (mean age 11.3 years). Multilevel structural equation modeling was used to test whether changes in hypothesized mediators accounted for later reductions in the outcomes. At the student level, antibullying attitudes and perceptions regarding peers' bystander behaviors and teacher attitudes toward bullying mediated the effects of KiVa on bullying perpetration. At the classroom level, the program effects on bullying were mediated by students' collective perceptions of teacher attitudes toward bullying. Finally, bullying mediated the effects of the classroom-level factors on victimization. The findings shed light on the key mechanisms by which school bullying can successfully be counteracted.

### CS038

#### Pragmatic abilities in typically and atypically development

**Organizer: Yusuke Moriguchi** *Joetsu University of Education, Japan*

#### Session Abstract:

Pragmatic abilities are key to interpreting other people's utterances and responding to them appropriately. These abilities are acquired during childhood and encompass a variety of skills, such as reading others' mind, communicating with them according to their statements, and understanding conversational rules. It has been proposed that children with developmental disorders, such as autism spectrum disorder (ASD), have difficulty with pragmatic skills. However, little is known about the developmental processes of pragmatic abilities during early childhood. In this symposium, we introduce four recent studies to discuss typical and atypical development of pragmatic abilities. The first paper examined Gricean maxim violations in typically developed children using Conversational Violations Test (CVT). The second paper used the CVT to examine the pragmatic abilities in children with ASD. The other paper assessed the development of pragmatic ability using a new paradigm

#### Understanding violations of Gricean maxims in typically

#### developing preschoolers and adults

**Mako Okanda (1), Shoji Itakura (2)**  
1. *Otemon Gakuin University, Japan*; 2. *Kyoto University, Japan*

Pragmatic abilities are important for communication; however, its developmental patterns in typically developing children have not been well examined. Japanese 4-, 5-, and 6-year-olds and adults were given a revised Conversational Violations Test to examine Gricean maxim violations. Participants' understanding of the following maxims was assessed: be informative (first maxim of quantity), avoid redundancy (second maxim of quantity), be truthful (maxim of quality), be relevant (maxim of relation), avoid ambiguity (second maxim of manner), and be polite (maxim of politeness). Preschoolers acquired the maxim of relation first and had the greatest difficulty understanding the second maxim of quantity. That is, 4-year-olds' understanding of maxims was near chance, 5-year-olds understood some easy maxims (e.g., maxim of relation), and 6-year-olds and adults understood all maxims but their comprehension of the maxim of politeness were different. The development of the pragmatic understanding of Gricean maxims from early childhood to adulthood will be discussed.

#### Development of the interpretation of ambiguous referents in preschoolers with developmental disorder

**Taro Murakami** *Kyushu Womens University, Japan*

The development of pragmatic ability may involve specific processes of theory of mind (ToM) and/or executive function, or it might be a reflection of intellectual ability. To differentiate these alternatives, the current study administered task batteries measuring reference assignment (RA) that is an ability to disambiguate a referent of ambiguous utterance (Murakami & Hashiya, 2014), cognitive shift, and ToM, as well as measures of verbal and performance intelligence or developmental quotient, to 113 atypical development (Autism Spectrum Disorder, Attention Deficit / Hyperactivity Disorder, and Intellectual Developmental Disorder) preschool children. Results showed that RA performance significantly related false belief understanding only in children with ASD. In contrast, the relations between RA and age and intellectual ability were not observed. These findings suggest that the ability of disambiguation may have the relation to the ability to understand others' false belief.

#### Autism phenotype and models of lexical development

**Luca Surian** *University of Trent, Italy*

Can research on children with autism constrain theories about language development?



To address this question, I will briefly review previous works on language deficits in autism that are useful to identify a characteristic pattern of weaknesses and strengths. Then I will present some new studies from our lab on pragmatics and word learning. These experiments focus on the acquisition of names for artefacts and manipulated both morphological and functional aspects of the stimuli. The results support the claim that autism research can provide valuable input to answer fundamental questions about the nature of inferences underpinning the acquisition of mental lexicon and utterance interpretation. Specifically, research on autism and other atypical populations, such as deaf children, appear to be fruitful in illuminating the relationship between specific aspects of language processing and other components of the cognitive system such as the ability to represent structural information and reason about agents' intentions.

### Understanding violations of Gricean maxims in children with autism spectrum disorder

**Kosuke Asada** *The University of Tokyo, Japan*

Understanding conversational rules (i.e., Gricean maxims) is important for communication. We examined which conversational rules were difficult to understand for children with autism spectrum disorder (ASD). Children with ASD and typically developing (TD) children watched a puppet-play movie and they were asked to choose the puppet that gave silly or rude answers. There were five conversational rules, and each rule had five questions. Children with ASD performed significantly worse than TD children in the maxims Quality (i.e., to be truthful and avoid saying something lacking adequate evidence) and Quantity I (i.e., to avoid less information than is required for the current purposes of the conversation). In addition, we found that children with ASD at approximately 8 years old and TD Children at approximately 6 years old achieved an 80% accuracy rate. We discuss what causes the specific difficulty with the two maxims in children with ASD.

### CS039

#### New Perspectives on Social Cognitive Development in Humans

**Organizer: Masako Myowa-Yamakoshi**  
*Kyoto University, Japan*

##### Session Abstract:

From a developmental perspective, humans perceive equivalent relationships between their own and others' actions from very early in life (e.g., neonatal imitation). Some researchers argue that this process could be closely related to the mirror neuron system found in both humans and monkeys. However, the dynamic developmental course of the mirror neuron system is still unknown. For instance, are mirror neurons an innate trait or

do they acquire their sensori-motor matching properties ontogenetically in dependence upon the social environment? In this symposium, researchers from several fields will discuss the functioning of the mirror neuron system in relation to social cognitive abilities which are unique to humans. Integrating an interdisciplinary approach including psychology, primatology, and robotics, this symposium aims to evolve our understanding of how uniquely human social cognition develops.

### Baby see baby do? Comprehensive longitudinal study finds no compelling evidence of neonatal imitation

**Thomas Suddendorf, Janine Oostenbroek, Mark Nielsen, Jonathan Redshaw, Siobhan Kennedy, Sally Clark, Jaqueline Davis, Virginia Slaughter**  
*University of Queensland, Australia*

Human infants have long been assumed to imitate from the first weeks of life, with many influential theories placing this phenomenon at the foundation of social cognition. Here, however, in the most comprehensive longitudinal study of neonatal imitation, we fail to find any compelling evidence supporting its existence. Infants (N = 106) were presented with eleven social and non-social models and scored for their responses at one, three, six, and nine weeks of age. Longitudinal analyses suggested that the infants did not imitate any of the nine social models, although previous positive findings were replicated in limited cross-sections of the data. Our results call into question the idea of an innate imitation module and suggest that earlier studies reporting neonatal imitation effects were methodologically limited.

### Stealing the soul of imitation?

**Cecilia Heyes** *University of Oxford, United Kingdom*

The associative sequence learning theory (ASL) suggests that infants learn to imitate using domain-general mechanisms of learning and the rich resources provided by their socio-cultural environments. Addressing objections that have been raised against the ASL model, I will 1) review evidence that newborns do not imitate; 2) argue that infants receive a plentiful supply of the kind of experience necessary for learning to imitate; 3) suggest that neither infants nor adults can imitate elementally novel actions; 4) explain why nonhuman animals have a limited capacity for imitation; 5) discuss the goal-directedness of imitation; 6) present evidence that improvement in imitation depends on visual feedback; and 7) reflect on the view that associative theories steal "the soul of imitation" (Meltzoff, 2005).

### Simulating Fetal Sensory-Motor Experiences and Embodied Neural Learning for Understanding the

### Basis of Human Cognitive Development

**Yasuo Kuniyoshi** *The University of Tokyo, Japan*

Development is a continuous causal process involving complex interaction between genes, body, nervous system and environment. Although the whole process may be too complicated, fetal interaction and development can be relatively more tractable to model. From a dynamical systems point of view, the beginning part of the temporal development trajectory provides an important information about the underlying principles governing the developmental dynamics. We constructed a computer simulation model of a human fetus. It consists of a musculo-skeletal body, uterus, and basic nervous system. It exhibits spontaneous motor development and sensory-motor map organization comparable to human data. Also, by changing the model parameters, we can simulate "atypical" development. Our series of experiments shows that sensory-motor experiences in the fetal period can be crucial to the formation of body representations, which are significantly affected under "preterm birth" conditions, providing new insights about the developmental origins of social cognition and autism spectrum disorders.

### CS040

#### Motivation to become a teacher in different cultural contexts

**Organizer: Patricia Schuler** *Zurich University of Teacher Education, Switzerland*

##### Session Abstract:

Teachers play a crucial role in contributing to a diverse and concurrently "harmonious" society. Particularly teacher motivation and teaching-related competencies are assumed to positively influence teachers' professional development and their support of educational reforms, as well as students' learning. Studies investigating these effects are still scarce. The purpose of our symposium is to gain a better understanding of students' motivation to enter teacher education and to become a teacher, as well as their professional commitment and well-being. For this purpose, findings from 4 empirical (mixed-methods) studies are presented focusing on: 1) occupational choice, including the FIT-choice model (Watt & Richardson, 2008) and competence-based admission to teacher education; 2) aspects of social-cognitive theory such as self-efficacy and outcome expectations (e.g. Schmitz & Schwarzer, 2002); 3) professional competence development, including previous pedagogical experience and (in-)formal learning processes (e.g. Baumert & Kunter, 2006). Consequences for teacher education are discussed within an international perspective.

### Who decides to enter the teaching profession - and for what reasons?

**Silke Hertel (1), Tobias Dörfler (2), Birgit Spinath (1), Caroline Wahle (1)** 1. Heidelberg University, Germany; 2. University of Education Heidelberg, Germany

With our study, we aim at investigating the following research questions: (1) which students do decide to enter teacher education programs, (2) what are their particular motives, attitudes and beliefs related to the teaching profession, and (3) how do they view their further career regarding job demands and career opportunities? We set up a longitudinal study including multiple cohorts of students entering teacher education at two teacher education universities in Germany. Data collection starts in the second semester at university, students will be followed until graduation. The theoretical framework is based on the FIT-choice model (Watt & Richardson, 2008) and the model of teachers' professional knowledge and skills introduced by Baumert & Kunter (2011). Up to now, data from the first student cohort (N = 171) is available for analyses. Implications for students' career counseling, teacher education programs as well as the admission to teacher education are discussed.

### **Professional competence of student teachers in Hong Kong: Relationship with professional learning in Initial Teacher Education and teaching motivations**

**Angel K Wong, Yee Fan Sylvia Tang, May Hung May Cheng** The Hong Kong Institute of Education, Hong Kong

This study aimed to explore the predictive impact of professional learning in Initial Teacher Education (ITE) and teaching motivations on professional competence. 319 student teachers in their final year of the BEd programme completed the questionnaires developed by the researchers and 12 of them participated in a related interview. Factor analysis showed that the three variables are multi-dimensional, with five, seven and three factors extracted for learning in ITE, teaching motivations and professional competence respectively. Regression analyses indicated that while different kinds of professional competence were predicted by different combinations of factors in ITE learning and teaching motivations, all three types of professional competence were directly or indirectly predicted by the intrinsic teaching motivation of interest and efficacy in subject taught. More concrete contribution of this intrinsic teaching motivation to professional competence was illustrated by interview data. The significance of subject-oriented identity of student teachers would be discussed.

### **Competence-Based Admission to Teacher Education: The Predictive Utility of Realistic Job Expectations**

**Georg Krammer (1), Barbara Pflanzl (2), Markus Sommer (3), Martin Arensdasy (3)** 1. University College of Teacher Education Styria & University of Graz, Austria; 2. University College of Teacher Education Styria, Austria; 3. University of Graz, Austria

Teachers' professional development starts with their interest for this domain and is nurtured during their education. In occupational settings, the accuracy of job expectations has been suggested as a determinant for occupational success. This trait is strongly content specific and has been conceptually linked to domain specific interest and motivation. The current study examines (1) the individual differences in realistic job expectations of applicants to teacher education, and (2) the predictive validity of this latent trait. To this end, N = 176 applicants to teacher education completed a structured interview on their job expectations as part of their admission test. Grade point averages of the three-year long bachelor's degree separated for courses fostering declarative and procedural knowledge served as criterion variables. Structural equation modelling indicated the predictive validity of realistic job expectations over and above psychometric g and domain-specific personality traits. The talk also expands on the possibilities of replicating these findings.

### **I always wanted to make school a better place. Second career teachers' motivation**

**Patricia Schuler, Christine Bieri Buschor, Simone Berweger** Zurich University of Teacher Education, Switzerland

The aim of our longitudinal mixed-methods study was to analyse Swiss second-career teachers' motivation for their occupational choice, competence development and workplace learning. The sample comprises 403 participants on an alternative teacher training program, with former experience in the labour market, whose professional development has been assessed from the outset. Analysis from narrative interviews revealed 7 types of motivational patterns related to career change that are comparable to the motivational factors of the FIT-choice model. The quantitative analysis showed a substantial growth in competence during the job-integrated studies. Results from regression analysis revealed that in particular teaching-related self-efficacy, competence beliefs and previous teaching experience had a strong impact on their teaching-related competencies. Furthermore, they attributed a considerable amount of their competence development to coaching received from mentors, specific content-area coaches and fellow teachers at work. Additionally, informal learning from people within their private network played a crucial role.

### **CS041**

#### **Time perspective in developmental context**

**Organizer: Toshiaki Shirai** Osaka Kyoiku University, Japan

Discussant: Maria Paula A Paixão  
University of Coimbra, Portugal

#### **Session Abstract:**

Time perspective is one of important variables, which refers to the integration of the past, present, and future in an individual's psychological life space. Most influential theory is the Future Time Perspective (FTP) theory (Lens et al., 2012), which defines the concept of FTP as a cognitive-motivational construct. As the theory has been argued mainly in the educational settings, this symposium strengthens the body of the theory in application into the field of developmental research, based on the longitudinal studies and expanding the perspective of the theory towards the past in western and non-western contexts. Another organizer is Paula Paixão, Portugal; Speakers are Dora Herrera, Peru: Future orientation, academic success and well-being; Ineke Van der Veen, The Netherlands: TPs on school and professional career of students; Jaap Schuitema, The Netherlands: TPs in students and parents; Ryo Ishii, Japan: TP and identity; Toshiaki Shirai, Japan: TPs in adulthood.

#### **Future Orientation, aspirations and social variables related to academic success and well-being in university students**

**Dora I Herrera, Lennia Matos** Pontificia Universidad Católica del Perú, Peru

It has been theoretically and empirically supported that across life span, individuals build subjective images of their future. In this study, two psychological frameworks were used to grasp those images in the educational domain: a) Future Orientation-perspective (motivational, cognitive and behavioral) (Seginer, 2009) and b) Goal Content Theory (intrinsic and extrinsic aspirations) (Deci & Ryan, 2000). In order to deeply understand this domain, specifically at the university period, this investigation analyzed (cross-sectionally) the role of socio-demographic (gender, Socio-Economic Status) and psychological variables (future orientation and aspirations) in predicting academic success and life satisfaction. This was performed in a sample of 162 Peruvian university students using a stepwise regression analyses. Predicting variables accounted for 29.7% of variance on life satisfaction which was positively predicted by the motivational and behavioral components of future orientation. No significant effects were found for academic success. New researches are still needed in this field.

#### **Developments in time perspectives on school and professional**

### career of students in intermediate vocational education

**Ineke Van Der Veen (1), Ineke Peetsma (2)** 1. *Kohnstamm Institute, University of Amsterdam, Netherlands*; 2. *Department of Child Development and Education, University of Amsterdam, Netherlands*

Not much is known on the development in self-regulated learning behaviour of students in intermediate vocational education, and on related factors. Information on this is especially needed, as, in the Netherlands, in this school type the dropout rate is quite high. 616 first-year on average 18-year old students (age:wave1) in intermediate vocational education of two schools in different large cities participated. The students filled out a self-report questionnaire for four times during regular class time. As students in intermediate vocational education are expected to be focused on working in a profession, in this study future time perspective (FTP) developments were related to developments in self-regulated learning behaviour (school investment and academic delay of gratification). Results showed a decline in long-term FTP on school and professional career, and social relations, while long-term FTP on leisure stayed stable. A found decrease in self-regulated learning behaviour was partly explained by developments in FTP.

### Relations between developments in students' time perspectives on school and professional career and the importance attached to school by their parents

**Jaap Schuitema, Peetsma Thea, Van Der Veen Ineke** *University of Amsterdam, Netherlands*

Parental involvement has been found to be positively related to school engagement and may consequently be important for students' future time perspective (FTP) on a school and professional career. In this study we investigated the relationship student's FTP and their perception of the importance their parent attach to school. 700 students in the first two years of secondary school participated in the study. They filled in self-report questionnaires on short and long term FTP on school and professional career for five times in a period of two years. In addition a self-report questionnaire was used to measure students' perceptions of the extent to which their parents value school. The relationship between the importance attached to school by parents and FTP was assessed using latent Growth Curve Analyses. As expected the results showed positive relationships between perceived parent involvement and long term and short term FTP on school and professional career.

### The relationship between time perspective and identity formation

### with a focus on both identity formation processes and products

**Ryo Ishii** *Nagoya University, Japan*

This study investigated the relationship between time perspective and identity formation by focusing on both identity formation processes and products in the case of adolescents. A total of 108 undergraduates and vocational school students responded to a questionnaire survey, and were divided into 3 groups on the basis of their sense of identity score, which is an indicator of identity formation products. The results of ANOVA not only showed that there was a relationship between identity formation products and future time perspective, as previous researches have shown, but also showed that there was a relationship between identity formation products and present and past time perspectives, which has not been adequately dealt with in past research. The results of the correlation analysis suggested that each identity formation process has a different meaning and function, and is triggered depending on the extent of the sense of identity with regard to the product.

### Time orientation and identity development in early adulthood among college graduates

**Toshiaki Shirai (1), Tomoyasu Nakamura (2), Atsuko Higata (3)** 1. *Osaka Kyoiku University, Japan*; 2. *Kyushu University, Japan*; 3. *University of Kindai Himeji, Japan*

Time orientation refers to the predominant direction of individual's behavior and thoughts in the past, present, or future (Nuttin & Lens, 1985). Identity development can be led by a balanced time orientation, with which individuals not only pursue future goals but also combine them with living fully in the present (Shirai, Nakamura & Katsuma, 2012). This study examines this hypothesis by analysing the longitudinal data (N = 369) from age 20 to 34. Piecewise growth models showed that an increase in a balanced time orientation in age 20 to 28 increased in commitment in age 20 to 28 and increased in exploration in age 26 to 34. These findings suggest a balanced time orientation can produce a progression in identity cycle (Marcia, 2002) through strengthening commitment and arousing exploration, which leads to the construction of a new identity that can be fit to a new life state.

### CS042

### Time perspective in motivational context

**Organizers: Manabu Tsuzuki (1), Dora I Herrera (2)** 1. *Chuo University, Japan*; 2. *Pontificia Universidad Católica del Perú, Peru*

#### Session Abstract:

Time perspective is defined as "the totality of the individual's views of his psychological future and his psychological past existing

at a given time" (Lewin, 1951, p. 75). Time perspective consists of cognitive, affective and motivational aspects (Tsuzuki, 1999). Using this psychological function of time perspective, human beings can set goals in the future and preserve their efforts for attaining those goals. It can be said that time perspective motivates our behavior from here (present moment) to there (near or distant future) in the psychological flow of time. During this process, school environment and possible career choice of youth may have a great effect on the development of time perspective, while the total relationships among one's psychological present, past and future should be restructured. This symposium aims to clarify these motivational functions of time perspective in different cultural context investigating empirical data and theoretical considerations.

### Future time perspective and adaptability profiles in Portuguese VET and higher education-oriented students

**Maria Paula A Paixão (1), José Tomás Silva (2), Francisca C Duarte (3)** 1. *University of Coimbra, Portugal*; 2. *University of Coimbra, Portugal*; 3. *University of Coimbra, Portugal*

Students attending secondary education in Portugal can either choose VET courses or higher education oriented school branches. These different education pathways have a temporal duration of 3 years (from 10th to 12th grade). We carried out a longitudinal design with 3 waves of measurement involving 600 high school students (300 attending VET courses and 300 attending general courses) in order to analyze the relationship between the students' career plans and career adaptability characteristics, considering their FTP profiles. We also analyzed the differences existing in the FTP and adaptability profiles between the students attending the two educational pathways. The main results obtained are presented and their implications for career intervention are discussed.

### Relations between developments in students' time perspectives on school and professional career and in academic self-efficacy

**Thea Peetsma, Schuitema Jaap, Van Der Veen Ineke** *University of Amsterdam, Netherlands*

Different definitions have been used for the concept Future time perspective (FTP). In our study the concept FTP had affective, cognitive, and intentional components. Possibly, the combination of these components in FTP, especially the intentional component, could include an idea of (self)efficacy. In this study, we tested the dependence of both these concepts used in an academic context, as both FTP and self-efficacy proved to be important predictors of students' school investment. 700

students in the first two years of secondary education participated in the study. They filled in self-report questionnaires on students' FTP (short and long term) on a school and professional career and on academic self-efficacy five times during two school years. The relationship between students' FTP and academic self-efficacy was analyzed using latent Growth Curve Analyses. The results showed strong positive relationships between FTP on students' school and professional career and their academic self-efficacy.

### Development of Japanese version of adolescent time attitude scale (ATAS-J)

**Yuta Chishima** *University of Tsukuba, Japan*

The purpose of this study was to develop Japanese version of the Adolescent Time Attitude Scale (ATAS-J). The ATAS was originally developed by Worrell et al. (2013) and consists of six subscales assessing two valences (positive and negative) with each three time periods (past, present, and future). This scale have been translated and used in various countries. In this study, the ATAS was translated into Japanese, and the reliability and validity of ATAS-J was confirmed in samples of Japanese high school students aged 15–18 years old. Internal consistency estimates for scores on the ATAS-J were over .70. To examine structural validity, four models were compared by confirmatory factor analysis. Results indicated that a 6 factor model yielded the best fit for score. With comparing previous study, Japanese adolescents seemed to look more negatively to present and future.

### Influence of time relatedness on present behavior

**Akane Ishikawa** *Writing lab., Chuo University, Japan*

This study examined the influence of time relatedness on present behavior in undergraduates. Four hundred and six Japanese undergraduates were asked to answer a questionnaire in which different scales which measured the relatedness between past and present, present and future, and present behavior. Cluster analysis of index scores on four subscales pertaining to relatedness between past and present extracted four types of undergraduates; cluster 1 having strong ambivalence continuity ( $n = 142$ ), cluster 2 having negative continuity ( $n = 66$ ), cluster 3 having positive and negative continuity ( $n = 102$ ), and cluster 4 having positive continuity ( $n = 66$ ). A path analysis was applied for each four clusters to analyze the influence of relatedness between present and future on present behavior. There were differences among four types in the quality and strength of motivational effect that continuity from present to future had on present behavior.

### Career development and time perspective in undergraduate students

**Manabu Tsuzuki** *Chuo University, Japan*

This longitudinal study examined how the prepared behavior of career choice affected on time perspective. Ninety four Japanese undergraduate students answered a questionnaire during third and fourth grade. Using the sum score of four items which measured career prepared behavior (e.g. Start to collect information about a job.) in third grade, two groups were identified: un-prepared ( $N = 52$ ) and prepared group ( $N = 22$ ). Analyzing data with a two-way ANOVA (group (2) x time (2)) using the five subscales of time perspective, the following results were found: the prepared group had significantly higher score of future goal and planning, and lower score of emptiness than unprepared group. The score of emptiness for the prepared group significantly declined from third to fourth grade. The prepared group had a higher rate of job decision in fourth grade comparing un-prepared group. These results showed a positive relationship between career development and time perspective in undergraduate students.

### CS043

#### "What to" and "how to" study in self-regulatory research: Recent trends in view of various perspectives and approaches

**Organizers:** **Tadaharu Watanabe, Kazuko Takeo** *Tokyo University of Science, Japan*

Discussant: Noboru Takahashi  
Department of School Education, Osaka Kyoiku University, Japan

#### Session Abstract:

To live in society, appropriate control over expression of one's own desires and/or emotions and execution of actions, in short, socially appropriate self-regulation is important. In psychology also, attention was traditionally focused on development of children's self-regulation, accumulating much research. Depending on to what extent intrinsic or extrinsic factor is emphasized, such studies fall into 2 broad perspectives; focus on intrinsic and functional aspect such as personality and psychological function and focus on extrinsic and relational aspect such as human relations and socio-cultural environments surrounding children. Recently, the former type of studies clearly tend to examine more elaborated psychological mechanisms, while the latter tend to examine overall environmental change as a collective system including mother and child. The symposium aims to report study outcomes on children's self-regulatory behaviors from perspectives of cognitive process and mother-child relationship and discuss outlined differences and commonalities and possible future studies.

### Is an understanding of the need to control emotion central to their regulation of actions and emotions?

**F Cansu Pala (1), Charlie Lewis (2)** *1. Ege University, Turkey; 2. Lancaster University, United Kingdom*

The factors underlying the cognitive and emotional aspects of self-control have proven difficult to disentangle. It is important to develop online assessment of the child's emotional understanding rather than resorting to retrospective measures or parental report when investigating the links between these domains. We describe a measure in which the child reacts to scenarios which prompt online emotional assessments: the Scale for Understanding the Regulation of Emotion (SURE). Study 1 ( $N = 62$ ) found that between 3 and 5 years children come to understand the importance of displaying regulated emotion over expressions which match their feelings. In Study 2 ( $N = 120$ ) this comprehension of Emotion Regulation in the SURE was closely related to preschoolers' performance in tasks requiring Conflict-Inhibition, but not online Emotion Regulation. The data suggest the child's grasp of emotion regulation may be important in the development of a range of social understanding and self-control.

### Development of conflict management strategies of children in China, Japan, and South Korea and parent's behaviors and ways of thinking

**Hiroki Maruyama** *Aichi Shukutoku University, Japan*

It is known that having conflicts with others are associated with the development of conflict management strategies and self-regulation. Therefore, data on the relationship between the development of the conflict management strategies of 3- 4- 5- and 6-year-old children in China, Japan, and South Korea and parent's behaviors and way of thinking was investigated. Results indicated conflict management strategy that was utilized varied according to conflict situations. For disagreement, 3-year-olds in all three countries equally preferred the dominating strategy. For competition for resources, 3-year-olds across the three countries differed in the preferred strategy. Moreover, parent's behaviors and ways of thinking were related to conflict management strategies. Based on these findings, the development of children in the three countries is discussed.

### Developmental change of infant self-regulation as one aspect of mother-child joint development

**Tadaharu Watanabe, Kazuko Takeo** *Tokyo University of Science, Japan*

This presentation reports theoretical background and survey outcomes of research

into “developmental change of infant self-regulation in context of mother-child joint development.” This project views development of infants’ self-regulation (self-assertion/self-inhibition) as “one aspect of mother-child joint development.” Rather than viewing such as ability and characteristic changes of individual children, it intends to observe self-regulation in the comprehensive context of mother-child interrelationship and relationships in overall everyday lives including mother-child interrelationship. Under such theoretical and methodological background, longitudinal study was carried out on 7 infant pairs aged around 2 years and mothers until reaching 5 years and 1 month, combining (1) interviews with mothers about children’s self-regulatory behaviors, their reasons, emotions, and mother’s responses to such and (2) experiment and observation of mother and child together solving puzzles plus review interviews. This reports the analysis of the interviews with mothers of infants between 2 to 2-year-and-11-month.

## THEMATIC SESSION

### TS048

#### Understanding the mental state of others: Current directions in Theory of Mind research

**Organizers:** *Fumikazu Furumi (1), Ai Mizokawa (2)* 1. JSPS/Kobe University, Japan; 2. Meiji Gakuin University, Japan

**Discussant:** Charlie N Lewis

Lancaster University, United Kingdom

#### Session Abstract:

For more than 30 years, theory of mind (ToM), the ability to attribute mental states to others, has been one of the most popular topics in developmental psychology research (e.g., Wellman, Cross, & Watson, 2001). Koyasu (2009) proposed a schematic model of unified theory of understanding other people’s mind. The model consists of three components: ToM (cognitive mindreading), perceptual mindreading, and affective mindreading. This symposium brings together researchers who are using a range of approaches to reveal the ToM developmental process from early childhood to adulthood. The papers in the symposium address ToM development from the perspectives of emotion, morality, role-play, and autism spectrum disorders. The aim of the symposium is to present the latest advances in our understanding of Koyasu’s (2009) model. The discussion will highlight new generation and future directions of ToM research. In essence, the symposium will constitute an important step towards stimulating new generation ToM research.

#### Children’s response to positive feedback after failure and Theory of Mind

**Ai Mizokawa** *Meiji Gakuin University, Japan*

Individual differences in response to positive feedback (praise) after failure, and their link with individual differences in Theory of Mind (ToM), were examined in 61 young Japanese children (mean age = 5.78, SD = 0.59). Participants completed a test battery that included tasks assessing response to praise in failure situation, verbal ability, and ToM. Children’s response to praise was assessed using a hypothetical scenario in which a puppet child representing the participant experienced failure in a puzzle game, but a puppet teacher nevertheless provided praise on the work. The results showed that, after teacher praise, children who recognized their failure received the praise positively, but lost their motivation to persevere. It was also found that children with more advanced ToM were less surprised about receiving praise, but they also rated their ability lower after receiving such praise. These findings highlight the importance of understanding individual differences in ToM development in parenting and education settings.

#### Does omission bias make a change in the perception of intention?

**Hajimu Hayashi** *Kobe University, Japan*

Adults show omission bias, or the tendency to judge acts of commission as morally worse than equivalent acts of omission. However, whether omission bias is also seen in children is still an open question. We required children and adults to make moral judgments by comparing two similar stories, where the only difference was the protagonist’s action: commission or omission. The protagonist’s intention and the outcome were kept constant in each story. From the results, 7-year-olds as well as adults judged that the agent who did something (commission) was morally worse than the agent who did nothing (omission). Most participants rated the intention of the ‘commission agent’ as stronger than that of the ‘omission agent.’ Furthermore, the moral judgment questions and the intention questions were significantly correlated. Therefore, omission bias is clearly seen in children as well as adults. In addition, omission bias is likely to produce differences in perceived intention.

#### Role-play facilitates reading the mind of characters with inversed and reversed perception

**Fumikazu Furumi (1), Megumi Masuda (2), Masuo Koyasu (2)** 1. JSPS/Kobe University, Japan; 2. Kyoto University, Japan

Forty university students were introduced to a Director task. There were two directors: one was a female and the other was an alien with inversed and reversed perception. When the female stood at the opposite side, participants should consider her “right” as “left” and vice versa. When the alien director gave the orders on the same side as participants, they were

required to think about the alien’s inversed and reversed perception. In contrast, when the alien stood on the opposite side, participants should consider only the alien’s inversed perception. Half of the participants (role-play group) experienced direct communication with the female in conditions wearing inversion and reversion glasses. The other half (no-role-play group) only saw another’s role-play in conditions wearing inversion and reversion glasses. The result was that the role-play group made fewer errors than the no-role-play group when the alien director told the gave orders from the opposite side.

#### A case of acquisition of mentalizing from various forms of media by a child with autism

**Toru Goshiki** *Ryukoku university, Japan*

It is generally thought that people with autism have difficulty understanding the mental states of others, and this may be due to an innate weakness in mentalizing. Typically developing individuals may rely on common sense or empirical knowledge, as well as logical thinking, to guess other people’s mental states. It is possible that typically developing individuals acquire some of this knowledge through various forms of media, such as books, cartoons, television dramas, and comics. Therefore, this knowledge might be in the form of stories. Children with autism often use such knowledge. However, we sometimes find that their use of this knowledge is too inflexible, for example, they use words that they heard on TV exactly as they were used on TV. Here, I present a case study in which a child with autism acquired understanding of another person’s mind through the use of words learned from various forms of media.

#### Empathy and perspective taking in autism spectrum disorders

**Hidetsugu Komeda** *Kyoto University, United Kingdom*

Individuals with autism spectrum disorders (ASD) are thought to experience difficulty empathising with others and taking other people’s perspectives as an essential part of theory of mind. In this talk, first, I will describe our recent fMRI study on how individuals with ASD regard other individuals with ASD, focusing especially on empathy based on similarities between perceivers and targets. Our findings suggest that individuals with ASD have empathic responses towards others with ASD. Second, I will talk about our ongoing fMRI study about perspective taking based on altered time perception in ASD. Individuals with ASD rely on spatial information rather than temporal information when understanding stories with temporal and spatial changes. It suggests that one of the reasons for the atypicality about theory of mind is based on the difficulty in sharing temporal information with other people.

**TS049****Lights and Shadows of In- and Out-group Bias: From Development and Evolutionary Views**

**Organizer: Kazuhide Hashiya** Kyushu University, Japan

Discussant: Takahiko Masuda  
University of Alberta, Canada

**Session Abstract:**

When discussing origins of cooperation, empathy, and other forms of interactions and their underlying mechanisms relating to social bonding, ingroup and outgroup bias come to be one of the important factors to be considered. However, how researchers, and individuals involved in social interaction, could define them and draw the line between "us" and "them"? The point here should be that this "line" is rather flexible, not simply reflecting the category defined by nationality, race, language or any other forms of social markers. The symposium will present empirical researches about detection of social markers and its usage in human adults and children, developmental course of "we-ness", and other relating topics of in-group favoritism and nepotism. And, based on these studies, our discussion aims to approach to the instability of the concept of the "group" for the individual, and how humans flexibly cope with such instability.

**Possible factors forming in-group preference in 3–4 year old children: through the looking preference studies**

**Kazuki Maeyama, Kazuhide Hashiya** Kyushu University, Japan

Children often show "in-group bias", or the preference for the category which shares common feature with the children themselves. However, we should also note that the definition of "in-/out-group" flexibly changes reflecting the category taken to be focused. The current study examined looking preferences of 3- and 4- year-old children in the context that 2 agents, each represents one of 2 different categories respectively, and one is shared with the participant but another is not, interacting in the wrestling game presented in the monitor. The pairs of categories tested were "adult/child", "child/baby", "language same/different", "wearing same/different wrist band", "winning/losing", "girl/boy", and so on with additional control conditions. The preliminary analysis suggests the looking preferences for "losing", "infant", "same sex". This simple procedure might open the future possibility to access the developmental course of "empathetic concern" toward particular categories that might "outline" the in-/out- biases of humans.

**Culture and the Perception of Social Context: How Cultural Background and Social Orientation****Affects In-group and Out-group Judgments**

**Matthew J Russell (1), Takahiko Masuda (1), Keiko Ishii (2), Koichi Hioki (2)** 1. University of Alberta, Canada; 2. Kobe University, Japan

Previous research has found that North Americans tend to be more independent, viewing individuals as separate from their contexts, and East Asians tend to be more interdependent, viewing individuals as embedded in their contexts. Furthermore, these differences were linked to social attention related behaviors and Event Related Potentials (ERPs)-brainwaves linked to psychological events. East Asians were found to be more influenced from social context in emotion judgments (than North Americans). Also, only East Asians showed a greater error-related processing (through ERPs) when emotions differed between central and background faces. Extending this research, our laboratory has recently found that cultural differences may be more nuanced, with more interdependent individuals being more likely to be influenced by social contextual cues for close and acquaintance relationships, and more independent individuals being primarily influenced by these cues for close relationships. We discuss these findings in terms of in-group and out-group social processes.

**Deconstructing in- and out-group biases: An ethnographic approach**

**Akira Takada** Kyoto University, Japan

Since Barth's (1969) seminal study, socio-cultural anthropologists have focused on the ways in which the constituent members of social groups, such as ethnic groups, can move across the group boundaries. The !Xun San are indigenous former hunter-gatherers, and a regional minority in north-central Namibia. Compared to other San groups, the !Xun are considered to have lived in relative harmony with neighboring Owambo agro-pastoralists, who constitute the majority in north-central Namibia. This is because, historically, the !Xun have constructed multifaceted relationships with the Owambo through direct interactions, such as trading, child fostering, and intermarriage between the two groups and, consequently, they have formed social institutions that transcend group boundaries. Analysis of these relationships suggests that the possibility of moving across the group boundaries can weaken in-group favoritism and xenophobia. Differences in action between in- and out-group members are considered to be embedded in daily cultural practices, rather than constituting individual traits.

**TS050****Factors That Influence the Development of Fairness from Infancy through Childhood: Evidence from China and USA**

**Organizer: Wen Liu** Liaoning Normal University, China

**Session Abstract:**

In recent years, the development of fairness in infants and children has become a hot issue. Considerable research has been conducted, covering children's knowledge of equity and tendency to distribute resources equitably. This symposium aims to examine the development of fairness in infants and children and as well as factors that influence fairness development. The results of these papers showed that: (1) 2~3 years old Children already possessed equity sensitivity; (2) 3~5 years old children's distributive justice behavior increases with age and is influenced by participants' involvement degree in the distribution and theory of mind; (3) 5~6 years old children's inequity aversion shows the age-related difference and is affected by empathy; (4) 3~8 years old children's fairness development includes overcoming initial social comparison bias; (5) socio-moral concerns are experientially are experientially influenced, and developmental changes and individual differences in fairness concerns.

**The role of empathy in 5~6 years old preschool children's inequity aversion**

**Wen Liu (1), Guoqi Wen (2), Xintian Tu (3)** 1. Liaoning Normal University, China; 2. Qiqihar University, China; 3. Miami University, United States of America

Disadvantageous inequity aversion and advantageous inequity aversion are two forms of inequity aversion, both of which are passive reactions young children have against unfair results and unjust intentions. In this study, Ultimatum Game variant was applied to present allocation proposals by third-party. Mixed experimental design was 2 (empathy arousal level) × 2 (proposal type: advantageous proposal, disadvantageous proposal) × 2 (age). Empathy artificial arousal was accomplished in the experimental group by presenting the virtual playmates' emotion feedback to participants, and all tasks were presented with computer. The results showed that, (1) Empathy arousal level influenced 5-to-6-year-olds' disadvantageous inequity aversion and advantageous inequity aversion. With empathy aroused, children showed more disadvantageous and advantageous inequity aversion; (2) Five-to-6-year-old Children's disadvantageous inequity aversion was affected more by the level of empathy arousal; Compared with 5-year-olds, 6-year-olds expressed more inequity aversion when they cared about playmates' emotion.

**Equity Sensitivity in 2~3 Years Old Children in a Resource Distribution Task**

**Wen Liu, Lin Zhu, Xue Zhang** Liaoning Normal University, China

This study aims to investigate the developmental characteristics of children's equity sensitivity and the factors influencing equity sensitivity in resource allocations. In Experiment 1, equity sensitivity in 130 2~3 years old children was investigated by using a third-party VOE paradigm. The results showed that: (1) Looking time to the unfair distribution was much longer than looking time to the fair distribution; (2) There was an increasingly strong preference for the unfair distribution from ages 2 to 3. In Experiment 2, 60 2~3 years old children were examined to explore the question of how the impact of the presence of recipients (recipients versus no recipients), and the number of resources divided (2 versus 4). The results showed that looking time to unfair distribution was longer than to the fair distribution for both 2 and 4 resources only in the context in which recipients were present.

### **Distributive Justice of Young Children and The Relationship between It and Theory of Mind**

**Xue Zhang (1), Wen Liu (2)** 1. *Liaoning Normal University, College of Psychology, China*; 2. *Liaoning Normal University, College of Psychology, China*

Merit is a key principle of fairness: rewards should be distributed according to how much someone contributed to tasks. Here we provide evidence that three years old children already use merit principle to allocate rewards. Study 1, Reward resource allocation paradigm was used to investigate the development of 186 children's distributive justice behavior in two contexts. The results showed the distributive justice behavior of 3 to 5 years old was increased with age and the situational involvement levels had an significant effect on it. Study 2 explored the relationship between the distributive justice behavior and theory of mind of 125 young children aged 4 to 5 years old, and confirmed that the children who passed Theory of Mind tasks perform much more fairly than the children who did't pass in two context, The theory of mind ability may promote the fair distributive behavior of young children.

### **The Impact of Social Comparison on The Gap between 3~8 year-old Children's Fairness Cognition and Behavior**

**Wen Liu (1), Yu Zhang (2), Xintian Tu (3)** 1. *Liaoning Normal University, China*; 2. *Liaoning Normal University,, China*; 3. *Miami University, United States of America*

Children endorse fairness norms related to sharing, but often act in contradiction to those norms when given a chance to share. They are typically not averse to others receiving less than themselves. Here we offer clear evidence of this discrepancy and go on to examine the possible explanations for its diminution with age. In study 1, 240 3~8 years old children

readily stated that they themselves should share equally, nevertheless, children failed to engage in equal sharing until ages 7-8. In study 2, we found that 5~6 years old children would take a cost to avoid being disadvantaged, and they would spitefully take a cost to ensure that another's welfare falls below their own. These results suggest the development of fairness concerns among 3~8 year-old children includes overcoming an initial social comparison preference for ensuring that one gets no less than others.

#### **TS051**

### **The Role of Social Touch in the Development of Infants' Body Representation**

**Organizer: Masako Myowa-Yamakoshi**  
*Kyoto University, Japan*

#### **Session Abstract:**

Understanding other individuals' actions is a fundamental component of social cognition (anticipating other's future actions and appropriately adjusting one's own behavior). Since representations of the body may facilitate infants' registration of the similarities between self and others, from a developmental perspective, acquiring body representations is important. The aim of this symposium is to discuss how body representation occurs in early human development and the neural and psychological mechanisms that underlie this development. The speakers here specialize in body representation development using neurophysiological and behavioral methodologies. This symposium will focus on the role of touch in early social interaction with caregivers. We assume that daily experience of mother-infant tactile interactions influence the infant's capacity to process somatosensory and proprioceptive information, thus arousing their sense of body. Emphasis will also be placed upon bringing together these different levels of evidence between infants' brain and behavior in the development of their body representations.

### **The sense of self: body for action, action for body**

**Tomohisa Asai** *NTT Communication Science Laboratories, Japan*

Awareness of our own body (sense of body-ownership) and action (sense of agency) are woven into the unified representation of the self. The sense of body-ownership involves the integration of vision and somatosensation. The sense of agency requires consistency between motor prediction and actual sensory feedback. How are these components for the self interacting with each other? The current study tackled this question by utilizing a well-known rubber hand illusion (RHI) for adult participants, where watching a rubber hand being stroked for a short time synchronously as one's own unseen hand is also stroked causes the observers to attribute the rubber hand

to their own body. The results indicated the "cross-referred" relationship between body and action, that might construct the unified sense of self.

### **Integration of auditory and tactile information affected by tickling interaction in infancy**

**Yukari Tanaka** *Kyoto University, Japan*

Tickling is generally observed as a multimodal interaction between caregivers and infants. To react interactively to multimodal stimuli, infants have to process the stimuli simultaneously and integrate them. However, it is unknown how audio-tactile information is integrated in infants' brains through such experiences. We investigated infants' neural processing affected by tickling interaction with adults. Seven- to eight-month-olds heard one pseudoword while being tickled (tickling condition) and another while not being tickled (control condition). Next, we used an electroencephalogram (EEG) to measure the infants' brain activity when they heard the same words. In the left frontal-to-temporal region, the EEG amplitudes of the early (50-200 ms) and late periods (500-900 ms) in the tickling condition were larger than those in the control condition. This suggests that tickling experience facilitates primary sensory processing and the integration of audio-tactile information, which might enable infants to predict upcoming multimodal stimuli when interacting with others.

### **Haptic-emotional shared representation in parieto-insular regions of the macaque monkey**

**Hiroaki Ishida** *Tokyo Metropolitan Institute of Medical Science, Japan*

Concerning non-verbal communication both in humans and non-human primates, several studies have demonstrated the existence of a neural mechanism that allows a basic and direct form of action recognition of others. Furthermore, such mechanism of neural resonance seems to be also involved during the observation of another individual's emotions and sensations. In non-human primates, the secondary somatosensory cortex (SII) and insular cortex (IC) show the hand and mouth representations and the hand-mouth region of SII/IC is characterized by the presence of reciprocal connections with the regions that mirror neurons discovered (areas F5 and 7b). In my talk, I'll demonstrate a hand-mouth-movement related activity in the SII/IC of macaque monkey. Most interestingly, in our pilot study we also found a few neurons that responded not only during a specific hand-mouth movement of the macaque monkeys such as self-grooming but also during grooming action observation.

#### **TS052**

### **The effects of co-cooking and**

### **eating/drinking activities between children and adults on their psychological development**

**Organizer: Nobumoto Tajima Shirayuri**  
*University, Japan*

Discussant: Ryuta Kawashima  
IDAC, Tohoku University, Japan

#### **Session Abstract:**

Recently, several studies in "brain science" have suggested that the activity observed in the children's co-preparing and taking foods with adults effect the psychological development of children and adults equally. In this symposium, 3 studies in "developmental psychology" are presented on the above topic. One of them shows the development of the structure and function of activities in the process of children's co-making the concentrated lactic acid drink called "CALPIS" weak, and taking it with their parents. It also suggests the effect of those "CALPIS" collaboration on their development. The second one suggests the effect of "CALPIS" collaboration on child development is observed even in the interaction between disordered children and their stuffs of the institute. The final one also suggests that the collective and cooperative cooking and drinking "CALPIS" among the day-nursery children and elderly people in the regional area, have a good effect on their psychological development.

### **Characteristics of the mother-child interactions observed during co-cooking activities**

**Megumi Kotani Calpis Co.,Ltd., Japan**

"CALPIS" is a concentrated lactic acid drink that has been consumed for many generations in Japan. We previously reported that the mother-child activity of co-making "CALPIS" contributed to the child's cognitive and social-emotional development through the process from "other-dependent learning" to "self-dependent learning". In the current study, we conducted the intervention program experiment among 4- to 8-year-old children and their mothers. We found that mother-child interaction in three variations of co-cooking activities (pancake cooking, dessert preparation with milk, and "CALPIS" preparation) resulted in high levels of mother-child interaction, as did co-folding of origami papers. We discuss the characteristics of the mother-child interactions observed in the co-cooking activities compared with those observed in the co-folding origami paper activity. Finally, we propose the uniqueness of the "CALPIS" collaboration in regards to the difficulty of the co-cooking activity. Megumi Kotani is an employee of Calpis Co.,Ltd.

### **Developmental support for a child with Down syndrome using snack routine with co-making CALPIS.- To facilitate spontaneous and communication behavior-**

**Tsutomu Nagasaki Jissen Women's University, Japan**

Generally, children with disability have a tendency to acquire "learned helplessness", because they have been held too much and it causes their spontaneous behavior decreased. It is a big issue that they need an early intervention to encourage their spontaneous behavior. Intervention program using snack routine with making CALPIS for avoiding "learned helplessness" was planned for a child with Down syndrome of two years old. Making CALPIS is consisted of opening a cap of a CALPIS bottle, pouring CALPIS and water into a cup and mixed with a muddler for him and his mother. Snack routine included 30 constituents of understanding and 12 constituents of expression. The results were as follows. For constituents of understanding of snack, as manual guidance decreased and modeling increased, the rate of spontaneous behavior got 60% around session 7th. This work was sponsored by Calpis Co.,Ltd., having no role in study design, data collection and analysis.

### **Co-making and drinking "Calpis" activity as cultural tool to mediate communications between preschoolers and aged people**

**Takahiro Miyashita Shirayuri University, Japan**

While facilitating communications between preschoolers and aged people is not easy, there have been various attempts and enterprises in Japan such as holding events for preschoolers to communicate naturally with the aged in local community. As co-making and drinking "Calpis" activity is simple and easy for them, our observational study of interactional event held in a day nursery found that those activity might promote active communications between them. There happened not only talking about how to make it delicious, but also sharing their experiences and memories of co-making with their family members. This kind of interaction was supposed to form the basis of their familiar relationship. I will discuss the co-making and drinking "Calpis" activity functioning as "Communication Tool", as one the "Cultural Tool (Wertsch, 1995)". This work was sponsored by Calpis Co.,Ltd., having no role in study design, data collection and analysis.

## **ORAL PRESENTATION**

### **OR0561**

**The stability of undergraduates' judgments of posthumous function in responses of two questionnaires in a year**

**Yuko Amaya Nagoya City University, Japan**

This study proposes two hypotheses: first, undergraduates' judgments of posthumous

function are not haphazard but are quite stable even though they have never thought about the contents and there is no universal answer; second, there are a few undergraduates who respond positively and consistently about posthumous function. In total, 167 Japanese undergraduates responded to the questionnaire twice in a year. At both times, they provided negative responses to questions concerning the performance of physical and subjective activities; however, some responses for questions regarding the physical and subjective activities of brain-dead people were positive, compared with those for questions regarding the physical and subjective activities of dead people. Significant values of Cramer's V were found for all brain-dead people and some dead people. In conclusion, we could support the first hypothesis, but the second hypothesis could not be supported, except in case of brain-dead people.

### **OR0562**

**Colombian adolescents well being. The role of emotional regulation, proactive coping, optimism, and pro-social behavior**

**Sonia Carrillo, Karen Ripoll, Yvonne Gomez, Carlos Cortes Universidad de los Andes, Colombia**

Interventions to prevent or treat psychological problems in adolescents should focus on developing skills that help them cope with life demands and enhance their wellbeing. Theoretical perspectives such as Positive Psychology emphasize the need for intervention research that pays attention to the development of strengths. This paper presents findings from the first two years of an ongoing research project that seeks to develop a school-based intervention program to develop positive skills in adolescents in Colombia. Nine hundred adolescents answered a questionnaire that evaluated proactive coping, emotional regulation, optimism, pro-social behavior, perceived life satisfaction and wellbeing. Results from correlation and multiple regression analyses indicated that perceived life satisfaction and wellbeing are positively associated with the positive skills mentioned above. Other analyses regarding moderation effects of socio-demographic and contextual variables are also presented. Findings are discussed based on recent research on adolescents' wellbeing and existing interventions to develop positive skills.

### **OR0563**

**A research project on the development and application of educational support for at-risk children of economically disadvantaged and multi-cultural families**

**Jae Kyoung Cha (1,2), Jinho H Kim (1,2)**  
1. Soonchunhyang University, Korea, Republic of Korea; 2. Soonchunhyang University, Korea, Republic of Korea



Recently, a perspective that at-risk children should be provided with a service of special education is emerging as an important issue of education in Korea, because they have not yet been diagnosed as children with disabilities, but have higher possibility of showing disabilities in future than the average. Among those, children of economically disadvantaged and multi-cultural families may have much higher possibility of being at-risk children than general children due to environmental deficiency and/or low socioeconomic status. However, if those children are screened early and provided with appropriate and efficient early support programs, then their disabilities can be prevented or lowered. Therefore, the purpose of this research is to develop and apply an educational support program, which is to provide early screening and intervention service for such children and their families. Therefore, the research project for at-risk children is organized into four categories: early screening, children intervention, parents education and counseling, and expert training.

#### OR0564

##### **Helicopter parenting and the psychological adjustment of Hong Kong Chinese university students** *Hiu Man Chiu, Qian Wang The Chinese University of Hong Kong, Hong Kong*

This research examined how helicopter parenting (defined as parental over-involvement in youth's lives, e.g. "My parents make important decisions for me.") may relate to Hong Kong Chinese youth's perceived parental provision for them (behavioral provision, e.g. "I often depend on my parents for help and advice," and emotional provision, e.g. "I feel that my parents really care about me."), youth's emotional ill-being (a composite of anxiety and depression) and school engagement. Participants were 303 university students (205 females; mean age = 19.89 years, SD = 1.89) who reported on the aforementioned constructs. Helicopter parenting was positively related to perceived parental behavioral provision but negatively related to perceived parental emotional provision; it was also positively related to youth's emotional ill-being and negatively related to youth's school engagement,  $|r| > .15$ ,  $p < .001$ . Perceived parental emotional provision partially but significantly accounted for the relations from helicopter parenting to youth's emotional ill-being and school engagement (Sobel test:  $|Z| > 2.49$ ,  $p < .05$ ).

#### OR0565

##### **Predicting who does well: Adolescent predictors of healthy psychosocial functioning at age 25** *Paul H Delfabbro, Jeremy Stevenson, Helen R Winefield, Anthony H Winefield University of Adelaide, Australia*

The WHO conceptualises health as a complete state of physical, mental and social wellbeing. While most young adults in developed nations experience good physical health, 25% of this age-cohort is often negatively affected by problems relating to psychological health. Here we describe findings from a 10-year longitudinal study of 382 young people from age 15 to 25 years designed to identify adolescent predictors of adult well-being. Using Diener's (1984) framework for assessing subjective well-being, we examine the adolescent predictors of membership in age-25 clusters classified by variations in well-being indicators including life-satisfaction, negative affect, self-image and social functioning. Those who were doing less well at age 25 generally scored poorer on most measures on psychological and social functioning at age 15. Satisfaction with body-image at age 15 was found to be the strongest predictor of membership in the cluster with the higher levels of subjective well-being at age 25 years.

#### OR0566

##### **Formation of maturity and responsibility of psychologists**

*Liudmila Dmitrieva Russian University of People's Friendship, Russia*

Exploring professionally important qualities of psychologists in the writings of world experts, we came to the conclusion that the most meaningful are 5 qualities: authenticity, empathy, desire to self-understanding and self-discovery, creativity and intuition. Our experiment involved 4 groups: 45 young students, 30 magister students, 30 young professionals, 30 experienced psychologists. Part of authenticity is maturity and responsibility. Maturity correlates with self-leadership in the 1st group in the 5th factor; and with self-actualization, support, value orientations, flexibility behavior, spontaneity, self-esteem, self-acceptance, communication, creativity and orientation in time in the 4th group (1st factor). Responsibility in the 4th factor correlates with romantic thrust and don't desire to include intelligence; it increases from junior to senior students; in the 3rd group (6th factor) it correlates with the aesthetic emotional thrust, value orientations, self-esteem, self-confidence, self-value; in the 4th group it locates in the 7th factor of responsible for the active target communication.

#### OR0567

##### **Interventions addressing disability in children at environmental risk in Indonesia: A scoping review**

*Clemence Due (1), Indra Y Kiling (1), Deborah Turnbull (1), Dominggus E Li (2) 1. The University of Adelaide, Australia; 2. Harvard Kennedy School, Indonesia*

Background: Young children living with disabilities in Indonesia face various

environmental risks such as poverty and stigma, which have the potential to impact their development. Method: This scoping review examines the current literature addressing interventions to support these children. Results: Only eight studies met our inclusion criteria, indicating a dearth of research. The extant research reported on a range of approaches including music therapy and a board game, with two studies employing Indigenous Indonesian strategies. No interventions took account of environmental risk. All studies used single-case experimental designs and were marked by a number of other significant methodological limitations. Conclusions: This review indicates the need for high quality research to address the needs of the large numbers of children living with disability and who face environmental risks. Programmes need to take account of the relatively underdeveloped mental health workforce as well as other issues related to access to services.

#### OR0568

##### **"Have You Thought About Our Marriage Life Yet?" : a Study about Future Orientation on Marriage Area in College Students**

*Gaida Faza, Amanda Nurshadrina, Yanti Rubiyanti Universitas Padjadjaran, Indonesia*

College students are people who study in college who generally about 17–23 years old. Based on Erikson's psychosocial theory, there is main developmental task that someone have to face; building intimate interpersonal relationship. When he confront it, he's going to think how marriage life he would have. For knowing the readiness on marriage area from students of Faculty of Psychology Universitas Padjadjaran, we measure their future orientation on marriage area. The method that the researcher used is filling a questionnaire. The participants is divided into two categories; category I, who ever thought about marriage life (28 participants) and category II, who never thought about marriage life (11 participants). The result shows, there are 60,71% participants in category I who had clear future orientation. In category II, there are only 27,27% participants who had clear future orientation. It indicates that thought about marriage life influenced someone's future orientation on marriage area.

#### OR0569

##### **Resilience development and influences on wellbeing of migrant and left behind children**

*Yao Fu, Zhu Mingjing, Liu Qian, He Yunfeng, Zhang Xingli, Shi Jiannong Institute of Psychology, Chinese Academy of Sciences, China*

Migrant children and left behind children suffer more from unstable living environment or

departure from parents than normal children. As most studies indicated their dysfunctions of emotion and behavior, the present study assessed the level of resilience of migrant and left behind children from seven representative regions of China to investigate their positive aspects. The developmental trajectory of resilience was explored, showing that older children had less resilience than younger ones. Normal children resilience was higher than migrant children, and left behind children had the least resilience. Differences in resilience among different types of children changed along age. Resilience reduced the depression and improved the psychological wellbeing of migrant and left behind children. The study demonstrated different age effect in resilience among migrant, left behind and normal children. Improving resilience especially for childhood migrant and left behind children might contribute to their wellbeing even in a worse living environment.

#### OR0570

##### **Child Stress as a Mediator of Intergenerational Transmission of Depression**

*Micah Gerhardt, Xin Feng, Seulki Ku Ohio State University, United States of America*

Children of depressed parents are more likely to experience depression. However, the mechanisms of transmission remain relatively unexplored. This study attempts to further understanding of the transmission of depressive symptoms from parents to children. Data were drawn from the NICHD Study of Early Child Care and Youth Development study. Only children ( $N = 710$ ) with both parents living at home at 54 months were included. Maternal and paternal depression were used as predictors and child depression as the outcome. A latent variable, child stress, including income-to-needs ratio, chaos at home, and the relationship between the child and each parent individually was created. Child stress significantly mediated the relation of both maternal and paternal depressive symptoms with child depressive symptoms, the model demonstrated adequate fit ( $RMSEA = .058$ ). Results supported the hypothesis that child stress serves as a mechanism for the link between parental and child depression.

#### OR0571

##### **Parenting Style and Psychological Reactance: The Mediating Role of Personality**

*Chuanhua Gu, Mei Han, Hui Wang, Yaxian Wang, Yukang Xue School of Psychology, Central China Normal University, China*

Psychological reactance is a motivational force that may arise when one's freedom is threatened (Brehm, 1966). The purpose of this study is to explore relationships among parenting

style, personality and psychological reactance. A total of 263 junior middle school students in China's countryside filled in Psychological Reactance Scale, Chinese version of EMBU, and CBF-PI-B to measure psychological reactance, parenting style, and personality, respectively. Results were as follows. Firstly, significant gender and grade differences were found in the score of reactance. Secondly, psychological reactance was significantly correlated with neuroticism, openness, extroversion, and parenting style except the dimension of parental partiality. Thirdly, neuroticism mediated the association between paternal behavior and psychological reactance, while openness and extroversion mediated the association between parenting behavior and psychological reactance. These findings suggest that the relationship between parenting style and reactance is different for those adolescents with different personality traits.

#### OR0572

##### **Effects of Extrinsic Motivation on Adolescent Scientific Creativity and Artistic Creativity**

*Chuanhua Gu (1,2), Yukang Xue (1,2), Jingjing Wu (1,2) 1. School of Psychology, Central China Normal University, China; 2. Key Laboratory of Adolescent Cyberpsychology and Behavior, Central China Normal University, China*

There have been few studies about the effects of extrinsic motivation on the creativity in special areas such as science and art. This study aimed to investigate the effects of extrinsic motivation on scientific and artistic creativity with the 3 (material reward, spiritual reward, vs. no reward)  $\times$  2 (scientific creativity vs. artistic creativity) experimental design. 124 adolescents participated in this study, and expected material reward and spiritual reward were used to inspire participants' extrinsic motivation. The results indicated that, for students from Grade 8, spiritual reward had significant positive impact on the fluency in scientific creativity; for students from Grade 7, material reward had negative impact on the fluency in scientific creativity; for all subjects, both rewards had significant positive effects on artistic creativity. The effects of extrinsic motivation on the creativity in special areas are distinct from each other, which supported the notion that creativity is domain-specific.

#### OR0573

##### **The effect of separation experience on the mental health of migrant children**

*Ru Han, Liu Zhengkui Institute of Psychology, Chinese Academy of Sciences, China*

There has been over 40 million rural-urban migrant children and 50 million left-behind rural children at the process of urbanization in China. Some of left-behind rural children

were taken into the city by their parents or relatives and became the migrant children after half or more years' separation with their mothers, fathers or both parents. This study focuses on the effect of separation experience on the migrant children's mental health. 8258 participants from 58 primary, middle and high schools attended the study. Their symptoms of depression, state anxiety and trait anxiety were measured as their mental health status. The results shown that the separation experience and the length of separation duration was the risk factors for the mental health of migrant children. In addition, their relationship with parents can facilitate the relationship between the separation experience and the symptoms of depression.

#### OR0574

##### **A Study of Graduate Students Intellectual Development Level Based on King and Kitchener Reflective Judgment Model and Analysis on the Role of University in Intellectual Capacities**

*Soheila Hashemi university of mazandaran, Iran*

To study intellectual development of M.A students, 40 science and humanities students were interviewed by King and Kitchener's interview (RJI). According to King and Kitchener scoring scale, interviews data was scored to distinguish reflective judgment stage of students. In order to analyze data qualitatively analytic induction was used. Findings indicated out of 40 interviews, 12 cases were at quasi-reflective judgment, 14 cases were at between pre-reflective and quasi-reflective stage (between stages of 3, 4) and 24 remaining cases were at pre-reflective judgment (between stages of 2, 3 and third stage). The score mean of students reflective judgment was 3.5 which is illustrative of students' transition from pre-reflective judgment to quasi-reflective judgment. It seems due to higher education weakness intellectual development of post graduate students is not at the proper level.

#### OR0575

##### **Young children's views on fair distribution of work responsibilities: Sharing with friends, acquaintances, and strangers in first-person contexts**

*Yuko Hashimoto (1), Yuichi Toda (2) 1. Kwansei Gakuin University, Japan; 2. Osaka Kyoiku University, Japan*

Although the fairness reasoning of children on the allocation of "rewards" has been studied extensively, little research has been conducted on how they regard the fair distribution of "burden" such as work responsibilities. The authors have investigated how children distribute work responsibilities, namely clean-up jobs in their classrooms (e.g., Hashimoto, Ikemori,

& Toda, 2012; Hashimoto & Toda, submitted). The present study examined whether the social relationships with the sharing partner (friends, acquaintances, or strangers) affect children's decisions on fair distribution of work responsibilities. Japanese kindergarteners were interviewed using first-person scenarios and asked to share the clean-up jobs with (a) a child from the same school but never played before and (b) a child from other school. The results, with the interview data asking to share the clean-up jobs with (c) a friend, were analyzed to discuss whether children's expectations for future reciprocity with the partners affect their distributive justice judgments.

#### OR0576

##### **Premarital Sexual Behavior of Adolescence in Surabaya**

*Herdina Indrijati Universitas Airlangga, Indonesia*

This research describes premarital sexual behavior of adolescence in Surabaya, Indonesia. The dimension used in this research is based on criteria developed by Sarwono (2013). The dimensions include (1) attraction to the opposite sex, (2) dating, (3) kissing/physical touch, (4) sexual intercourse. Quantitative method is used in this research (N=228). The research instrument used in this research is the premarital sexual behavior scale. Result is analysed in descriptive statistics. Result shows that 92.7% adolescence have experienced attraction to the opposite sex, 78.1% have had a date, 39.7% have had kissing/physical touch, and 2.4% of have had sexual intercourse. Premarital sexual behavior takes place at the mall, school, car, home, etc. Subjects claims to have sexual intercourse with their friend, partner, best friend and even stranger. After engaging in premarital sexual behavior, subjects feel happy, satisfied, anxious, scared, and some feel nothing at all. Keyword: Premarital sexual behavior, adolescence

#### OR0577

##### **Parents reactions to the loss of their child: Resilience is by no means typical**

*Frank J Infurna, Suniya S Luthar Arizona State University, United States of America*

A brewing controversy in resilience research is whether its previously reported "commonness" is an artifact of data analytic and measurement choices (see Infurna & Luthar, in press, Galatzer-Levy & Bonanno, in press). We examine these issues in the context of one of life's most devastating events: parents' loss of a child. We appraise the degree to which parents manifest resilience across three adjustment indicators; concordance of resilience across these; and factors that promote resilience. Based on parents' reported life satisfaction, negative affect, and positive affect post-bereavement, 64%, 16%, and

21%, respectively, showed resilient trajectories. Across all three indices, only 11% were resilient, whereas 31% did not show a resilient trajectory across all outcomes. Low social isolation and better physical health were the strongest predictors of resilience. For future research, we highlight the need to consider the multidimensional nature of resilience, and to identify mechanisms linked with resilience across replication studies.

#### OR0578

##### **Relationships between identity development, implicit self-associations with death, and explicit death images**

*Ryo Ishii Nagoya University, Japan*

The purpose of this study was to investigate the relationships between identity development, implicit self-associations with death, and explicit death images. A total of 191 undergraduates and vocational school students participated in the experiment and questionnaire survey. Participants' implicit self-associations with death were measured by the Implicit Association Test and their explicit death images were measured by adjective-pairs using a semantic differential method. Participants were divided into 5 groups depending on identity status, which was measured by the Dimensions of Identity Development Scale (DIDS). The results of correlational analysis showed different relationships between identity development, implicit self-association with death, and explicit death images, depending on the identity status of participants. These results suggest that thoughts of death have different effects on the identity formation process for each identity status. The application of this knowledge to death education was also discussed.

#### OR0579

##### **Automatic Facial Mimicry to Dynamic Emotional Stimuli in 5-month-old Infants**

*Tomoko Isomura (1,2), Kazuko Nakatani (1), Tamami Nakano (1) 1. Osaka University, Japan; 2. Japan Society for the Promotion of Science, Japan*

Human adults automatically mimic other's emotional facial expression. Although it appears fundamental to social reciprocity such as empathy, little is known about its developmental processes. Here, we examined whether infants show automatic facial mimicry response. Facial electromyographic activity of twenty-one 4-, 5-month-old infants was measured while they viewed dynamic clips of crying, laughing, and neutral displays with emotionally congruent or neutral vocalizations. Activation of Corrugator supercillii muscle (brows) to audio-visual cry was observed between 500 and 1000 ms after the stimulus onset, which clearly demonstrates evidence

of rapid facial mimicry. Audio-visual laughter also activated the corresponding Zygomaticus major muscle (cheek). Such mimicking responses were not observed for emotionally unimodal (visual or auditory) stimuli. These results clearly showed that automatic facial mimicry is present as early as 5-month-olds, when substantial emotional information was provided, suggesting that infants share several emotions with others at the early stage of development.

#### OR0580

##### **How do mothers promote their toddlers' prosocial development?: Focusing on mothers' attuned responses**

*Shinsuke Kabaya Aichi Shukutoku University, Japan*

Attuned responses are empathetic responses exhibited by mothers that might promote children's socioemotional development (Fonagy et al., 2002). Kabaya's (2015) longitudinal study that observed mother-child interactions when the children were 8 and 14 months old found that mothers with secure internal working models responded to their infants' negative emotions with mind-related comments at both time points. This study examines whether such attuned responses promote toddlers' prosocial behaviors at 20 months of age. The participants were 37 toddlers and their mothers. The mothers' attuned responses were coded when the toddlers were 8 and 14 months old. At 20 months, the toddlers' reactions to their mothers' simulations of distress were observed. Regression analyses showed that the more mothers exhibited attuned responses at 14 months, the more toddlers behaved empathically toward mothers' distress at 20 months. Interestingly, this relation was obvious only among mothers who exhibited fewer attuned responses at 8 months.

#### OR0581

##### **Maternal Caregiving Profiles in Turkey**

*Busra A Karagobek (1), Ozlu Aran (1), Emre Selcuk (1), Gul Gunaydin (2) 1. Middle East Technical University, Turkey; 2. Bilkent University, Turkey*

The present study investigated maternal caregiving profiles in Turkey using intensive home-based observations. Everyday interactions of mothers with their 1-year-old infant were observed using the Maternal Behavior Q-Set during a 3-hour long home visit. Q-factor analyses revealed two profiles of maternal caregiving: The first profile, responsiveness/warmth, describes mothers who are responsive to their infant's needs and demands, enjoys intimate interactions with their infants, and follows the pace of the infant during interactions. The second profile, indifference/alofness, describes mothers who are indifferent to the needs of their infant

and responds only if the infant persistently demands attention. These findings indicate that individual differences in everyday maternal caregiving are distributed along more than one global sensitivity dimension. Research investigating the antecedents and consequences of maternal caregiving and interventions aiming at improving the quality of maternal caregiving should take into account these different facets of everyday caregiving behaviors.

#### OR0582

##### **Children's perception of parents and coping strategies**

**Svetlana Kostromina, Natalia Moskvicheva** *Saint-Petersburg State University, Russia*

Recently there has been increased interest in factors that may influence the children's perception of parental behavior (Gaylord et al., 2003; Yahav, 2006) and methods providing the accuracy of children's reports (Sessa et al., 2001). We used projective techniques Burns-Kaufman KFD (Hadler, 1994), Sacks-Levy SSCT (Holaday et al., 1985) and Ryan-Wenger questionnaire WCQ (1990), (N = 596). Children who prefer behavioral coping strategies (Lazarus, Folkman, 1988) perceive the father as more physically strong ( $p = 0.0038$ ), emotionally stable ( $p = 0.011$ ); children with cognitive ones perceive the mother as disturbing ( $p = 0.005$ ), dependent ( $p = 0.017$ ), and the father as authoritative ( $p = 0.030$ ), displacing an unpleasant situation. Emotional coping behavior is positively correlated with autonomous ( $p = 0.021$ ), significant ( $p = 0.025$ ) mother, active outside the family ( $p = 0.018$ ). Ineffective emotional coping strategies (screams, breaks) is positively associated with a parental busyness and a father's punishments ( $p = 0.046$ ).

#### OR0583

##### **What factors predict depression and anxiety among disabled adolescents in a low-income country?**

**Rie Kubota (1), Phuong T Dinh (2), Julie A Robinson (1)** *1. Flinders University, Australia; 2. Hue University of Education, Viet Nam*

Most people with a disability live in low- and middle-income countries and have visual or physical impairments. However, most psychological research on disability is conducted in Western countries, focuses on intellectual or hearing impairments, and does not focus on mental health. This gap was addressed by (a) identifying the severity of symptoms of anxiety and depression among adolescents (aged 10–19 years) with visual ( $n = 94$ ) or physical ( $n = 112$ ) disability across four sites in Vietnam; and (b) testing whether a model integrating biological (type of disability; gender) individual (social participation; optimism; education, coping strategies) and social risk (perceived discrimination) and protective

factors (social support) predicted these symptoms. Both groups showed severe/ very severe symptoms of depression and anxiety. The theoretical model accounted for 19–26 % of the variance in depression and anxiety. Optimism and coping strategies may be useful targets for interventions to promote resilience among adolescents with disability in low-income countries.

#### OR0584

##### **Perceived Parental Disciplinary Behaviours and Adult Romantic Attachment of Malaysian Chinese - A Mixed-Methods Study**

**Zheng Yang Lee (1), Fatimah Haron (2)** *1. HELP University, Malaysia; 2. HELP University, Malaysia*

Corporal punishment is a controversial disciplinary behaviour still widely practised among the Malaysian Chinese community. This study aimed to understand the role of parental disciplinary behaviours in adult romantic attachment among Malaysian Chinese with a sequential-explanatory mixed-methods design. The initial quantitative phase addressed the relationship between parental disciplinary behaviours and romantic attachment using a correlational design; whereby 61 undergraduate students answered a questionnaire containing the Dimensions of Discipline Inventory and Experience in Close Relationship - Revised inventory. Simple linear regression suggests frequency of corporal punishment positively predicts attachment-related avoidance. Multiple linear regression suggests explaining/teaching and rewarding positively predict attachment-related anxiety. The follow-up qualitative phase was conducted to provide a deeper understanding and explanation of the quantitative results with semi-structured interviews using a phenomenological approach. The association between corporal punishment and attachment-related avoidance was explained with themes derived from qualitative data obtained from five participants selected from the quantitative sample.

#### OR0585

##### **A study on teachers' perceptions about developmental characteristics and in-service program for at-risk young children from disadvantaged families in South Korea**

**Younwoo Lee (1), Jiyoung Choi (2)** *1. Pukyong National University, Republic of Korea; 2. Hannam University, Republic of Korea*

The purpose of this study is to investigate the elementary school teachers' perceptions about educational supports for children who are at-risk for development and from multicultural families. The modified questionnaires are distributed to teachers working in elementary schools located in Busan and Daejeon city

areas in South Korea. A total of 200 questionnaires are obtained and the data are analyzed by dividing teachers with two groups according to their teaching experiences in children from multicultural families. Results of this study are reported in terms of teachers' perceptions about developmental characteristics of at-risk children from multicultural families and educational supports that are needed to promote those children's developmental skills and facilitate academic success. Based on the results, discussions and implications would be suggested to provide valuable information for developing programs and implementing interventions for at-risk children with culturally and linguistically diverse backgrounds.

#### OR0586

##### **Effect of Authoritative Parenting and Family Relation on Adolescent Leadership: the Mediating Role of General Self-concept**

**Gai Li, Bin Wang** *Central China Normal University, China*

This study aimed to determine the mediating role of general self-concept in the effects of authoritative parenting and family relation on adolescent leadership. 2523 adolescents were randomly recruited to complete the Steinberg Parenting Styles Questionnaire, Family relation Questionnaire, Self-concept Scale and Adolescent leadership Questionnaire. Results showed that: (a) Authoritative parenting and family relation (family cohesion, family expressiveness, and family conflict) were significantly associated with adolescent leadership. (b) General Self-concept mediated the association between authoritative parenting, family relation and adolescent leadership. Authoritative parenting, family cohesion, family expressiveness could positively predict adolescent leadership, while family conflict had the negative impact on adolescent leadership. General self-concept was partial mediator between authoritative parenting and leadership, while a full mediator between family relation and leadership. In conclusion, exploring the mediating mechanisms between authoritative parenting, family relation and adolescent leadership could be very important to provide effective information relevant to adolescent leadership development.

#### OR0587

##### **BATA! BATA! ANG AGA MONG GUMAWA. A study on the Psychological Well-being of 15–19 years old teenage mothers in Tondo, Manila In Partial Fulfillment in Research**

**Jairus Andrew A Lopez, Jasmine L Lastra, Zoren Matthew L Blardony** *Philippine Normal University, Philippines*

Economic status, peers, and family are factors that affect the well-being of female teenagers

(Mental Health Foundation, 2002.) Becoming a mother at a very young age seems to influence her whole being (McVeigh 2000). In this present study, 200 participants (teenage mothers) were gathered through a purposive and snowball sampling method. The Subjective Well-being Scale for Filipinos (Hernandez, 2006) was used to describe their overall well-being. The data was analysed using the Pearson  $r$ . The result of the study would be used to develop intervention programs that will help reducing teenage pregnancy in the country. Keywords: Teenage motherhood, Teen moms, Well-being, Adolescence, Socio-economic status, educational attainment, family support, presence or absence of partner, Tondo, Manila.

**OR0588****The role of sibling relationships in adolescents psychological outcomes**

**Sheriffa Mahama, David Kumador, Vivian Tackie-Ofosu** University of Ghana, Legon, Ghana

The nature of sibling relationship is widely documented to influence social and mental development and risky behaviour in adolescence. This study examined the relationship between adolescent-sibling relationship domains (conflict, affectionate and ambivalent domains) and the psychological outcomes; resilience, self-esteem, emotional problems and risky behaviours. A purposive sample of adolescents in Accra, Ghana were used ( $N = 211$ ; Mean age = 13.7 (SD = 1.5); Males = 42.1%). Hierarchical regression analysis results indicate that adolescents who perceived their siblings as affectionate reported higher resilience scores. Adolescents who perceived conflicting and ambivalent relationships with their siblings were more prone to emotional problems and risky behaviours such as smoking and using illicit drugs. The study highlighted the importance of the perceived relationships between siblings in promoting positive psychosocial outcomes and minimizing the occurrence of risky behaviours in adolescence.

**OR0589****Experiencing Baby-Led Weaning (BLW) Method Among Working Mother and Stay At Home Mother in Indonesia: Interpretative Phenomenological Analysis**

**Ega Asnatasia Maharani Ahmad Dahlan** University, Indonesia

Baby-Led Weaning (BLW) is an alternative method for introducing complementary foods to infants in which the infants feeds themselves hand-held foods instead of being spoon-fed by an adult. Anecdotal evidence suggests that practice of BLW appears to be gaining in popularity these past few years. However, research

evidence about BLW method is still infrequently in Indonesia. This study aimed to explore the experience from both working mother and stay at home mother in practicing BLW to their infants. Qualitative approach of analysis was carried out complementary using interpretative phenomenology. Result showed that parents who applied BLW expect an increase in independence from their children and avoid eating behavior problems commonly experienced in Indonesia such as obesity and vegetables rejection. Working mothers who use BLW method preparing a more detailed in terms of time management and educated extended family members compared to mother who stays at home.

**OR0590****Route selection by young children on traveling salesperson navigation tasks presented on a touch-sensitive screen**

**Hiromitsu Miyata (1), Shigeru Watanabe (2), Yasuyo Minagawa (2)** 1. The University of Tokyo, Japan; 2. Keio University, Japan

The traveling salesperson problem (TSP) is a task in which a solver finds the optimal route when traveling through multiple spatially distributed nodes. Little effort has been made to elucidate the development of strategies used to solve TSPs. We examined route selection strategies by young children (39–70 months) and adults (21–35 years) when performing on computerized one-way TSPs having two to three identical nodes on a touch screen. In TSPs in which a specific route selection strategy including the nearest-neighbor strategy minimized the total traveling distance, older groups of participants used that strategy more often than younger ones. By contrast, children sometimes prioritized other strategies such as traveling straight ahead until they were forced to change traveling directions. This may reflect the fact that children were less efficient at perceiving the overall shape of the problem and/or measuring the relative distance from the starting location to each node.

**OR0591****Effects of reality shock and copings with reality shock of campus life on adjustment to university**

**Masashi Mizuno (1), Yuta Chishima (2)** 1. National Center of Neurology and Psychiatry, Japan; 2. Graduate school of comprehensive human sciences, University of Tsukuba, Japan

This study aimed to examine the effect of reality shock and coping strategies for reality shock to adjustment to university. First, we conducted a preliminary study to create a scale that measured reality shock and how to cope with it. One-hundred thirty undergraduate

students who had previously experienced reality shock completed questionnaires. Analyses revealed that Reality Shock Scale has simple factor. And The Coping with Reality Shock Scale consisted of four subscales: encouragement, reconsideration of enrollment, passive acceptance, and positive reframing. Hierarchical multiple regression analysis identified an interaction between reality shock and positive reframing. This interaction indicated that positive reframing was positively correlated with adjustment to university when strong levels of reality shock were reported. Additionally, reality shock negatively affected adjustment and encouragement positively affected adjustment.

**OR0592****A cross-sectional study on identity development from late childhood to middle adolescence**

**Reiko Nakama (1), Mizokami Shinichi (2), Sugimura Kazumi (3), Hatano Kai (4), Tsuzuki Manabu (5)** 1. Hyogo University of Teacher Education, Japan; 2. Kyoto University, Japan; 3. Hiroshima University, Japan; 4. Osaka Prefecture University, Japan; 5. Chuo University, Japan

This cross-sectional study focused on the changes of identity development scores with DIDS from late childhood to middle adolescence. A questionnaire survey was carried out with 2,658 students from at the sixth grade to the twelfth grade and investigated differences of scores of DIDS by grade. In order to consider their psychological status in each grade, condition of daily concerns and psychological well-being were also examined. Result showed that scores of identity development drastically dropped after entering junior high school and their scores of DIDS gradually increased grade. After that, two turning points on identity development were found. The first turning point was at the third grade in junior high school when they became an earnest explorer and the second turning point was at the third grade in senior high school when their identity status became better.

**OR0593****"Am I Ready Yet to Build Intimate Relationship?" : Study about Description of Future Orientation on Marriage Area in College Students based on Age**

**Amanda Nurshadrina, Yanti Rubiyanti, Gaida Faza** Universitas Padjadjaran, Indonesia

College students generally about 17–23 years old. Based on Erikson's psychosocial stage that age classified into two stages, identity vs identity confusion stage and intimacy vs isolation stage. It explained college students have two tasks that should be finished on the same time. Therefore, this research aims to

see whether age of college students influenced future orientation in marriage area. The method that the researchers used is filling questionnaire. Participant of this research are 39 college students from Faculty of Psychology, Universitas Padjadjaran. They are divided to category I who is 17–18 years old and category II who is 19–23 years old. This result shows that in category I, there are 63,63% participants in category I who had clear future orientation. In category II, 57,14% participants in category I who had clear future orientation. It means age of college students doesn't influenced future orientation in marriage area.

#### OR0594

##### **Hypotheses about the appearance the new in mental development**

*Liudmila F Obukhova Moscow University of Psychology and Education, Russia*

For a long time psychologists are eager to know the mechanism of appearance of "the new" in various fields of development. It led to a number of scientific hypotheses. Among them there are well-known principles: the principle of differentiation (Verner); the principle of rebuilding relations inside the whole ensemble of psychic phenomena (Vygotsky); classical conditioning (Palov), operant conditioning (Skinner), model imitation (Vallou, Bandura). These hypotheses are well known in developmental psychology. The principle of "wedging" should be added to them (El'konin). Wedging mechanism manifests itself in various situations where the appearance of the new occurs in the development. It can be illustrated by the examples of historical origin of childhood periods; the symptom of lost child immediateness on the border of preschool and primary school age; the word gap from the object; appearance of categorical perception, etc. The mechanism of "wedging" adds to well-known developmental principles in psychology.

#### OR0595

##### **Chinese children's imaginary companions: Relations with peer relationship and social competence**

*Lin Qiyi (1), Fu Hong (1), Wan Yingjia (1), Zhou Nan (2), Xu Hui (3)* 1. Nanjing Normal University, China; 2. Jiangsu Vocational College of Nursing, China; 3. Huaiyin Normal University, China

This study investigated the relationships between Chinese children's imaginary companions and peer relationships and social competence. The results revealed that imaginary companion types were associated with child-IC relationship quality. Children with invisible friends received more positive peer nominations than children with personified objects or children without imaginary companions. Compared to children with hierarchical relationships or children without

imaginary companions, children with egalitarian relationships received more positive peer nominations and perceived popularity nominations, and teachers rated them more socially competent than children without imaginary companions. This study suggested that imaginary companions contribute to children's social development in a differential and meaningful way. Although a relationship existed between imaginary companion types and imaginary relationships, these details might still represent different dimensions of imaginary companions, involving different types of underlying social cognition. Egalitarian relationships with imaginary companions played a more important role in children's social development.

#### OR0596

##### **Coping with diversity in kindergarten - Language promotion in migrant children by early music education and interactive reading aloud**

*Claudia M Quaiser-Pohl University of Koblenz-Landau, Germany*

We studied the effects of early music education and reading aloud in kindergarten on language acquisition in an intervention study with a pre-post-test design with control group. Participants were 103 preschool children (aged 3–6). The children were either offered a program of early music education or interactive reading aloud in subgroups of 3–4 children by experienced trainers. The interventions took place in the kindergarten twice a week for half an hour for 12 weeks. Several standardized tests measuring language skills, motor development, and concentration were administered before and after the phase of intervention to both intervention groups and to the control group. The intervention groups were matched with regard to age, gender, ethnic background and the base level of language skills. Results show that children benefit from the music education mainly with regard to basic capacities whereas reading aloud rather improves higher language skills as production of words and syntax.

#### OR0597

##### **"Will You Marry Me?" : Study about Influence of Status in Relationship to Future Orientation on Marriage Area in College Students**

*Yanti Rubiyanti, Gaida Faza, Amanda Nurshadrina Universitas Padjadjaran, Indonesia*

College students are people who study in college. They are about 17–23 years old. According to government regulations, a woman can marry after she was 16 years old. Meanwhile a man, after he was 18 years old. Couples, who have age closer with that regulations, would expect their relationship will continue to marriage stage. This research aims

to measure future the orientation on marriage area in Faculty of Psychology. The method that the researcher used is filling a questionnaire. The 39 participants is divided into two categories. Category I who already have mate or in-relationship status 11 and category II who doesn't have mate yet or single status. The result indicates there are 81,82% participants in category I who had clear future orientation. In category II, there are only 48,27% participants who had clear future orientation. It indicates that in-relationship status influenced someone's future orientation on marriage area.

#### OR0598

##### **Adolescents' Psychosocial Adjustment from Diverse Perspectives and it's Association with Maternal Depression: Mediated by the Mother-Child Relationship (MCR) and Adolescents' Emotion Regulation (ER)**

*Jana E Rueth, Arnold Lohaus, Marc Vierhaus Bielefeld University, Germany*

The association of maternal depression with their children's behavioral and emotional problems is well established. However, research on the underlying socialization mechanisms is limited. Therefore, we examined whether (a) the MCR mediates the relation between maternal depression and adolescents' ER and psychosocial adjustment, and (b) ER mediates the relation between the MCR and psychosocial adjustment. Furthermore, we investigated if diverse perspectives on adolescents' psychosocial adjustment (mothers'/self-reports) yield different results. We collected questionnaire data of 1119 mother-child dyads (non-clinical sample). Path-analysis results mainly support our assumptions, regardless of the chosen perspective ( $\chi^2_{\text{mothers'/adolescents' reports}}(10) = 29.53/29.85$ , CFI = .99, RMSEA = .04). However, while the MCR fully mediated the relation between maternal depression and self-reported psychosocial adjustment, partial mediation was found for the relation to mothers' reports of adolescents' internalizing and externalizing symptoms (direct paths:  $\beta = .22/.10$ ). This might reflect a depressive distortion of maternal perceptions of their children's psychosocial adjustment. Theoretical, methodological, and practical implications will be discussed.

#### OR0599

##### **Grain size of children's report: Development in regulating skills, executive functions, metacognitive awareness, and verbal ability**

*Shingo Sasaki (1), Makiko Naka (2)* 1. Koen Gakuen Women's Junior College, Japan; 2. Hokkaido University, Japan

People regulate grain size, or quality and quantity, of their report to keep the accuracy or to meet questioners' expectation. This

study investigated developmental changes in regulating skills in children. Six, ten, and twelve-year-old children were asked to tell the number, length, color, or location of objects shown in pictures with either one of two regulating instructions, i.e., "Tell me ROUGHLY or EXACTLY" (regulating task). They were also tested on executive functions (inhibition, shifting, updating), verbal ability, and metacognitive awareness of instructions. Results showed that inhibition, shifting, metacognitive awareness, and verbal ability were correlated with regulating skills even after controlling for age. Regression analyses revealed that metacognitive awareness predicted performance on regulating task in 10-year-old, whereas inhibition and shifting predicted the performance in 12-year-old. The findings suggest that regulating skills may develop from the stage of conscious regulation to more automatic regulation, which efficiency may be based on executive functions.

#### OR0600

##### **The Intervention on Early Childhood Eating Problem**

**Rahma Setyaningsih, Kurnia P Kiswanto**  
*Universitas Gadjah Mada, Indonesia*

Eating problem occurs in the majority of preschoolers and become a complaint by many parents or caregivers. This problem sometimes considered as normal. In fact, if it is not handled properly, it will have a negative impact on physical development, cognitive and even children's social-emotional aspect. The lack of literature that examines the eating problems in children has become one of the challenges. The aim of this study was to examine the effectiveness of behavioral modification in changing eating habits for a child who has eating problem. The behavioral modification was done by a series of procedures that involved people and environment surround the child. The result shows that the subject behavior has changed into desired purpose, although the change has not reach the maximum outcome. Keywords: early childhood, children's eating problem, behavioral modification intervention

#### OR0601

##### **Revisiting Kurt Lewin, the Field Theory Psychologist Who Put Quality over Quantity**

**Seisoh Sukemune** *Professor Emeritus, Hiroshima University, Japan*

It is crucial that we raise today's children to be people who care about others rather than people who are cared for by others. That means bringing them up to be generous to others and strict with themselves. Kamishibai (traditional Japanese storytelling with illustrated cards) is one way researchers and practitioners of early childhood education can get that message across to our children.

#### OR0602

##### **The effect of parental involvement on children's self-control: A questionnaire study**

**Ting Tao, Ligang Wang, Chunlei Fan, Wenbin Gao** *Institute of Psychology, Chinese Academy of Sciences, China*

The current study explored the effects of parental involvement on children's self-control. Data were collected from 2068 children aged 3 to 9 years and their parents. The results suggested that (a) parental involvement had a stronger predictive effect on children's good self-control than poor control; (b) the effect of maternal involvement was mediated by paternal involvement when predicting children's good self-control and poor control; (c) paternal involvement and maternal involvement affected boys' and girls' self-control in different ways; and (d) parental involvement had the greatest impact on the self-control of children aged 7–8 years old. The results are discussed in terms of their implications for a dual-systems model of self-control theory and future empirical work.

#### OR0603

##### **Preschool teachers' practices of monitoring children to prevent health risks and facilitate adaptation: Multi-method triangulation in a qualitative study**

**Shoka Utsumi** *Ochanomizu University, Japan*

Inadequate monitoring in a family is a widely recognized risk factor for child safety and for the development of health and conduct problems; however, little is known about monitoring per se and even less about monitoring in early childhood education. This study investigated and clarified the constitution of monitoring practices of preschool teachers using qualitative content analysis. No-participant observation was conducted for 14 days in eight classes of 5-year-olds in six preschools; 269 observational episodes were recorded that were collapsed into 906 descriptions and classified by monitoring behavioral code schemes (verbal instruction, confirmation, structuring, cooperation among teachers, watching-over, and reports from children), which were developed using teachers' (n=6) reports about monitoring practices collected through interviews and questionnaires. Verbal instruction was partially overlapped with confirmation, structuring, and watching-over. Teachers obtained additional information from children's self-disclosures. Further quantitative study is needed to confirm how monitoring practices contribute to children's development.

#### OR0604

##### **Latent class analysis of resilience-supporting resources**

##### **among resilient Sesotho-speaking South African adolescents**

**Angelique C Van Rensburg, Linda Theron, Sebastiaan Rothmann**  
*North-West University, Vaal Triangle Campus, Optentia Research Focus Area, South Africa*

The aim of this paper is to classify perceptions of available resilience-supporting resources (e.g., personal skills, peer support, social skills, physical and psychological caregiving, spiritual, cultural and educational resources) among a sample of 221 resilient Sesotho-speaking South African adolescents (13–19 years; 124 girls, 96 boys, 1 undeclared). Their resilience was identified by community elders. Using survey data from the South African Pathways to Resilience Research Project, authors performed latent class analysis (LCA) and determined factors associated with class membership. The best fit LCA had two classes (1) lower perceptions of available resilience-supporting resources (n1 = 28%) and; (2) high perceptions of available resilience-supporting resources (n2 = 72%). Class 2 membership was associated with higher educational aspirations, prosocial behaviour and completed school grade. However, sex, binary age, community safety, parental monitoring and geographical area were not associated with either class membership. The authors discuss implications for psychologists and other service providers.

#### OR0605

##### **Attachment Styles and Coping Strategies among Malaysian Adolescents: Exploring Differences across Genders**

**Wan Samhanin Wan Sulaiman, Nor Ba'yah Abdul Kadir, Wan Shahrazad Wan Sulaiman, Nor Jana Saim** *National University of Malaysia, Malaysia*

Attachment style is formed during childhood and it is influential in determining relationship patterns during adolescence. Adolescents with insecure attachment often experience self-development problems and need effective coping strategies. Thus, this study explored the influence of attachment styles and coping strategies among Malaysian adolescents by emphasising the gender differences. Two self-report measures, which are Attachment Style Questionnaire and Brief COPE were given to adolescents sample (N = 706), 14 years old. Overall, there were significant differences among female and male adolescents in secure, avoidant, and anxious/ambivalent attachment. Both genders were considered equally balanced in having dismissing, and fearful and preoccupied attachment. There was also a significant gender difference in the use of avoidance coping strategy but no significant difference in problem focused and emotion focused coping strategies. Discussion focuses on emphasising the importance of gender role

in relation of integrating attachment styles and coping strategies into the life of adolescent.

#### OR0606

##### **A longitudinal investigation of meaning in life and the psychosocial functioning of Chinese middle adolescents**

**Qian Wang (1), Meilin Guan (2), Yongjuan Li (2)** 1. *The Chinese University of Hong Kong, Hong Kong*; 2. *Institute of Psychology, the Chinese Academy of Sciences, China*

Chinese adolescents' academic achievement has been much researched while relatively little is known about their personal growth such as attaining a sense of meaning in life. In this study, 179 urban Chinese 10th graders (94 females; mean age = 14.80 years,  $SD = .32$ ) reported twice spanning six months on their sense of presence of meaning in life (e.g., "I understand my life's meaning." "My life has a clear sense of purpose."), life satisfaction, self-esteem, depression, anxiety, problem behavior and perceptions of parental autonomy support and psychological control. Consistent with findings in Western cultures, a sense of presence of meaning in life predicted Chinese adolescents' heightened life satisfaction and self-esteem but dampened depression, anxiety and problem behavior over time, adjusting for their initial functioning; moreover, perceived parental autonomy support predicted adolescents' heightened sense of presence of meaning in life over time, adjusting for their initial level of such a sense ( $|β| > .12$ ,  $ps < .05$ ).

#### OR0607

##### **Paternal reactions to Chinese adolescents' negative emotions: Relations to adolescents' loneliness**

**Mingzhu Wang (1), Hong Zou (2)** 1. *The Chinese University of Hong Kong, Hong Kong*; 2. *Beijing Normal University, China*

How parents respond to children's negative emotions has significant effects on children's emotional functioning, but previous research mainly focused on young children and mothers' role. The current study explored the relationship between paternal reactions to adolescents' negative emotions and adolescents' loneliness, and the moderating role of peer attachment. A total of 732 junior and senior high school students reported on their fathers' reactions to their negative emotions (Fabes et al., 1990) as well as their loneliness (Zhang et al., 2015) and peer attachment (Armsden & Greenberg, 1987). Exploratory and confirmatory factor analyses yielded four factors for paternal reactions: involvement/support, expressive encouragement, punishment/control and minimization. Results showed that paternal involvement/support and expressive encouragement predicted less loneliness, whereas paternal punishment/control

and minimization predicted more loneliness among adolescents. Peer attachment moderated the relation between paternal minimization and adolescents' loneliness, such that this relation was insignificant for adolescents with high peer attachment.

#### OR0608

##### **Relations between maternal power assertion and Chinese children's social, school, and psychological adjustment: A longitudinal study**

**Xinpei Xu (1), Dan Li (2), Xinyin Chen (3)** 1. *East China Normal University, China*; 2. *Shanghai Normal University, China*; 3. *University of Pennsylvania, United States of America*

This two-year longitudinal study aimed to examine the relations between maternal power assertion and child adjustment in non-Western culture. Participants were 316 children in Shanghai, China. Data were collected from multiple sources. Results indicated that boys than girls reported more perceived maternal power assertion and showed poorer social, school, and psychological adjustment. Higher grade students showed poorer psychological adjustment than lower grade students. Moreover, the results showed that maternal power assertion had significant and unique contributions to the prediction of later school adjustment rather than psychological and social adjustment after gender, grade and stability effects were controlled. And all child variables except negative nomination contributed to the prediction of later maternal power assertion. In conclusion, it seems that maternal power assertion predicted school adjustment, but not social or psychological adjustment. Social, school and psychological adjustment all predicted maternal power assertion. These would be further discussed based on the cultural factors.

#### OR0609

##### **Children's empathy influences their search and estimates facial pain expression's performance: Evidence from eye tracking**

**Zhiqiang Yan (1), Yanjie Su (2)** 1. *Department of Psychology and Beijing Key Laboratory of Behavior and Mental Health, Peking University, China*; 2. *Department of Psychology and Beijing Key Laboratory of Behavior and Mental Health, Peking University, China*

Pain function of empathy concern has evolutionary adaption. This research design two eye-tracking experiments, using visual detection task (find the emotional facial expression from neutral expressions) and pain estimation task (estimate the pain intensity of a facial expression) to investigate the relationship between children's empathy and their experimental performance, collected eye-tracking

data successfully from 55 and 42 five- to six-year-olds children's respectively. We find children detect facial pain expression faster than others (angry, sad, happy), high-level empathy children have more fixation count to the facial pain expression than facial neutral expression; children's empathy have a positive relationship with their pain estimation task performance, and facial pain expression's eye and mouse fixation are the best predictors of their performance, high-level empathy children look the eye faster. These results imply that facial pain expression is different from others, and children's empathy influences their search and estimates facial pain expression's performance.

#### OR0610

##### **The immediate impact of television cartoons and electronic games on Chinese preschoolers' executive function**

**Xiaohui Yang (1), Zhenhong Wang (1), Liqi Zhu (2)** 1. *Shaanxi Normal University, China*; 2. *Institute of Psychology, Chinese Academy of Sciences, China*

This research examined the immediate influence of different types of television cartoons and electronic games on preschool-aged children's executive function. One hundred 4-year-olds were randomly assigned to one of the five groups: watching a fast paced television cartoon or an educational cartoon or playing an educational electronic game or an entertainment electronic game on ipad or painting with paper and pencil for 10 minutes. They were then given 5 tasks tapping executive function, including backward digit span, the Simon task, boy-girl Stroop task, the Dimensional Change Card Sort task and Tower of Hanoi tasks. Results showed that children who watched the television cartoon and played electronic games performed significantly worse on the executive function tasks than children in the control group (painting group), indicating that viewing television cartoons or play electronic games had immediate negative effects on 4-year-olds' executive function. Keywords: preschoolers, television, electronic games, executive function

#### OR0611

##### **Transformational leadership intervention: a quasi-experimental study in a Norwegian educational context**

**Stig Ytterstad, Geir Thompson** *The Norwegian Business School BI, Norway*

In this study, we conducted a field-based quasi-experimental study designed to examine the effectiveness of a transformational leadership intervention. We used MLQ5x to identify behavioral changes in each leader's transformational leadership behavior before and after an intervention. The result showed an increase in transformational leadership behavior from



pre-test to post-test in the intervention group ( $N = 70$ ), but not in the control group ( $N = 55$ ). Specifically, an improvement was obtained for Idealized Influence (Attributes) and Intellectual Stimulation. Laissez-faire leadership, however, decreased from pre-test to post-test.

#### OR0612

##### **Work for Life: Context Contributors of Resilience among Working Youth in Manila**

**Isabelle C Yujuico (1), Marie Rose H Morales (2), Henri Carlo Y Santos (3)** 1. De La Salle University - Manila, Philippines; 2. University of the Philippines-Diliman, Philippines; 3. University of Waterloo, Canada

The working youth face unique challenges. Yet, literature regarding the contributors to resilience of the Filipino working youth is sparse. This study surveyed 104 high school and college-aged working youth in Manila City using the Multicontext Assessment Battery of Youth Development. Multiple hierarchical regression analyses were used to examine the relation of the family and social environment to resilience, measured as low risk behavior and adequate emotional regulation in the workplace. Maternal presence was associated with lower risk behavior after controlling for demographics, economic adversity, negative life events and chronic strains. Practicing emotional regulation in the family, workplace group resilience and a warm workplace climate predicted individual workplace emotional regulation. Interventions geared towards improving parental support, training emotional regulation skills within the family, and making the workplace environment more welcoming are recommended.

#### OR0613

##### **Visual selective attention development among 7–13 years old supernormal children**

**Xingli Zhang, Xiaoyan Li, Yao Fu, Jinglu Yan, Jiannong Shi** Institute of Psychology, Chinese Academy of Sciences, China

The current study aimed to compare the visual search development between intellectually supernormal (gifted and talented) and normal children. 124 children aged 7–13 years old participated in the visual search experiment, 68 supernormal and 56 normal children respectively. The standard visual search paradigm was used and participants' reaction time (RT) was recorded through the DMDX system. Search RTs underwent analyses of variance (ANOVAs) with age group and IQ group as between-subjects factors, the features and the set size as within-subject variables. The result showed that supernormal children performed more quickly than that of normal children, the reaction time (RT) also showed expected improvement in speed of information

processing with their age increasing among both groups. Moreover, both the supernormal and normal groups displayed similar patterns in searching color features (in parallel processing) and conjunctions (in serial processing).

#### OR0614

##### **The Development of Fine Motor Skills in Children Aged 3 to 6 Years Old**

**Xingli Zhang, Da Gen, Jiannong Shi** Institute of Psychology, Chinese Academy of Sciences, China

Fine motor skills refer to any movement where an individual uses the small muscles or muscle areas of the hands and fingers. This study was to explore fine motor skills development performing two different grip tasks with children aged 3 to 6 years old. The sample size consisted of 157 subjects (86 boys and 71 girls) across five kindergartens in Beijing: two were public kindergartens and three were private kindergartens. The results showed that age was the dominant factor in fine motor skills development ( $p < 0.01$ ), however at 5 to 6 years old level, the rate of development was not as significant as with the lower age groups. Gender was correlated to both grip skills ( $p = 0.05$ ,  $p = 0.04$ ). Girls outperformed boys on precision grip, showing more eye-hand control and finger tip dexterity. Boys showed great gains in power grip, which required strength and speed on palm.

### POSTER PRESENTATION

#### P0898

##### **The Influence of Adult Mother-Daughter Relationships on Daughter's Marital Relationships: Psychologically Independent Relationships between Mothers and Married Daughters with Infants**

**Kahori Abe** Ochanomizu University, Japan

This study examines the relationship between daughters with an infant and mothers, based on the family systems theory. Mother-daughter relationships can be particularly close. The paper examined how psychological independence and dependence in the relationship between a married daughter with an infant child and her biological mother is correlated with the daughter's psychological health and marital relationship. Questionnaire survey was conducted on married couples with infants under two years old. Two hundred forty-eight (248) married couples participated in this questionnaire survey. Results showed that daughter's dependence on her mother was associated with daughter's depression. In addition, daughter's depression negatively affected daughter's marital relationship. These data show that the mother-daughter relationship influences the

daughter's marital relationship via the daughter's psychological health. These findings have implications regarding the importance of mother-daughter relationships in family systems research.

#### P0899

##### **Mother-Child Attachment Styles and Adjustment in Adolescence**

**Cami R Allard** Alliant International University, United States of America

This study was designed to test the specific-linkages hypothesis (Finnegan, Hodges, & Perry, 1996) that preoccupied and avoidant attachment styles are each uniquely linked with internalizing (self-esteem, depression, peer social competence) and externalizing (narcissism) problems in a sample of adolescents ( $N = 154$ , 76 girls, M age 12.8 years) in England. Per a relational schema perspective, insecure attachment styles included both a perception-of-self and a perceptions-of-mother component. Adolescents with a preoccupied attachment style (perception of self as preoccupied, perception of mother as overprotective) were vulnerable to more depression, lower peer social competence, and lower self-esteem (boys only). Unexpectedly, the avoidant attachment style (perception of self as avoidant, perception of mother as unavailable when distressed) was associated with greater peer social competence. Results attest to the specificity of the links between preoccupied attachment and internalizing problems, and speak to the utility of a relational schema perspective to examine attachment in adolescence.

#### P0900

##### **Associations of parental attachment styles with parenting anxiety and marital relationships among Japanese parents**

**Satoko Ando (1), Yuka Fukumaru (2), Takashi Muto (2)** 1. Univ. of Tsukuba, Japan; 2. Shiraumegakuen Univ, Japan

Attachment style has an impact on romantic relationships (Simpson, J., 1990). As the selection of a romantic partner, not all adults choose a psychologically secure partner. People tend to choose partners with the same attachment style as their own (Frazier et al., 1996). Thus, the marital relationship and level of parenting anxiety of parents are influenced by the parents' attachment style. A total of 786 mothers and 561 fathers recruited at the perinatal center in this longitudinal study. The distribution of maternal attachment styles was as follows: secure, 34.4%; preoccupied, 36.4%; dismissing, 7.1%; and fearful, 22.1%. The distribution of paternal attachment styles was as follows: secure, 31.8%; preoccupied, 27.8%; dismissing, 24.2%; and fearful, 16.1%. Secure mothers and fathers scored high on the SDQ and low on the EPDS and the measures of parenting anxiety.

P0901

### Play Therapy and Erikson's Concept of Industry vs. Inferiority: A Case Study Using Positioning Theory

**Hatsuho Ayashiro (1), Mari Hirano (2)** 1. University of Fukui, Japan; 2. Tokyo Kasei University, Japan

For therapists helping school-aged children, considering the concept of industry vs. inferiority proposed by E. H. Erikson is useful. This study aims to examine how play therapy deals with the conflict, using a case study based on positioning theory. The client is a school-aged boy suffering from relationships with friends and learning in school. The findings suggest that the problems made his position inferior in a school discourse, and restricted industry in his personal story, which others may have had difficulty understanding. The therapy allowed him to have industry and find a position in social discourse, in which he was able to share his story with others easier than before. The therapist was able to accomplish this by appreciating the boy's story and simultaneously recognizing the importance of social discourse through playing, thus resolving the developmental conflict.

P0902

### Factors influencing mother's perception of agency in infants

**Midori Ban (1), Hideyuki Takahashi (2)** 1. Doshisha University, Japan; 2. Osaka University, Japan

This study examines how mothers' perception of their children's mind changes with development. Seventy-eight Japanese mothers of infants (age range: 22–39 years) evaluated their children's mental capacities using Gray et al.'s (2007) scale in an Internet survey. This scale has two dimensions: "experience" and "agency." The former pertains to feeling various emotions (e.g., fear), while the latter covers planning and executing actions based on one's own will (e.g., self-control). Objective child developmental indexes (e.g., crawling) were also assessed. Hierarchical regression analyses showed that "experience" scores tended to increase with child age. The child's ability to support his or her head and time of saying the first word were significant predictors of "agency" scores, regardless of the child's actual age. Our results demonstrate that mothers perceive their children's mind according to at least two different dimensions.

P0903

### A Long-term Intervention Program to improve up the Quality of Life for Adults with Autism

**Silvia Blatter, Harald R Bliem, Barbara H Juen** University of Innsbruck; Department of Psychology, Austria

Over four years the efficiency of an intervention program for adults with autism and intellectual impairment has been analyzed. The aim of this intervention was to raise the quality of life for this special client group inter alia by improving their communication. The program follows the classical models for dealing with people with autism. The quality of life concept derived from studies of Schallock and Verdugo (2002). Our hypothesis was that a gain in specific communicative features of the interaction between the caregivers and the autistic adults results in an increase in the quality of life of this client group. The results confirm our hypothesis that the quality of life of autistic adults can be positively influenced through an individual intervention program. The overall trend shows a positive development in negative factors of behavior and the general mood, the overall average of aggression behavior shows a steady decrease.

P0904

### The Relationship between Stigma Perception and Depression of Young Migrant Workers: Multiple Mediating of Resilience and Social Alienation

**Yu Bu, Danhua Lin** Institute of Developmental Psychology, Beijing Normal University, China

In order to explore the internal psychological mechanism underlying stigma perception and depression of young migrant workers moving from rural to city, 374 young migrant workers (average age = 23, 41.1% female) were surveyed with Stigma Scale, Resilience Scale for Adults, Marlow-Crowne Social Desirability Index and Center Epidemiological Studies of Depression. Results of our study as follows: (1) Correlation analysis showed that stigma perception was negatively correlated with resilience ( $r = -0.43$ ,  $p < 0.01$ ), while positively correlated with social alienation ( $r = 0.28$ ,  $p < 0.01$ ) and depression ( $r = 0.28$ ,  $p < 0.01$ ). (2) Multiple mediation modeling suggested that stigma perception had no direct effect on depression. However, it could exert effects on depression indirectly through resilience ( $\beta = 0.043$ ,  $p < 0.01$ ) and social alienation ( $\beta = 0.064$ ,  $p < 0.01$ ) respectively as well as the chain mediating effect of these two factors ( $\beta = 0.041$ ).

P0905

### The Influence of Negative Network Event on Belief in a Just World among College Students: Effects and Mechanisms

**Min Cao (1,2), Yuan Tian (1,2), Yifan Yan (1,2), Ziyin Lu (1,2), Zongkui Zhou (1,2), Yunzhe Hong (1,2)** 1. Key Laboratory of Adolescent Cyberpsychology and Behavior (CCNU), Ministry of Education, Wuhan 430079, China; 2. School of Psychology,

Central China Normal University, Wuhan 430079, China

In order to understand the impact of negative network event on belief in a just world (BJW) among college students in the Internet Age, Consensual Qualitative Research (CQR) method was employed to analyze the transcripts of interviews of 40 college students recruited from 18 colleges and universities. Results suggested that the effects of negative network events on BJW among college students were manifested in four domains: attritional style, emotional expression, decision making process, and behavior style. The meaning of each domain and its relationship with the existing theories and research were discussed. This study showed specific factors that affect BJW among college students within the special network environment.

P0906

### Assessment of young children's social-emotional development: application of Vineland Social Emotional Early Childhood Scales to a sample of Italian children in kindergarten

**Manuela Carone none**, Italy

The aim of this research was to assess the social-emotional development of 64 children (3 to 5 years old) in a kindergarten in the city of Taranto (Apulia, Italy) by use of Vineland Social Emotional Early Childhood Scales (V-SEEC) and to verify, by ANOVA, what independent variable (Age of Children, Gender, Age of the parents, Parents' Level of Education, Parents' job, Birth Order, Being or Not an Only Child, Having or Not a Sibling the Same Age) affected it. The results showed that some environmental factors relevant to family were involved with the scores of V-SEEC (e.g. Birth Order or Parents' level of education were statistically significant). In conclusion, an interpretation of some of the findings highlights the benefits of high cultural family environment for socio-emotional development.

P0907

### The developmental interplay of preschoolers behavioural problems and harsh parenting practices

**Ilona Cesniene, Roma Jusiene** Vilnius University, Lithuania

There are numerous studies showing associations of harsh parenting practices and children's emotional and behavioural problems. There is still lack of studies documenting longitudinally the interplay of parenting and children's adjustment in preschool age: what causes what? This study examined associations between parental punitive orientation (CCNES; Fabes et al., 1990), and psychological and behavioural control (CRPR; Block, 1981) measured at child's age 3 and 5 years and children's behavioural problems (CBCL;

Achenbach, Rescorla, 2000) measured at age 2, 4 and 5 years old. Data of 63 children are used for analysis. Results show that punitive and overall non-supportive parenting at age 3 add to emotional and behavioural problems at age 5 years even controlling for the behavioural problems at age 2 years old. The implication is that training programs for parents of young children should emphasize the advantages of practicing alternate methods of child-rearing other than behavioural and psychological control.

#### P0908

### Developmental trajectories of perceived parental styles and self-esteem among Taiwan adolescents

*Yiting Chang National Chiao Tung University, Taiwan*

This article examines the relationship between parenting styles and the development of self-esteem among adolescents. Data ( $n = 1,371$ ) were based on a panel study conducted by the Taiwan Youth Project at the year 2000, 2003, 2006 and 2008. Results from growth mixture modeling revealed a nonlinear increase in the intensity of self-esteem between early and middle adolescence. Perceived parenting styles, as manifest in parental warmth and harsh discipline, were categorized into 4 latent heterogeneous classes: surveillance, support, conflict, and alienate. Adolescents living under support parenting tend to report the most pronounced self-esteem from early to middle adolescence; then the development of self-esteem in surveillance group was the slowest. We also discuss the role of harsh parenting in Taiwan culture, as it pertains to the roles traditionally assumed by the father and mother. The results confirmed that youths' longitudinal self-esteem vary by long-term family interaction patterns.

#### P0909

### The mediating role of autonomy between autonomy support and adolescents' academic performance

*Xuelian Chen (1), Zhao Zhang (2) 1. Hubei University of Chinese Medicine, China; 2. Wuhan University of Technology, China*

Autonomy is assumed to be positively connected with adolescents' developmental outcomes. The more autonomous, the better young individuals perform in social life. Supporting for adolescents' autonomous requirements can lead to better performance of academic learning while in controlled conditions they showed worse school outcomes. 1047 questionnaires were distributed to students from junior schools to high schools in 3 Chinese provinces to investigate the relations between autonomy supports from parents and teachers and

academic achievements. The results showed that, autonomy supports could positively predict academic autonomy and academic autonomy had significantly positive correlation with adolescents' academic performance. Academic autonomy played a partial mediating role between autonomy supports from mother and teacher and academic competence. Compare to supports from mother and teacher, the influence of father's supports for adolescents' autonomy on academic performance was relatively weak. Significant gender and grade differences were found on adolescents' academic performance and academic autonomy.

#### P0910

### Childrens Abilities in Identifying Contract Violations: Looking into the Role Effect

*Jui-Chih Chin (1), Miao-Hui Lin (2) 1. University of Taipei, Taiwan; 2. National University of Tainan, Taiwan*

To identify the violations of a conditional promise involves deontic reasoning (i.e.  $p$  and  $q$ , not  $p$  and  $q$ ,  $p$  and not  $q$ , not  $p$  and not  $q$ ). This study was aimed to discern whether young children were better at identifying the not- $p$ -and-not- $q$  of a conditional promise as contract violation when the superordinate party was the promisee (e.g. a child made a conditional promise to the mother) than when the subordinate party was the promisee. The participants were 147 children aged 6 to 7 ( $m = 75$  months) who were asked to identify the violators of the conditional promises. The chi-square analyses showed that, when the superordinate party was the promisee in mother-child context, children were more likely to identify not- $p$ -and-not- $q$  condition as a violation, to claim it to be bilateral violation, and less likely to identify the subordinate party as the violator. A different pattern was observed for the child-peer promises.

#### P0911

### Age differences in childrens judgement of bilateral violations of conditional promises

*Jui-Chih Chin (1), Miao-Hui Lin (2) 1. University of Taipei, Taiwan; 2. National University of Tainan, Taiwan*

The current study was to examine age differences in children's identification of the not- $p$ -and-not- $q$  of a conditional promise as bilateral violation. There were 105 children aged 6 ( $m = 70$  months) and 42 first graders ( $m = 87$  months) participating in this study. The children were asked to identify the violations of four hypothetical stories of conditional promises in the mother-child and child-peer contexts. The chi-square analyses indicated that, when the mother was the promiser, first graders were more readily to identify the not- $p$ -and-not- $q$  condition as contract violation and the mother as the violator than 6-year-olds. On the other hand, 6-year-old children were

more likely to identify the child as the violator. For the conditional promises in which the promisee was the peer of higher status, 6-year-old children were more likely to identify the peer of lower status as the violator, whereas 7-year-olds were more likely to claim the two parties as the violators.

#### P0912

### The Relationship of College Students' Internet Addiction Tendency with Their Death Attitude: The Mediation Effect of Meaning in Life

*Chengzhu Cui Central China Normal University, China*

A random sampling study was conducted to explore the relationship between college students' Internet addiction tendency, death attitude, and meaning in life. 540 college students completed Davis Online Cognition Scale, Death Attitude Profile-Revised and Purpose in Life Test. The results indicated that, Internet addiction was negatively associated with meaning in life and neutral acceptance, positively associated with death fear, death avoidance, approach acceptance, and escape acceptance; meanwhile, meaning in life was positively associated with neutral acceptance, negatively associated with death fear, death avoidance, approach acceptance, and escape acceptance; Internet addiction not only had a direct negative effect on neutral acceptance, but also affected it indirectly through meaning in life; meanwhile, Internet addiction not only had a positive effect on death fear and escape acceptance directly, but also affected them through meaning in life. The relationship between Internet addiction tendency and death attitude was partially mediated by the meaning in life.

#### P0913

### The dynamics of perceived adulthood among Japanese post-adolescence

*Yumi Endo Kansai University, Japan*

Drastic changes in social systems and the economic structure in Japan over the last few decades have altered the relationships between parents and their grown children. In many countries, a rising number of grown children remain economically and emotionally supported by their parents. The Japanese call them "parasite singles." This study aims to (1) identify "adults" in terms of "perceived autonomy" and (2) explore whether differences in demographic factors such as income and/or psychological factors, are related to perceived adult status. Online survey responses from 8,000 unmarried participants, ages 20–44, reveal that living with their parents and having unclear ambitions for the future have a negative effect, whereas having full-time employment, being engaged in daily domestic work, a higher own-family income ratio, and higher

self-competence have positive effects on perceived adult status. Issues of dynamic identity development as opposed to intra-psychic change are discussed.

#### P0914

##### The courage in a group of Italian children

*Lea Ferrari, Sara Santilli, Ilaria Di Maggio University of Padova, Italy*

We are living in at risk society that requires also to children to develop skills and competences such as courage to deal with many daily challenges (Ginevra & Capozza, in press). This study aims to analyze courage in a group of 263 Italian children (Mean age = 9.47; SD = .51) using qualitative and quantitative procedure. Participants were asked to describe a story of courage and qualitative analysis conducted referring to Putman's categories (1997) highlight that children since eight years old are able to describe courage like adults. Furthermore participants were asked to fill out questionnaires to assess their levels of optimism and resilience. The structural equation modeling analysis highlight the mediation role of courage in the relationship between optimism and resilience. The role of courage and the implication of these results in counseling activities will be discussed.

#### P0915

##### Turn-Taking Behavior in Triads of Preschool Children Playing Three Types of Games

*Aya Fujita Oita Prefectural College of Arts and Culture, Japan*

Turn-taking behavior in preschool children playing three types of games was investigated. Participants were 96 four-year-old and 93 five-year-old children. Same-sexed and same-aged children were grouped into 63 triads. Then, they were requested to play three types of games in triads; the fishing game, the piling ice cream game, and the bitten by crocodile game. Turn taking behaviors in using a toy were recorded and analyzed. These behaviors were categorized into four types of turn-taking; one act turns, all game act turns, random turns and others. Results indicated that older triads tended to take one act turns, whereas younger triads tended to take all game act turns, or random turns. Moreover, younger triads tended to reject peer demands for turn taking. These findings suggest that older children can share game situations with their peers, and that they are more considerate to others.

#### P0916

##### Relationship between fundamental social skills and ego identity in adolescents: The mediating effect on their friendship

*Takeshi Fujiwara University of Tsukuba, Japan*

The purpose of this study is to examine the relationship between fundamental social skills and ego identity using structural equation modeling for Japanese adolescents. Many researches have shown that social skills improve their interpersonal relationship. This is also discussed that interpersonal relationship play an important role in developing ego identity. But it is not revealed what kind of skill influencing on the development of their identity. The purpose of the present study is to examine the relationship among two fundamental social skills, satisfaction with friendship and ego identity. 251 university students (92 males and 159 females) in Japan answered the following questionnaire: Listening skills scale, self-expression scale, satisfaction with friendship and multidimensional ego identity. Structural equation modeling revealed that both listening and self-expression skills promote developing four aspects of ego identity through satisfaction with friendship.

#### P0917

##### Influence of Numeration System on Mathematical Literacy ~ Case 2 Comparative Study of French and Japanese ~

*Yoshiko Fujiwara (1), Kazu Murata (2) 1. Graduate School of Hollywood University, Japan; 2. Seitoku University, Japan*

It seems that Japanese language where numeration system (how to read numbers) and numerical notation (how to write numbers) coincide, has some advantage, compared with French language where those two do not coincide, in locating numbers on number line, that is, in quantitative understanding of numbers. More concretely, the Japanese numerate 592, from larger digit to smaller, as  $500 + 90 + 2$ , whereas the French as  $500 + 4 \times 20 + 2 + 10$ . In basic arithmetic operations such as addition and subtraction and so on, it can be naturally presumed that locating numbers on number line is highly desirable. In our paper, we investigate if it is really the case and if it really makes any difference in mathematical literacy of grown-ups.

#### P0918

##### Eating and sleeping in preschool children (6): Late rising and brunch on weekend causes malfunctioning of several physical and mental conditions

*Kazuhiko Fukuda (1), Tomoko Hasegawa (2), Ikko Kawahashi (3), Sumio Imada (4) 1. Edogawa University, Japan; 2. Taisho University, Japan; 3. Meiji Gakuin University, Japan; 4. Hiroshima Shudo University, Japan*

We surveyed 1,000 families with preschool children and classified them into five clusters by means of cluster analysis with the data for

the children's eating and sleeping times. Cluster 1 was characterized by extremely late sleeping and eating. The second cluster was also a group of extremely late sleeping and eating, but less late than cluster 1. Cluster 3 was a group eating and sleeping relatively late. Cluster 4 was a group of early sleeping and eating. Cluster 5 was similar to cluster 4 on weekdays, but they got up late and had late breakfast on weekends. Cluster 1 children showed the most severe malfunctioning in various measures. The best functioning was shown by the children of cluster 4. Cluster 5 showed much malfunctioning. These data suggest that a large gap on eating and sleeping hours for weekdays and weekends was a major factor in the observed malfunctioning.

#### P0919

##### The historical aspects of meaning in life for university students

*Ritsuko Fukuda Nagoya University, Japan*

This study examined three backgrounds of the narrative about the meaning in life: the past, the present, and the future. The subject focused on university students because they tend to think about their career after graduation as the meaning in life. The semi-structured interview was conducted for 15 university students, and those data were analyzed using Modified-Grounded Theory Approach (M-GTA). As a result, many concepts about each of three backgrounds were created and were grouped into seven categories. If a person has a temporally consistent meaning, the narrative suggests concepts such as "repayment for kindness" or "the generation succession." In contrast, there is a possibility that some concepts such as "experience that was helped to someone" can change in the future. Further research is needed to examine a range of another development stage, such as emerging adulthood.

#### P0920

##### A Study for Assessing Rules among Children in East Asia

*Xiangshan Gao (1), Yuichiro Yamagiwa (2), Takayuki Umezaki (3), Mai Kominato (4), Marie Sato (5), Jung Hwan Hyunn (6) 1. Tokoha University, Japan; 2. Tokyo Metropolitan University, Japan; 3. Konan Women's University, Japan; 4. Hosei University, Japan; 5. Research and Training Institute of the Ministry of Justice, Japan; 6. Seoul Theological University, Republic of Korea*

The effects of non-cognitive skills on future life have been focused recently. Among these skills, development of rules including the play rules and social rules was compared between Japanese (N = 1072) and Korean (N = 1251) children. A questionnaire survey included 14 items related to rules was conducted in both countries' children at the ages of 3 to 6 years old. Mothers responded by using a four-point

response scale. Results indicated Japanese children's play and social score was lower than Korean children for every item, at every age. The score of almost all of the items increased with age in both countries. The above results could reflect different perspectives on child's training between the two countries: i.e. if a child is being selfish, many Japanese mothers think it is better to persuade gently until they understand, whereas many Korean mothers think it is good to scold severely to bring about the desired behavior.

#### P0921

##### Dual-task walking in school-aged children and its relation to cognition, behavior and psychosocial functioning

*Priska Hagmann-Von Arx, Olivia Manicolo, Sakari Lemola, Alexander Grob University of Basel, Switzerland*

In everyday life children usually do things concomitantly while walking such as listening to someone talk or fastening jacket buttons. Such dual tasks may interfere with walking as less attention can be directed to the regulation of gait. However, it is unknown whether dual-task walking is related to other aspects of children's development. This study investigated 138 children aged 6 to 13 years enrolled in public school. Gait velocity and variability were assessed using the walkway system GAITRite without an additional task and while performing a motor or cognitive dual task. Children's cognition was assessed using tests for intelligence and executive functions. Parents reported on their child's behavior and psychosocial functioning. Results revealed that single- and dual-task walking was not related to children's cognition, behavior, or psychosocial functioning, indicating that single- and dual-task walking does not go along with other aspects of development in typically developing school-aged children.

#### P0922

##### Classification of unexpected reality in childcare training

*Shoko Hamada (1), Yuko Matsuda (2), Saeko Shitara (3) 1. Hiroshima University, Japan; 2. Hiroasaki University, Japan; 3. Sakushin Gakuin University Womens College, Japan*

This study attempts to classify unexpected reality in childcare training. A total of 571 students from a childcare course completed the unexpected reality questionnaire (Matsuda et al., 2016) and the GHQ, and the number of childcare training. The result of cluster analysis showed six clusters as follows: "highly faced-all unexpected reality(A)," "moderately faced-all unexpected reality(B)," "pass through-self(C)," "faced-expertise(D)," "actual feelings for childcare as a study field(E)," and "negative faced-childcare person(F)." ANOVA was employed to compare mental health and

the number childcare training among the six clusters. With regard to mental health, ANOVA results showed that the rating for the A was lower and that for the E was higher than other clusters. Furthermore, it was found that the childcare training frequency of the B was higher. The findings suggested the possibility of development of the six clusters through childcare training.

#### P0923

##### Eating and sleeping in preschool children (5): The effects of the mothers' pattern in cooking behavior and eating behavior on children's health, timing of eating and sleeping, and eating behavior

*Tomoko Hasegawa (1), Kazuhiko Fukuda (2), Ikko Kawahashi (3), Sumio Imada (4) 1. Taisho university, Japan; 2. Edogawa university, Japan; 3. Meiji Gakuin University, Japan; 4. Hiroshima Shudo university, Japan*

This study investigated the effects of mothers' patterns in cooking behavior and eating behavior on their nursery behavior and children's health, timing of eating and sleeping, and eating behavior. An Internet survey was conducted by 1,000 mothers (whose ages were from 25 to 44, their children's age were from 1 to 5, and with nuclear families). Using hierarchical cluster analysis, 5 clusters (cluster1: eating out and picky eating habits, cluster2: similar to cluster5, cluster3: healthy cooking but picky eating habits, cluster4: similar to cluster1, cluster5: healthy cooking and no picky eating habits) were extracted from the variables of mothers' picky eating habits, cooking behavior, and frequency of eating out. Results showed that comparing cluster5 to cluster1, the children of cluster1 had poorer health, were more lethargic in the morning, ate and went to sleep later, and were more distracted during meal time than the children of cluster5.

#### P0924

##### Do Moral Decisions Make Us Happy? :Developing the Relationship between Moral Decision Making, Emotion, and Well-Being

*Mari Hasegawa Yokohama City University, Japan*

Do morally correct choices make us feel good and tie into our happiness? In this study, we presented 540 students (4th, 6th, 8th, and 10th grades and college) with anti-social behavior and peer relationship dilemma scenarios and asked them to explain their moral decision making and subsequent emotions. We combined moral decision making (morally correct decision or morally incorrect decision) and emotion (positive or negative) to create the four reaction patterns of Happy Victimizer (HV), Unhappy Victimizer (UHV), Happy Moralizer (HM), and Unhappy Moralizer

(UHM) and investigated how they were related to well-being. Across all four scenarios and age groups, there were very few HM reactions. Analysis suggests that HM reaction and well-being are related in the case of college students, and that emotion can be predicted for older ages based on moral considerations. Reasons for the low number of HM reactions are discussed.

#### P0925

##### Menarche and Interest in Infants among Japanese schoolgirls

*Toshihiko Hinobayashi (1), Mayuko K Shimizu (1), Tadahiyo Kanazawa (1), Tetsuhiro Minami (2), Naosuke Itoigawa (3) 1. Osaka University, Japan; 2. Osaka Seikei College, Japan; 3. Mukogawa Women's University, Japan*

Menarche is viewed as an important milestone in female development at puberty. On the other hand, there have been many studies about increased interest in infants for human females at puberty. In this study we examined the relationship between menarche and interest in infants among Japanese schoolgirls around puberty. Our investigation was carried out by questionnaires mailed to primary and junior high schools. The data was consisted of 45,665 schoolgirls (9–15 years old). The questionnaires included a free-writing question about their desired future job in addition to questions about menstruation. We categorized the free-writing answers to 29 categories included a category about preschool teacher. The desire to be a preschool teacher was considered as interest in infants. We analyzed the relationship between menarche and the desire to be a preschool teacher. We conclude that occurrence of menstruation has a relationship with interest in infants.

#### P0926

##### Mental negotiations between selves and others among young adults: Examining cultural commonality and differences

*Mika Hirai Yokohama City University, Japan*

Today, most researchers will agree that humans from infancy on have dual tendencies toward autonomy and relatedness. Our previous studies among Japanese young adults indicated that in interpersonal conflicting situations, in which their benefits and others clashed, these participants fluctuated between benefiting themselves and benefiting others, and finally they solved the conflicts with considering of the degree of a situation's seriousness and the psychological closeness of the target person (e.g., Hirai, 2000). Based on the results, this study aims to examine the cultural differences in solving interpersonal dilemmas though such mental negotiations. Asking university students in the U.S., China, Korea, Taiwan, and Japan, this study shed light on how people take

balances between selves and others according to seriousness of each situation and the identity of the target figure (parents vs. friends) in every culture. As results, commonalities and differences among cultures were found according to the dilemma situations.

#### P0927

##### **Social Development of Young Children with Externalizing Behavior Problems (2) : Characteristic of Participation in Group Activity**

**Kumiko Hirakawa (1), Noriko Iijima (2), Chie Takahashi (3), Yoshiko Koizumi (4), Tetsuji Kamiya (5), Kazuo Hongo (5)**  
1. *Ishinomaki Senshu University, Japan*; 2. *Seiwa Gakuen College, Japan*; 3. *Tottori University, Japan*; 4. *Shokei Gakuin University, Japan*; 5. *Tohoku University, Japan*

The purpose of the present study was to investigate the characteristics of participation in group activity of young children with externalizing behavior problems. Subjects were 1498 children aged 2 to 6 years. Nursery teachers were asked to complete "Checklist of Group Activity" and "Behavior Checklist for Children with Special Care Needs". The main results were as follows: (1) The older children got the higher score of Group Activity than the younger children in both typically developing children and children with externalizing behavior problems. (2) Typically developing children got the higher score than children with externalizing behavior problems in the age of three, four, and five. (3) Especially children with externalizing behavior problems got the lower score of the item about the concentration on activities than typically developing children. These results suggested children with externalizing behavior problems had difficulties in the participation in group activity.

#### P0928

##### **Social Development of Young Children with Externalizing Behavior Problems (1):Characteristic of the Emotional Development**

**Kazuo Hongo (1), Noriko Iijima (2), Chie Takahashi (3), Yoshiko Koizumi (4), Kumiko Hirakawa (5), Tetsuji Kamiya (1)**  
1. *Tohoku University, Japan*; 2. *Seiwa Gakuen College, Japan*; 3. *Tottori University, Japan*; 4. *Shokei Gakuin University, Japan*; 5. *Ishinomaki Senshu University, Japan*

The purpose of the present study was to investigate the emotional development of young children with externalizing behavior problems. Subjects were 1250 typically developing children ("typical children") and 248 children with externalizing behavioral problems ("externalizing children"). Their age was from two years old to six years old. Nursery teachers were asked to complete "Emotional Development

Checklist" and "Behavior Checklist for Children with Special Care Needs". The main results were as follows: (1) The emotional development scores increased with age in both typical children and externalizing children. (2) Typical children were higher in the score than externalizing children. (3) The differences between typical children and externalizing children were relatively big in 3 years old, 4 years old and 5 years old. It was suggested that children with externalizing behavioral problems had a delay and specificity of the development in not only the emotion regulation but also the emotion expression.

#### P0929

##### **Effects of repeated retrieval on the transfer of learning in younger children**

**Chie Hotta (1), Tajika Hidetsugu (2), Neumann Ewald (3)**  
1. *Kansai University or Social Welfare, Japan*; 2. *Kobe Shinwa Women's University, Japan*; 3. *University of Canterbury, New Zealand*

The aim of this study was to examine whether repeated retrieval during learning influences long-term retention and the transfer of learning in 5- and 6- year old children using verbal task. First, all children took pre-test and studied food-chain task. Then, half of the children were re-shown (repeated restudy condition) and the remaining half of the children were tested on (repeated retrieval condition) these tasks three times, successively. After that, all children were tested on same task to pre-test one and transfer task after one week day. The results showed powerful effects on repeated retrieval could be obtained. The results suggest that even young children can benefit from repeated retrieval in not only long-term retention, but also the transfer of learning.

#### P0930

##### **Social Development of Young Children with Externalizing Behavior Problems (3) : Characteristic of the Language Development**

**Noriko Iijima (1), Chie Takahashi (2), Yoshiko Koizumi (3), Kumiko Hirakawa (4), Tetsuji Kaymiya (5), Kazuo Hongo (5)**  
1. *Seiwa Gakuen College, Japan*; 2. *Tottori University, Japan*; 3. *Shokei Gakuin University, Japan*; 4. *Ishinomaki Senshu University, Japan*; 5. *Tohoku University, Japan*

The purpose of the present study was to investigate the language development of young children with externalizing behavior problems. Subjects were 1498 children same as study (1). Nursery teachers were asked to complete "Language Development Checklist" and "Behavior Checklist for Children with Special Care Needs". The main results were as follows: (1) The language development scores increased with age in both typical children and

externalizing children. (2) Typical children were higher in the score than externalizing children. (3) There were the clear differences between typical children and externalizing children in the item "He/she knows three names of flower". But there were no differences in the item "He/she knows the meaning of strong-weak." It was suggested that externalizing children have imbalance of language development.

#### P0931

##### **Relationship of gratitude with joy of giving and satisfaction with life** *Yukitaka Ikeda Wayo Women's University, Japan*

This short-term longitudinal study examined the relationship of gratitude with joy of giving and satisfaction with life. Participants completed web surveys on feelings of gratitude and the joy of giving as well as the Satisfaction with Life Scale (SWLS) at Time 1 (N = 1800; age 10s-60s) and 5 months later at Time 2 (N = 1141; age 20s-60s). At Time 1, feelings of gratitude toward abstract objects (e.g., ties of life) were related to the joy of giving in all 10-year age groups ( $r = .38-.51$ ) and to SWLS among participants in their 20s to 50s ( $r = .39-.54$ ). A cross-lagged effect model showed that feelings of gratitude toward abstract objects promoted the joy of giving among those in their 30s to 50s. SWLS promoted feelings of gratitude toward abstract objects among those in their 20s, but such feelings promoted SWLS among those in their 60s; this relationship was reciprocal among those in their 30s and 40s.

#### P0932

##### **Observation of Neonatal Spontaneous smiling and Social Smiling** *Masahito Ikeda Kanagawa Prefectural Police, Japan*

Neonatal spontaneous smiling has been reported by many researchers (Dondi, M. et al, 2010); however, the appearance period of social smiling differs among researchers. Some researchers reported neonatal social smiling (e.g., Wolf, 1963), while others reported that social smiling appears from 2-3 month after birth (e.g., Kagan and Fox, 2006). In this study, we measured social smiling of a neonate girl under four conditions (mother's smile face, voice, holding, and combined condition) through video recording twice a week. Spontaneous smiling after one hour of sleep was also measured three times a week. The result showed that neonatal smiling under the combined condition can be observed at 17 days postnatal. The relation between neonatal spontaneous smiling and social smiling is discussed.

#### P0933

##### **Children's effortful control: behavioral tasks of 60 months**

**Kousuke Ikki (1), Rie Mizuno (2)** 1. *Chukyo university, Japan*; 2. *Shool of Psychology, Chukyo university, Japan*  
Effortful control (EC) is the self-control aspect of temperament. It is defined as the ability to inhibit a dominant response in order to perform a predominant response, to detect errors, and to plan. At the preschool years, EC demonstrates considerable development. EC consists of two neural systems: the executive attention and inhibitory control systems. We investigated the outcome of EC in preschoolers. Preschoolers (60 months) were assessed using a behavioral test battery that includes eight tasks; three tasks designed to measure the executive attention, five tasks designed to measure the inhibitory control. Test response coding focused on task performance and the behavioral patterns. By investigating performance and behavioral pattern, we tried to evaluate EC as a construct and an occurrence pattern.

#### P0934

**Effects of Parenting Attitudes and Parental discipline on Guilt Feelings in 5-Year-Old Preschoolers**  
**Takayuki Ishikawa** *Utsunomiya University, Japan*

This study examined how parental disciplinary acts can affect the degree of guilt children may feel from their wrongdoings and found that parenting attitude and parental discipline play an important role. 5-year-old preschoolers ( $N = 75$ ) and their mothers participated in this study. Two different situations were told to the participants: interpersonal situation and rule-breaking situation. A twenty eight-item scale was used to mothers. This scale was formed with four scales: Responsiveness, Control, Inductive Discipline and Power Assertion. Pass analyses were conducted to examine the relationship between the mother's variables and the guilt situations, and as a result, Responsiveness mediated inductive discipline, which in turn affected both interpersonal and rule-breaking situations. Furthermore, Control directly related to children's guilt. From the results, parenting attitude plays a role in the evoking guilt, and the parental inductive discipline had a significant effect on how children feel guilt, no matter what the situation.

#### P0935

**What do children think about laughing at others?**  
**Rie Ito** *Shiraume Gakuen University, Japan*

Although it is true that we can easily see children's positive laughter and smiles that make us happy, I observed that some preschoolers laughed at others like ridicule (Ito, 2012 in Japanese). However when do children come to understand that laughter and smiles aren't always happy? The purpose of this study is about preschoolers' understanding of the dark

side of laughter through the result of the experiment. I conducted 4 kinds of tests, 2 understanding emotion tasks, 4 theory of mind tasks, 2 understanding laughter tasks and vocabulary test, PVT-R. 38 Japanese preschoolers participated in this experiment. Everyone knows that laughter and smiles convey positive emotions. This study revealed the development of laughter and smiles from "Just Funny", no-malicious-laughter, to "malicious laughter".

#### P0936

**The Context of Young Children's Utterances about Positive and Negative Emotions in Peer Play**

**Miho Iwata** *Chiba university, Japan*

This study investigated the social context of peer play on young children's utterances about positive and negative emotions. Children aged 3 to 5 years were observed in preschool free play sessions an average of twice a month for a year. We identified several social contexts for utterances during peer play: (a) sharing play (excluding symbolic play); (b) planning/coordinating for play (excluding symbolic play); (c) sharing symbolic play; (d) planning/coordinating for symbolic play; and (e) commentary/reflective. The results suggest that 4-year-old children's utterances about positive and negative emotions are particularly rich in the context of "(d) planning/coordinating for symbolic play." On the other hand, 5-year-old children's utterances about positive emotions were richer in the context of "(e) commentary/reflective," and utterances about negative emotions were richer when "(b) planning and coordinating for play." The results are discussed in terms of developmental changes of the social context in preschool children's emotional understanding.

#### P0937

**The Relationship between Infant Heart-Rate Response and Regular Music Exposure**

**Sachiyo Kajikawa (1), Sumiko Kuroishi (2)** 1. *Tamagawa University, Japan*; 2. *Pigeon Corporation, Japan*

The use of electronic music devices, as opposed to traditional caretaker singing, has been recently increasing in baby care. To investigate infant responses to these different types of sounds, we evaluated: 1) whether infants respond distinctly to live maternal singing, recorded music, and recorded bird song, and 2) whether the amount of exposure to music at home was related to the response. The heart rates (HRs) of 24 three-month-old infants were measured while they listened to music stimuli. The results showed that live maternal singing and a recorded lullaby had effects on reducing infants' HRs, and the average HR decrease was larger for infants who were exposed to music regularly at home than for those who had less opportunity to hear music. No differences were found in the responses to recorded

bird song. Regular music exposure may affect infants' attention to recorded lullabies, as well as maternal singing.

#### P0938

**Identity formation and positive youth development: A four wave longitudinal study**

**Goda Kaniusonyte, Rita Zukauskiene, Oksana Malinauskiene** *Mykolas Romeris university, Lithuania*

Identity formation is a core developmental task of adolescence. Identity style refers to the strategy that individuals characteristically use or would prefer to employ seeking a successful identity resolution (Berzonsky, 1989). Positive youth development (PYD) is strengths-based model (operationalized by Five C's: connection, character, confidence, competence, and caring) (Lerner et al., 2005) Aim of this study was to explore relationships between positive youth development trajectories and identity styles (informational, normative and diffuse-avoidant). This study sample consists of Lithuanian adolescents participating in four wave longitudinal study, collected with a 1-year interval (9 grade at T1,  $N = 450$ ,  $M = 15.12$ ,  $SD = 0.45$ , 51.4% girls). Using LCGA (latent class growth analysis) three PYD trajectories was identified (increasing, decreasing and mid-stable). To answer research question a model in which the PYD classes predicted initial levels and rates of change of identity styles was tested. Findings indicated that the decreasing PYD adolescents displayed a more troublesome identity development.

#### P0939

**A longitudinal study of the Job-Hunting Maintenance Processes among Japanese university students**

**Yuki Karube (1), Jun Sato (2), Masashi Sugie (3)** 1. *Graduate School of Comprehensive Human Sciences, University of Tsukuba, Japan*; 2. *Ibaraki Prefectural University of Health Sciences, Japan*; 3. *Faculty of Human Sciences, University of Tsukuba, Japan*

The present study employed a longitudinal design and aimed to examine the "job-hunting maintenance processes": the processes during which university students maintain their job-hunting activities after having received rejections from companies they had applied to. The participants were job-seeking undergraduate and graduate ( $N = 28$ ) students, who completed questionnaires twice: the beginning (Time1) and the ending (Time2) of their job-hunting schedule. ANOVAs were conducted to analyze changes in job-hunting maintenance processes. The results were almost consistent with the previous study which examined students who had finished their job-hunting activities (Karube et al,

2015), except "self-disclosure to others", which increased from Time 1 to Time 2 ( $p < .01$ ). This result indicated that job-seekers tended not to self-disclose themselves at the beginning of the process, because they felt low controllability or were reluctant to express their negative feelings (Endo et al, 1994). However, as they become more experienced with job-hunting, they tend to self-disclose more.

#### P0940

### The relations of Japanese parental copings to young children's negative emotions and internalizing, externalizing problems, and self-report of depression in middle childhood

*Natsume Kashima Seinan Gakuin University, Japan*

The purpose of this study was to examine the relations of Japanese parental copings to young children's negative emotions and internalizing, externalizing problems, and self-report of depression in middle childhood ( $N = 24$ , 10 boys, 14 girls). Parental copings to young children's negative emotions at child ages 4, 5, and 6 were assessed with the Coping with Children's Negative Emotion Scale (CCNES). Internalizing and externalizing problems at child ages 7, 8, and 9 were assessed with Child Behavior Checklist (CBCL) via parent's reports. And self-reports of depression at child ages 8, and 9 were assessed with Birlerson Depression Self-Rating Scale for Children (DSRS-C). Results showed that parental punishment reactions to negative emotions at child ages 5 were significantly correlated with internalizing problems at child ages 7, and 8. And parental distress reactions to negative emotions at child ages 4 were significantly correlated with externalizing problems at child ages 7, 8, and 9. Finally, parental emotion-focused reactions to negative emotions at child ages 4, 5, and 6 were negatively correlated with self-report of depression at child ages 9.

#### P0941

### Relationship between Executive function Questionnaire and Strengths and Difficulties Questionnaire in Childhood

*Masatoshi Katagiri (1), Hiroyuki Ito (2), Yasuo Murayama (2), Megumi Hamada (2), Ai Uemiya (2), Kazuyo Nomura (2), Masatsugu Tsujii (2,3)* 1. Hokkaido University of Education, Japan; 2. Hamamatsu University School of Medicine, Research Center for Child Mental Development, Japan; 3. Chukyo University, School of contemporary Sociology, Japan  
The present study investigated the relationship between newly-developed Executive Function Questionnaire and Strengths and Difficulties

Questionnaire (SDQ) which is adaptive behavior scales in Childhood. Participants were parents of children in grade 2, 4, 6, 7 and 9 (total 3581). We calculated standardized regression coefficient in a model from which gender, grade, IQ, ASD traits, ADHD traits and DCD traits have been removed. Results of multiple regression analysis indicated remarkable effects between executive function score and prosocial behavior score, and between executive function score and conduct problem score. However, scores between executive function and academic achievement did not show a strong effect, although still significant. These results suggest that high evaluation of executive function by parents are related to prosocial behaviors among children, while low evaluation of executive function are related to conduct problems.

#### P0942

### Observation of Responsive Interactions between Children and Childcare Workers at Japanese Kindergartens

*Tokuko Kawasaki Yamaguchi University, Japan*

At Japanese kindergartens there are many situations in which responsive interaction occurs as childcare workers support children in play and daily activities. In these situations, childcare workers make repeated use of essentially different responses, such as direct verbal responses or non-verbal, meaningful looks. The experience of being exposed to these different responses may be a necessary process in the formation of a child's psychological makeup, in which a child is able to internalize the perspective of another individual. This research used the case study method in the context of Japanese pre-school education. From observation of responsive interaction between childcare workers and children, it is thought that a child's intentionality is formed from the repetition of response to external environments, reflection on the internal world, and immersion in play. These three elements can be considered to be part of the process by which children internalize the understanding of another person's perspective.

#### P0943

### Difficult life situations and mental resources of teenagers

*Svetlana Khazova Kostroma State University, Russia*

There is an opinion that the mental resources are more intensively used by the subject in stressful situations. Cognitive assessment of the situation and its subjective value is important for the organization of behavior. According to teenagers the mobilization of mental resources requires the situation of interaction with peers and parents and the tense situations of tests (examinations, performances and competitions). According semi-structured

interview are described ideas about emotional and strong-willed, intellectual, communicative and physical resources. The most "valuable" resources are cheerfulness, optimism, responsibility, kindness, sociability, friendliness and sense of humor. Boys note importance of confidence in themselves and mind, dexterity and power, and girls note empathy and a freedom in communication, attractiveness and style. It is important that a question about resources was difficult for teenagers. We connect it with age features, namely, the insufficient level of development of the I-conception and insufficient conceptualization of experience and own opportunities.

#### P0944 IT-technologies for Emotional Intelligence Development in Russia and Kazakhstan

*Alla Kim (1), Natalya Khon (2), Jamilya Akhmetova (1), Elmira Kalymbetova (1)* 1. al-Farabi KazNU, Kazakhstan; 2. Turan University, Kazakhstan

The development of Emotional Intelligence (EI) is a very important issue in modern psychology. Most of training procedures which have the goal of EI development are composed as a sequence of training sessions in a real conditions of communication of people in real groups. This format of work has its own advantages. There is one but large disadvantage of such kinds of groups - for some people it makes difficult to share his/her own problems in public. IT-technologies, or IT program provides opportunity to escape this barrier and train self-awareness or other parts of EI in private. Advantages and disadvantages of some Russian IT-programs are discussed. Most of them follow P.Ekman idea on emotion recognition. The novelty of a new IT-technology, which is being developed by our project team, consists of using reframing on the base of metaphors, images, fiction etc. as the program database.

#### P0945

### Toward the construction of a new developmental model explaining children's understanding of external representations

*Minako Kimura, Yoshinobu Kato Nagoya University of Arts, Japan*

We have conducted a series of experiments on how young children come to understand the representational nature of external representations such as pictures, TV images, and a variety of dolls. Our findings indicated that (1) the age at which children attain full understanding of a symbol's representational nature depends on which kind of symbols they view and that (2) an understanding of TV images develops much more slowly as compared to other external representations. The purpose of this study is to propose a new theoretical model for describing the evolving understanding of external representations. On the basis of Perner's ideas



that representation consists of medium, referent, and sense, we introduce into our model the notion of "concept" as another element culturally transmitted from adults to children. The development of children's understanding of external representations could be explained through the change of relationships among these four elements in the model.

#### P0946

### The relationship between multidimensional empathy and nursery traits regarding students in the kindergarten and nursery-school teacher education courses

**Kazuyo Kino (1), Yasuko Takahashi (2), Chiharu Uchida (3)** 1. Miyagi Gakuin Women's University, Japan; 2. Aichi University of Education, Japan; 3. Kyoei University, Japan

The purpose of this study was to explore the dimensions of empathy related to aptitude for kindergarten and nursery school teachers. A self-report questionnaire, including the Multidimensional Empathy Scale (MES) and the Nursery Trait Inventory (NTI), was administered to seventy-two female undergraduates in the kindergarten and nursery-school teacher education courses. MES was constructed with the five subscales; Other-Oriented Emotional Reactivity (OR), Self-Oriented Emotional Reactivity (SR), Emotional Susceptibility (SE), Perspective Taking (PT), and Fantasy (FA). Correlational analysis revealed that the OR and PT were positively related to altruistic, responsiveness, and nurturing scales in NTI. PT was also positively correlated with the logical thinking scale. On the other hand, SR and SE were negatively related to sociability and power of action scales, i.e. behavioral forwardness, in NTI. These results will contribute to future research on compassion fatigue of kindergarten and nursery school teachers.

#### P0947

### Conceptual Examination and Scale Development of Parental Independency from Their Adolescent Child

**Yuri Kitahara** The University of Tokyo, Japan

This study aims to develop a scale for measuring a sense of parental independency, so-called Kobanare in Japanese. A number of parents with an adolescent child enter their middle age, in which they experience a significant transformation of their life such as physical deterioration and positional changes at work or at home. A modification of the parent-child relationship is one of the distinctive developmental themes during this stage. 115 parents completed the questionnaire, and as a result of exploratory factor analysis, four factors were extracted: "mutual independent relationship", "creating values toward their own way of life", "non-interfering behaviors", and

"respect for their child". Each factor showed relatively high internal consistency ( $\alpha = .57$  to  $.73$ ). Construct validity of the scale was also examined using the Identity Scale and the Identity Reintegration Scale. The constructed scale indicated that the concept of parental independency was associated with identity reintegration in middle-aged parents.

#### P0948

### The psychological process that leads to finding a new commitment

**Tomoko Kitani, Hikari Hongo, Shougo Hihara, Issui Manabe, Yuko Okamoto** Graduate School of Education, Hiroshima University, Japan

A loss of employment can lead to an identity crisis. In order to reconstruct the lost identity, it is necessary to find new commitments that replace employment in a retiree's life. Various examples of new commitments have been shown in previous studies. However, the psychological process that leads an adult to select specific new commitments has not been understood. This study aims to examine the processes involved in the retirement crisis and the subsequent selection of new commitments. The participants of the study are 20 retirees who have just retired and their interviews were analyzed using Trajectory Equifinality Model and Dynamic Systems Approach. In particular, the analysis focuses on the changes in the perception of employment and new commitments while they affect each other and the psychological process that leads to finding a new commitment in a retiree's life is discussed.

#### P0949

### Relation among Number Reading, Number Writing, and Number-related Tasks in Pre-school Children

**Wakaba Koike (1), Kyoko Yamagata (2)** 1. Kyoto Women's University, Japan; 2. Kyoto Notre Dame University, Japan

Several studies have focused on the development of numerical notations, but few studies have examined the relationship between the acquisition of numerical notations and number concepts. This study examined the relationship among number reading, number writing, and number-related tasks, such as guessing how many fingers on human hand, addition up to 5, and counting of knocks. Japanese children aged 3-5 years ( $N = 53$ ) participated in this study. The results of partial correlations controlling for age showed that both the guessing how many fingers and the counting of knocks correlated significantly with number reading and number writing. On the other hand, the addition up to 5 didn't correlate significantly with them.

#### P0950

### Changing Demographics of University Students not Desiring a

### Steady Romantic Relationship over the Course of One Year

**Yasumasa Kosaka** Wako University, Japan

In Japan, about 20% of young people from age 18 to 25 don't want to have a steady romantic relationship (Kosaka, 2011, 2013). This study investigated the number of young people who didn't desire a steady romantic relationship, but eventually got and the others desired for romantic relationship after one year. Participants were 96 young people who answered questionnaires about not desiring a romantic relationship in summer of 2014. In July 2015, 7 of them (7.3%) got steady, but 2 of this 7 currently broke up the relationship, and 29 of them (30.2%) remained single but were desiring a romantic relationship. The reasons for desiring a romantic relationship described in free responses were categorized in 7 groups (hoping for mental support, wanting to feel a sense of fulfilment, influence of friends, fret of aging, mental leeway, increasing interest in romantic relationships, and opportunity for self-understanding).

#### P0951

### Characteristics of mother-child co-making of "CALPIS" and its effects on psychological development

**Megumi Kotani (1), Youko Miki (2), Nobumoto Tajima (3), Takahiro Miyashita (3)** 1. Calpis Co., Ltd., Japan; 2. Research and Education Center for Lifespan Development, Shirayuri College, Japan; 3. Shirayuri College, Japan

"CALPIS" is a concentrated lactic acid drink that has been consumed for many years in Japan. In this study, we asked mothers to co-make "CALPIS" dilute and drink it with their children. We then interviewed the mothers about their experiences, and analyzed the data using the K-J method. The results showed that the children became more confident by preparing "CALPIS" for others, as well as for themselves. Then, they showed a positive attitude in approaching other activities, such as helping their mothers do housework. Furthermore, mothers found that it was a good opportunity to communicate with their children, and were happy to have "CALPIS" made by their children. Mothers also had more incentive to do more difficult mother-child co-working activities. These results suggest that mother-child co-preparing and drinking "CALPIS" causes short-term behavioral changes among both children and mothers, followed by long-term development of their consciousness and cognition.

#### P0952

### Young children's views of emotions in themselves: preschoolers'

### telling about their own emotional experiences

*Yukari Kubo Toyo University, Japan*

The purpose of this study is to explore young children's views of their own emotions. Each preschool children was asked (1) others' emotional (happiness, sadness and anger) antecedents, and (2) their own emotional (happiness, sadness and anger) antecedents. It was found that preschoolers were less likely to give immediately plausible antecedents for sadness and anger experienced by themselves than sadness and anger experienced by others. They gave immediately plausible antecedents for happiness experienced by themselves and by others. The results of others' emotional antecedents questions showed that they have general knowledge of negative emotions as well as positive ones. It suggests that although preschoolers have general knowledge of negative emotions, they do not tend to report antecedents of their own negative emotions. Possible explanations of their tendency not to report antecedents of their own negative emotions were discussed in terms of not only cognitive factors but also motivational factors.

### P0953

#### Selectivity in sharing behavior and delayed gratification in preschoolers

*Yuto Kumaki Kyoto University, Japan*

Children are known to become selective in sharing behaviors, after age four. This study investigated whether 1) selective sharing in preschoolers are associated with the expectations about partners' prosociality, and 2) the selectivity relates to delayed gratification. Four- to 6-years-old children completed four inhibition tasks and a sharing task with three partners; a friend, a non-friend, or a stranger. In sharing task, participants predicted sharing way by three sharing partners, before deciding their own sharing way from two alternative choices. The result showed that both the identity of partners and the prediction about partner's sharing way affect participants' sharing. When the partners were non-friend, the more participants predicted prosocial sharing by partners, the more they chose prosocial way of sharing. Moreover, correlation analyses indicated a positive relationship between delayed gratification and selectivity in sharing. These results suggest that sharing selectivity in preschoolers is associated with the expectation of future rewards.

### P0954

#### Development of desirable self-assertive behavior in infants

*Mihoko Kuramori Fukuyama City University, Japan*

The aim of present study was to clarify the relationship between self-assertive behavior in infants and the development of language, social

behavior or attachment. The mechanism that changes the strategy of self-assertive behavior from non-verbal to verbal communication in this developmental stage was discussed. One and two years old infants in nursery were surveyed in their behavior. Previous researches indicated 1 year old baby is the period that they use non-verbal behavior such as pushing, hitting or biting when the conflict was happened between their friends. Results in present study suggested the frequency of non-verbal behavior correlated with the dependency on his/her caregiver and the frequency of non-verbal behavior correlated with a trust in the caregiver. It is indicated that the promoting factor of this change is what the infant well express their attachment behavior to the caregiver.

### P0955

#### The mechanism of promoting the change in the self-assertion strategies from non-verbal to verbal behavior in infancy

*Mihoko Kuramori Fukuyama City University, Japan*

The aim of present study was to clarify the relationship between self-assertion strategies in infancy and the development of language, social behavior or attachment. The mechanism that changes these self-assertion strategies from non-verbal to verbal behaviors in this developmental stage was discussed. Previous researches indicated that 1- and 2-year-olds use non-verbal behaviors such as pushing, hitting or biting when the conflict was happened between their friends. Results in present study suggested the frequency of non-verbal behaviors correlated with the dependency on his/her caregiver and the frequency of non-verbal behaviors correlated with a trust in the caregiver. It is indicated that the promoting factor of the change of self-assertion strategies from non-verbal to verbal behaviors is what the infant well express their attachment behavior to the caregiver.

### P0956

#### Infant-caregiver interactions in Japanese infant homes: Focusing on infant holding

*Saki Kurogi (1), Kikuyo Aoki (1), Kyoko Shimada (2), Ryoko Yokoyama (2), Miyuki Otsuka (1) 1. Ochanomizu university, Japan; 2. Shirayuri Baby Home, Shin-seikai, Japan*

Infant homes in Japan focus on high-quality care that emphasize attachment and promote small-group care. However, previous international studies have reported that institutional care produces an early interaction style distortion (Bakermans-Kranenburg et al., 2011). This exploratory study examined the occurrence of these problems in Japanese infant homes. Among the interactions, this study focused on the basic exchange of early and

repeated holding of infants every day. This behavior was evaluated with 19 infants (age: 1–12 months), once a month, for four months. Twenty items such as eye contact and posture were evaluated. The results contradicted previous findings that in comparison with home-reared children, infants in institutional care were held more unnaturally and reared more awkwardly. Instead, the present study provides evidence that institutional care infants can benefit from the everyday holding of responsible caregivers. This will encourage infants to acquire an appropriate early interaction style.

### P0957

#### Is understanding of pretense related to inhibitory control?: difference between intention understanding and representational manipulation

*Aya Kutsuki Kobe Shoin women's university, Japan*

It has been suggested that children's pretense and inhibitory control are related in some way but a very few studies have examined such relation empirically. Preschoolers (N=31, M age = 57.90, range 41–74 months) participated in the current study and were given a series of pretense understanding and inhibitory control tasks and their parents were also asked to answer a questionnaire about children's self-regulatory behaviors. Children's pretense understanding was evaluated and yielded two kinds of scores showing: understanding of intention involved in pretense and ability to understand both others' intention and what the object really was. Hypothetically the former represents children's ability to understand others' intention or the latter while representing intention understanding, also represents manipulation of representations. The current study aimed to seek differential relations between different abilities involved in pretense understanding and kinds of inhibitory control.

### P0958

#### How Does Child-Rearing Thoughts and Feelings Change ? : A Comparison among generations

*Chiaki Kuwabara, Yukako Ide Bunkyo university, Japan*

This study aimed at examining a comparison among generations of child-rearing thoughts and feelings. College students (n=157), parents of preschoolers (n=135) and parents of college students (n=76) completed a questionnaire containing a preliminary pool of 78 items that were selected from previous studies. Exploratory factor analysis of the questionnaires completed by parents of preschoolers identified 5 factors: positive feelings, self-growth through child-rearing, negative feelings, social meaning toward child-rearing, change in lifestyle. The results

of a comparison among generations were as follows: (a) Parents of preschoolers had higher score in positive feelings than other generations, (b) College students had higher score in negative feelings than other generations, (c) College students had higher score in social meaning toward child-rearing than parents of preschoolers. We discussed how child-rearing thoughts and feelings changed.

#### P0959

### **Southeast Asian American College Students: Maternal Socialization in Relation to Academic Outcomes**

**Susie D Lamborn, Ryan Lynch, Bo Zhang** *University of Wisconsin-Milwaukee, United States of America*

This study examined maternal socialization factors in relation to academic motivation outcomes for Southeast Asian American college students. 115 Hmong American students completed a survey that included three aspects of ethnic-racial socialization from Hughes et al.'s model (Cultural Socialization, Preparation-For-Bias, Mistrust-of-Others) and Soens et al.'s Promotion-of-Volitional-Functioning (a form of autonomy support stemming from Self-Determination-Theory). Four academic motivation constructions included College Interest, College Efficacy, Autonomous Motivation, and Controlled Motivation. Using regression analyses, gender was entered in the first step as a control variable. Next, three aspects of ethnic-racial socialization were entered. Finally, Volitional Functioning was entered in the last step. For Autonomous Motivation, Preparation-for-Bias (positive) and Mistrust-of-Others (negative) were predictors. In addition, Volitional-Functioning also predicted higher Autonomous Motivation. For College Interest, only Volitional-Functioning was a significant predictor. For College Efficacy and Controlled Motivation, there were no significant predictors. Results will be interpreted in the context of refugee families and college success.

#### P0960

### **Online and Offline Friendship Networks among Chinese Adolescents**

**Li Lei, Xiaochun Xie, Dong Liu, Qing Wang** *Renmin University of China, China*

This study aims to investigate the similarity of Chinese adolescents' online and offline friendship. One hundred of thirty-eight adolescents from one Chinese middle school completed the peer nomination questionnaires of online and offline friendship, and the communication frequency with online and offline friends. Quadratic assignment procedure of social network analysis was used to test the similarity of adolescents' online and offline friendship.

Results showed that there were positive associations between Chinese adolescents' online and offline friendship networks, and the communication frequency in online and offline friendship networks. The density of adolescents' offline friendship networks was higher than their online friendship networks. Adolescents' online strong tie positively associated with their offline strong tie, and adolescents' online weak tie positively associated with their offline weak tie. This study indicated that Chinese adolescents' online and offline friendship structure are similar, and online communication is the extension of offline communication.

#### P0961

### **The attachment's role: social support to social exclusion**

**Haojian Li, Ping Hu** *renmin University of china, China*

Current study explored the affect of attachment on influence and relief of social exclusion. Pre-post test design was employed in this study to verify the impact of social exclusion on the emotional state of the college students, and to explore the relationship between attachment security and the impact of social exclusion on emotion; Secondly, employing Multi-level inter-group design, current study systematically explored the recovery affect of different levels of social support on social exclusion, especially the affect of attachment on the recovery course. It was found that social exclusion significantly decreased positive mood of college students, and attachment security was significantly and negatively correlated with social exclusion's impact; when the level of social support is higher than that of social exclusion, negative emotional results of social exclusion was eased (reduction), on the contrary, it is not reduced; attachment security negatively predict the reduction amount.

#### P0962

### **Self-Regulation of Preschoolers in Taiwan: Correlation of Private Speech, Executive Function and Effortful Control**

**Hui-Li Lin, Pei-Hsuan Lee** *Fu Jen Catholic University, Taiwan*

This study investigated Taiwan preschoolers' development of self-regulation consisted of executive function (EF: Selective Attention-SA, Planned Connection-PC, Delay of Gratification-DoG), private speech (PS: induced by SA and PC), and effort control (EC: EC scale). Contexts (spontaneous vs. inhibitory) and task difficulties in the SA/PC were manipulated. Seventeen 4-year-olds (M/F = 7/10; M = 48.41 Months; SD = 2.06 Months), twenty 5-year-olds (M/F = 12/8; M = 59.65; SD = 2.34), and eighteen 6-year-olds (M/F = 9/9; M = 70.11; SD = 4.16) were recruited. Results showed (1) PS amount and internalization level differed between the two contexts; (2) across contexts

and difficulties, inverted U-shaped tendency and individual consistency were shown in PS; (3) age differences were found only in SA/PC but not in DoG; and (4) SA and PC were correlated but not with DoG, which was correlated with the EC scale. A dual-process model was supported.

#### P0963

### **Resilience and Post-traumatic Growth among Early Adults Affected by HIV/AIDS: The Role of Rumination and Self-esteem**

**Yan Liu (1,2), Jingjing Huang (1,2), Guoqing Xu (3), Chaoran Shen (4)** *1. School of psychology, Liaoning Normal University, China; 2. Collaborative Innovation Center for Healthy Personality Assessment and Training of Children and Adolescents, Liaoning Normal University, China; 3. Department of psychology, Dalian Medical University, China; 4. National Key Laboratory of Cognitive Neuroscience and Learning, Beijing Normal University, China*

Post-traumatic Growth (PTG) refers to positive psychological changes resulted from individuals' struggle against their main threatening life adversity. Some research have found resilience is one of important influence factors on PTG. The present study aimed to explore how resilience influences PTG. A sample of 212 early adults whose parents were infected by HIV/AIDS participated in this research. They were asked to report some demographic information and to fill out four questionnaires to evaluate their resilience, rumination, self-esteem and PTG. The results showed that (1) Resilience could affect PTG directly, via deliberate rumination indirectly, also via the indirect way which intrusive rumination influenced deliberate rumination. (2) Self-esteem moderated the path from resilience to intrusive rumination: only for persons with low self-esteem, resilience had an effect on intrusive rumination (simple slope = 0.57); but not for the high-esteem group (simple slope = 0.09). The theoretical and practical implications are discussed.

#### P0964

### **Experimental Research on Cognitive Categorization in College Students with Different Hoarding Behavior Level**

**Meng Liu (1), Liping Fu (2)** *1. Jiangnan Art Vocational College, China; 2. Guizhou Normal University, China*

University students with hoarding behavior manifested that their living environments were extremely cluttered, excessive acquisition of objects, emotional distress in discarding things, and which were similar to the hoarding disorder. The hoarding behaviors were often closely connected with their cognitive categorization ability. The aim of the study was to

explore the cognitive categorization characterizes of different hoarding level in university students by SIR scale, and three classification tasks (hoarding cognitive cards, artificial insect images, and living things images). The results showed that university students with higher score in SIR scale created more categories and included fewer items in each of them. Those students with higher hoarding behavior level spent more time on cognitive categorization, accompanying more errors and anxious emotion. The categorization time was affected association degree, and higher degree with longer time. In successive presentation condition, the students with higher hoarding behavior level were more influenced by the degree of association and easily made categorization error.

**P0965****How Five-year-old Children's Response Sequence Patterns Change During Their Class Discussion Time**

*Xiaoyun Lu Graduate School of Education, University of Tokyo, Japan*

This research analyzed the changes of five-year-old children's response sequence patterns when they participated in class discussions over a period of nine months. Through discourse analysis based on the social-cultural perspective (Sawyer, 2002; Mehan, 1985) this research focuses on the children's responses to the teacher. Participants included a class of 9 (3 boys and 6 girls,  $M = 69.9$  mos.) five-year-old children at a certified day care center in Tokyo, Japan. The teacher of this class was a woman in her forties who has 9 years of early childhood nursery teaching experience at the day care center. Naturalistic observations were carried out once a week from July to March of the next year, and field notes were based on recorded video data. Evidence indicates that every five-year-old child has their own response sequence pattern, and their differences in response sequence patterns suggests both individual differences and developmental differences.

**P0966****Self Esteem, Self-Regulation and Risk Taking Behavior among College Students**

*Sheriffa Mahama, Vivian Tackie-Ofosu University of Ghana, Legon, Ghana*

The study examined the relations among risky behaviors (Porn, Alcohol, video games, drugs and risky sex), self-esteem and self-regulation among purposively sampled college students ( $N = 161$ ; Male = 37.3%; Age =  $M$  (SD) 21.5(4.41) at a large public university in Ghana. Multiple linear regression and mediation analysis were used to investigate the role of self-regulation as a mediator of the relationship between self-esteem and risky

behaviors. Results indicated the reported incidence of these risky behaviors among the sample were rather low however, there was a clustering of risky behaviors students in line with the theory of problem behavior. Males had increased chance of involvement in all risky behaviors except video games. Self-esteem and self-regulation were significant predictors of self-reported involvement in risky behaviors. Self-regulation did not successfully mediate the relationship between self-esteem and the risky behaviors among this sample. The study results present some implications for interventions.

**P0967****Identity styles changes over one year in adolescence: age and gender differences**

*Oksana Malinauskiene, Rita Zukauskiene, Goda Kaniusonyte Mykolas Romeris university, Lithuania*

Identity formation is one of the main tasks of adolescence. Adolescents can use various strategies to address these identity questions or to avoid them (Berzonsky, 1989). Three identity styles (information-oriented, normative, and diffuse-avoidant) are involved in social-cognitive processing of self-relevant information. Aim of this study was to explore relationships between adolescents' identity styles, age and gender. This study sample consists of Lithuanian adolescents participating in two wave longitudinal study, collected with a 1-year interval ( $N = 1376$ , T1:  $M = 16.35$ ,  $SD = 1.23$ ; T2:  $M = 17.35$ ,  $SD = 1.23$ ; 51.3% girls and 44.7% boys). The results showed that two of three identity styles were related significantly with age and gender: information-oriented identity and normative styles decreased with age, more boys than girls are characterized by diffuse-avoidant and normative identity styles, and more girls than boys by information-oriented identity style.

**P0968****A Study of Experiences Influencing Development of Identity in Adolescence**

*Issui Manabe, Shogo Hihara, Hikari Hongo, Tomoko Kitani, Yuko Okamoto Hiroshima University, Japan*

The objective of this research was to do an exploratory study, from the Dynamic System Approach perspective, of experiences that influence development of identity in adolescence. We conduct Retrospective Ego Identity Status Interview with vocational domain, to 37 adolescent university students. We measured identity development by two factors: exploration sense and commitment. Using interview surveys and the KJ Method, we studied whether the types of experiences affecting interaction with the two factors induce identity change in university students. During the study, we categorized

experiences as "lively," "ambiguous," or "interest-centered." The results suggest that lively experiences, identified with "past personal crisis," "advice from surrounding people and teachers," "volunteering," "training," and "part-time work," promote identity development. By contrast, it is suggested that ambiguous experiences - "vague/compromising" and "reluctant/half-hearted" efforts- and interest-centered experiences, identified with the pursuit of "personal interests" such as "television and books," do not promote identity development, and do not induce identity change.

**P0969****The defective number sense hypothesis in preterm children**

*Sandrine Masson (1), Guy Chazoule (2,4), Caroline Castel (3), Michel Fayol (2,4), Catherine Thevenot (1,3) 1. University of Lausanne, Switzerland; 2. University of Clermont, France; 3. University of Geneva, Switzerland; 4. CNRS, France*

This work presents a precise description of mathematical difficulties in preterm children. In the literature, it was not clear so far whether these difficulties constitute a primary deficit or stem from impairments in more general cognitive skills. In order to examine these possibilities, we tested 5-year-old very preterm children on their general numerical abilities and on a series of non-symbolic and symbolic numerical comparison tasks. Our main results reveal specific difficulties in preterm children in the most basic numerical system. Indeed, preterm children show greater numerical distance effects than full term children in non-symbolic tasks and in a symbolic spoken word comparison task. These conclusions also provide new insights about the relationship between non-symbolic and symbolic number systems.

**P0970****Description and analysis of the experience of a Japanese father as a primary caregiver**

*Hideki Masui Kyoto University, Japan*

Although studies on fathering in Japan has expanded dramatically in recent years, in most researches, fathers are only regarded as breadwinners and supporters in their family. In this presentation, I will present a life-history interview with one father who has two children aged 11 and 7. The interview examined how a father raising children have developed through and made sense of their everyday life. The data revealed that he felt subservient (e.g. he had difficulty introducing himself to be a house-husband (sengyo-shufu).) through the drastic change in his lifestyle when his first child was born. Focusing the meaning of this word and describing the process in which he accept the change, I will discuss the difficulty of Japanese fathers as primary caregivers.

**P0971**

**Re-exploring the scale of unexpected reality in childcare training**  
**Yuko Matsuda (1), Saeko Shitara (2), Shoko Hamada (3)** 1. *Hirosaki University, Japan*; 2. *Sakushin Gakuin University Womens College, Japan*; 3. *Hiroshima University, Japan*

This study aimed to review the scale of unexpected reality in childcare training (Matsuda et al., 2015). A total of 571 students taking a childcare course completed the unexpected reality questionnaire, the childcare training stress scale (Hayashi, 2012), and the Japanese version of the General Health Questionnaire (GHQ) (Nakagawa & Daibo, 2013). Exploratory factor analysis extracted four factors, i.e., "actual feelings for childcare as a study field," "difficulties faced during involvement with children," "negative aspects of the childcare worker," and "severity of work." The subscales' reliability coefficients ranged from 0.75 to 0.86. Correlation analysis revealed that the difficulties faced, negative aspects, and severity of work were positively related with childcare training stress and negatively related with GHQ. However, the actual feelings were less related with childcare training stress and positively related with GHQ. Results suggested that the scale was satisfactorily reliable and valid.

**P0972**

**Depressed mood is related to interpretations and to prefrontal activity of young women when reading emotions from infants' facial expressions**

**Masako Matsuzawa** *Showa Women's University, Japan*

The relationships between interpretations about emotions and neural activity in the prefrontal cortex of young women, when they read emotions of infants, as well as their depressed mood were investigated. Healthy female participants ( $N=34$ , age range 20–23 years) were shown photographs of infants' nuanced facial expressions. They were requested to respond if the infant were expressing positive or negative emotions. Oxygenated hemoglobin concentrations in the prefrontal cortex were monitored during the emotion reading task, by using near-infrared spectroscopy (NIRS). After the task, participants were asked to respond to the Self-Rating Depression Scale. Correlational analysis indicated that participants with depressed moods tended to read negative emotions from infants' facial expressions. Moreover, their prefrontal activity when reading emotions tended to be weaker than that of non-depressed participants. These results suggest that negative interpretations of infants' emotions made by depressed women might be related to the lack of prefrontal activity.

**P0973**

**The relationship between social attitudes and styles of university life**

**Naoko Mineo** *Chuo university, graduate school of letters, doctoral program, Japan*

The present study examines the relationship between social attitudes and styles of university life. Participants ( $n=189$ , mean age = 19.52,  $SD=1.75$ ) answered the questionnaire constructed from scales of social attitude ("tradition-oriented attitude", "progressive attitude", "rational attitude", "hedonistic attitude", and "apathetic attitude") and time spent on various activities in university life ("proactive learning", "interaction with others", and "playing games, and reading entertainment books"). The results were as follows: (a) Cluster analysis of standardized scores on use of time identified three types: group 1 (all low), group 2 (all high), group 3 (highest "interaction with others"). (b) Three groups were compared by using ANOVAs on scores of social attitude. On "apathetic attitude" scores, group 3 were lower than the group 1 and 2 ( $F(2, 164)=6.07$ ,  $p < .01$ , partial  $\eta^2=.07$ ). The results indicated that students' interest in society was related to human relationships.

**P0974**

**Quantitative analysis of TAT and CAT stories from a developmental viewpoint**

**Kanako Miyagi** *Nagoya university, Japan*

Focusing on temporality, this study investigated the process of producing TAT and CAT stories. Its goal was to demonstrate two hypotheses. One was that it would be easier for the participants to create CAT stories as realistic pictures than TAT stories as abstract pictures. The other was that the amount of a story's information decreased in the order: present, past, future. Thirty-five children aged 6 to 7 (16 boys, 19 girls) participated in the study and created stories from CAT and TAT. The result was that they did not always create more CAT stories than TAT stories. This probably means that TAT is not that much more difficult than CAT. Moreover, more future stories were created than past stories. This suggests that, since the children had to create past stories without contradicting the pictures, it was more difficult for them to create past stories than present and future stories.

**P0975**

**Comprehension of Integrated Speech and Iconic Gesture in Young Children: The Effect of Directive Words**

**Hidenori Miyake, Shinichiro Sugimura** *Hiroshima University, Japan*

We examined how the directive words affect children's understanding of iconic gesture and speech. Three- to six-year-old children

assigned to two groups with or without directive words in instruction sentence of the task were presented with an iconic gesture, a spoken sentence and a combination of the two on a tablet screen, and they were instructed to select a photograph that best matched the message: iconic gesture, spoken sentence, combination of the two. As a result, in iconic gesture-speech combination task, children with directive words chose a photograph that best matched the message than children without directive words. An analysis of error choice in iconic gesture-speech combination task reveals that children with directive words choose gesture information than children without directive words. In conclusion, directive words have effect of shifting attention to iconic gesture.

**P0976**

**Mechanism of total identity formation: Why did Yukio Mishima want to be totally somebody other than himself?**

**Akiko Miyoshi** *Teikyo University Junior College, Japan*

Erikson (1968) focused on the terms "wholeness" and "totality," meaning entirety, and pointed out that totality is a mechanism for choosing a negative identity. This study examined the life of the Japanese writer, Yukio Mishima, as a case example of total identity formation, in order to identify the psychodynamic mechanisms of a person who wants to be totally somebody other than himself. Mishima tried to totally change himself because of self-hatred, and tried to become the opposite of him, while the choice between becoming literary genius and death. Finally Mishima, chose death as a samurai (hero) rather than life as a writer. The results of this biographical analysis suggest that Mishima was totally brought up since his birth, as desired by his grandmother, mother, and father, his wholeness was not generated in him, and there was no way that he could continue to act as totally somebody other than himself.

**P0977**

**Perspectives of "psychological independence" and "intimacy" in emerging adulthood: A comparison of mother/father-daughter/son relationships**

**Miki Mizumoto** *National Center for Child Health and Development, Japan*

This study focuses on the relationship between emerging adults and their parents. University students (693 male, 691 female) participated in a questionnaire comparing mother/father-daughter/son relationships, which specifically examined the coefficient of correlations between subscales of "psychological independence" (Mizumoto & Yamane, 2011; Mizumoto, 2015) (e.g., "reliable

relationship with father/mother" and "psycho-social individuation from father/mother") and "intimacy" (Mizumoto, 2015/2016) (e.g., "solicitude for father/mother," "absolute sense of security from father/mother," and "being tied to father/mother's values"). No significant differences between father-son and father-daughter relationships were observed, but there were some differences between mother-son and mother-daughter relationships. A reliable relationship correlated more with sense of security in mother-daughter, and more with solicitude in mother-son relationships. Some significant differences were observed between mother-child and father-child relationships. Children's reliable relationships with fathers correlated more with solicitude and father's values than it did with mothers.

#### P0978

##### **Interpersonal Self-regulation in Japanese Children**

*Rie Mizuno Chukyo University, Japan*

This study aims to shed light on the interpersonal self-regulatory behavior seen in Japanese children and their mothers. The first goal is to examine whether the child's self-regulatory behavior in interpersonal situations differs depending on the person the child is interacting with ((1) when with friends, (2) when with sibling(s), and (3) when with the mother). The second goal is to examine the mother's expectation for her child's self-regulatory behavior. The third goal is to examine the mother's self-regulatory behavior itself. The survey was conducted in November 2015. Survey participants were 303 mothers of first-born children (five year-olds) with sibling(s). This study shows that children in early childhood seek to take the initiative and assert their ideas in their play, but one is already able to see a difference in behavior depending on whether they are "inside (with family)" or "outside (with friends)".

#### P0979

##### **Influence of attention on cognitive abilities and learning of school-aged children**

*Yoko Mizuto, Ikuyo Ishizaka, Mari Higashikawa, Wakana Hata Kitasato University, Japan*

This study investigated the relationship among attentional function (sustained, selective, and switching/controlling attention), cognitive abilities, and learning to reveal the influence of attention on them of school-aged children. The sample included 60 students enrolled in the second, fourth, and sixth grades of a public primary school. The Test of Everyday Attention for Children was administered, along with cognitive ability tests and learning-achievement test. By analyzing the correlation between the scores for each test, it was revealed that sustained attention and attentional switching/controlling scores were

significantly correlated with many cognitive ability test scores as well as learning achievement test scores. Results suggest that sustained attention and attentional switching/controlling may influence the execution of cognitive tasks and learning achievement either directly or indirectly via intellectual function. We propose the importance of assessment of attention for learning.

#### P0980

##### **The Effects and Influence Factors of Active Mediation of Media Using in Children and Adolescents**

*Shuliang Mo, Yafei Qi Central China Normal University, School of Psychology, China*

With the development of digital media technology, it's an urgent problem about how to increase the benefits and reduce the negative effects of electronic media. Active mediation refers to parents' active guiding and explaining of media using of children and adolescents. In order to improve cognitive and social development of children and adolescents, parents should direct their children to understand the medium and its content, to cultivate their critical thinking and to decrease the risk of their being cyberbullying victim. Children and adolescents can learn more from the media use with the aid of parents who know their children's personality, interests, and needs. Researchers have identified family and individual factors as two important types of antecedents which affect active mediation behaviors. Future researches should further explore the mechanisms of active mediation, and establish effective assessment criteria of active mediation.

#### P0981

##### **Teachers' Support to the Development of Emotion Regulation: A Case Study of 3-year-old Children at Kindergarten**

*Miwo Morino Nagasaki University, Japan*

The aim of this study is to investigate how teachers at kindergarten socialize children's emotion. Two 3-year-old children who had been labeled as difficult to regulate emotion were observed. Observations were conducted on interactions between the child and the teacher during the daily morning assembly at kindergarten. The analysis was based on the detailed record of interaction between the child and the teacher. The results indicate the teacher's role in the development of emotion regulation at kindergarten.

#### P0982

##### **Mothers' representations of their infants, sensitivity and infants' attachment security: A longitudinal study in Japan**

*Yuko Motoshima Yamagata University, Japan*

The purpose of this study was to examine the relations among prenatal mothers' representations, sensitivity at 6 months and infants' attachment security at 18 months in a Japanese sample. The Working Model of the Child Interview (Zeanah & Benoit, 1995) was used to assess mothers' representations of their unborn infants during pregnancy. Maternal sensitivity during mother-infant interaction was observed at 6 months. Infants' attachment security was assessed at 18 months by using the Attachment Q-Sort. The result showed that mothers with balanced representations during pregnancy were likely to be more sensitive towards their infants at 6 months than mothers with disengaged or distorted representations, which in turn positively related to infants' higher attachment security. This indicated the mediating role of maternal sensitivity between mothers' representations of their infants during pregnancy and infants' attachment security at 18 months.

#### P0983

##### **"Kyara" (a Japanese Term for Simplified Personality) and the Multiple Self in Japanese Adolescents**

*Fumika Murai, Hiromichi Kato, Makiko Naka Hokkaido university, Japan*

"Kyara" is a Japanese word meaning a simplified personality, or a role one plays in communication (e.g., Tsukkomi-Kyara is the role "being critical", and Yuru-Kyara is the role "being relaxed"). According to Chishima & Murakami (2015), playing/using "Kyara" facilitates communication, and from the sociological viewpoint, Asano (2013) suggests one's playing plural "Kyaras" is related to multi-dimensional self, though few studies examined the relationship. Thus we studied a) how "Kyara" is played/used among adolescents, and b) the relationship between playing/using "Kyara" and self-concept. A total of 228 high school students answered to a questionnaire, which results showed a) 74% of respondents play three "Kyaras" on average with those who are close to them, and b) there was a significant relationship between the number of "Kyaras" they play and the multiple-self score (Iwata, 2005) for females but not for males. Effects of playing "Kyara" on the development of self were discussed.

#### P0984

##### **Influence of Numeration System on Mathematical Literacy ~ Case 1 Numeration System in French and Japanese, and Mathematical Education for Children Reaching School Age~**

*Kazu Murata (1), Yoshiko Fujiwara (2) 1. Seitoku University, Japan; 2. Graduate School of Hollywood University, Japan*

This present study is a part of our series research on influence of the language in use on mathematical understanding. When one reads numbers in French,  $94 = 4 \times 20 + 4 + 10$ ,  $12 = 2 + 10$  and  $17 = 10 + 7$ , on the other hand in Japanese  $90 + 4$ ,  $10 + 2$  and  $10 + 7$  respectively. In contrast to the complexity of French numeration system, Japanese one is far simpler and as a consequence Japanese children learn only numbers from 1 to 9 and names of digits. We study the difference in mathematical education in both countries. In France there are such questions in textbooks as asking children how to numerate 94, whereas no such questions can be found in those in Japan, since they are too obvious.

#### P0985

##### Attentional bias for threat in the first year of life

**Atsuko Nakagawa, Masune Sukigara**  
*Nagoya City University, Japan*

The purpose of this study was to investigate the difficulty involved in disengaging from threat in infants at 6 and 12 months of age. The relationship between this factor and temperamental disposition was also examined using IBQ-R. An experiment presented the Posner cueing paradigm, in which infants made saccades toward animated abstract figures at a peripheral location. The target was preceded by a cue, which directed the infants' attention either to the target location (valid cue) or to the wrong location (invalid cue). The peripheral cue was either an angry, happy, or neutral facial expression. Latency in making a saccade toward a peripheral target was measured. Based on a preliminary analysis, 6-month-old infants showed no difference in responses to angry and non-angry faces, whereas negative affect (valid negative cue) had a tendency to bring about more orienting responses in 12-month-old infants.

#### P0986

##### Loneliness, Friendship Quality and Motivation in Childhood and Adolescence

**Takahiro Nakajima (1), Nagata Masako (2)** 1. Nagoya University, Japan; 2. Nagoya University Psychological Support & Research Center for Human Development, Japan

This study investigated the developmental changes of loneliness, friendship quality and motivation for developing friendship in later childhood and adolescence in Japan. 739 male students and 705 female students from elementary school ( $n = 461$ ), junior high school ( $n = 556$ ), and high school ( $n = 417$ ) completed questionnaires designed to ascertain the feeling of loneliness (Maeda, 1995), the quality of students' friendship (Bukowski, et. al., 1994), and motivation for developing friendship (Richard & Schneider, 2005). An analysis of variance

indicated that female students presented higher positive friendship than male students; however, regardless of their gender, high school students felt more lonely than elementary and junior high school students. Multi-regression analysis revealed that positive friendship would be an influential factor in the feeling of loneliness of female elementary and junior high school students compared with other students. These findings suggested that the determinants affecting loneliness varied according to students' gender and to the stage of school.

#### P0987

##### The influence of the reversibility of event on young children's counterfactual thinking

**Keito Nakamichi**  
*Shizuoka University, Japan*

This study examined the influence of the reversibility of event on preschool children's counterfactual thinking. Methods. Thirty-eight Japanese children aged 3- to 6-years ( $M = 4.9$  years) participated. Each participant was tested using two high reversibility scenarios (e.g. A glass falls from a table, and breaks.) and two low reversibility scenarios (e.g. A clay changes shape from ball to cube.). Scenarios were described with pictures, and then participants were asked control questions (checking the understanding of story) and the counterfactual test question (e.g. What if the glass hadn't fallen, would the glass have broken?). Results. Older age group (5-6 years) performed better than the younger age group (3-4 years), and scores for the high reversibility scenarios were higher than scores for the low reversibility scenarios. Discussion. These results provides further support for the assertion that the development of counterfactual thinking is influenced by the reversibility of event.

#### P0988

##### The Relation between Motivation for Child-Rearing and Social Support in Japanese Mothers

**Naoko Nakashima (1), Haruna Tachibana (2), Mayuko Matsumoto (3), Sachiko Kobayashi (4), Mirei Matsuoka (6), Hideharu Sugimoto (5), Toshihiko Hayamizu (5)** 1. Sugiyama Jogakuen University, Japan; 2. Nagoya University, Japan; 3. Kobe Shinwa Women's University, Japan; 4. Ogaki Woman's College, Japan; 5. Chubu University, Japan; 6. Aichi Gakuin University, Japan

The purpose of the present study was to investigate the relation between motivation for child-rearing and social support in Japanese mothers with children under five years old. Mothers ( $N = 297$ ) completed a self-report questionnaire. A child-rearing motivation measure consists of three subscales: "intrinsic motivation for enjoying child-rearing," "extrinsic motivation for child-rearing by

social obligation," and "expect something in return," and a social support measure designed with five sources, family support, related support, friend support, public support, and office colleague support. The results of this study showed that support from family member or friend is related to level of motivation for child-rearing, especially important for intrinsic motivation of enjoying child-rearing. Mothers living apart from her parents were related to higher scores on expect something in return, whereas mothers living together with her parents were not correlated with the scores on extrinsic motivation for child-rearing.

#### P0989

##### Exploring parental behavioral factors which influence to social development of their children for construction of easy developmental test for infants

**Rumiko Nakayama (1), Kumiko Namba (2), Masatoshi Kawai (2)** 1. Nara University of Education, Japan; 2. Mukogawa Women's University, Japan

For the purpose of the construction of simple and easy developmental test, we made a questionnaire about developmental condition of infants and nurture manner of their parents, and carried it out in governmental medical examination. We mailed the questionnaire for all 10 months, 1 year old and a half, and 3 years children who lived in certain city in Japan before examination, received 5,253 answers by hands. The analyses gave the standard values about sociality of children and related parents-factor. However, from correlation analyses, we found very weak relationships between children's sociality and parents' factor variables as a whole. Therefore, we identified delays of the development and executed the logistic regression analysis to find predictor variable for them. As a result, it was revealed that some behavioral variables, such as patting a child and hitting a child, predicted delays of the development.

#### P0990

##### The effect of self-regulation behaviors at 3.5, 5, and 6 years old on temperaments at their school age

**Kumiko Namba (1), Masatoshi Kawai (1), Megumi Sasaki (1), Shigeki Tanaka (2), Hatsumi Yamamoto (2)** 1. Mukogawa Women's University, Japan; 2. Clinical research institute, Mie-chuo medical center, National hospital organization, Japan

We examined the relationship between the results of self-regulation situation at 3.5, 5, and 6 years old and temperaments at the following school age. When a kid who cooperated on the self-regulation experiments became a first grader, his/her mother asked their children's temperament using by CBQ (Rothbart,

2001). The numbers of subjects were 87 cases. Surgency, Negative Affectivity, and Effortful Control were calculated according to CBQ instruction. We conducted multiple regression analysis (using force input method) using by these 3 factors as regressands and the results (success/fail) of self-regulation experiments as regressors. As a result, there was slight significance relationship between EC and self-regulation at around 3.5 years old (adjusted  $R^2 = .04$ ,  $\beta = .27$ ). It is shown 3.5-year-old kids' self-regulation behavior slightly relates to the temperament relevant to self-regulation, that is to say, early development of self-regulation could affect a formation of individual personality traits in later life. (Supported by JSPS KAKENHI no.15H03453)

#### P0991

### Mental Health and Related Factors in Left-behind Children in Chinese Rural Area

**Xiaoli Ni, Yuping Wang, Yuyan Qian, Weiling Wang** School of Humanities & Social Sciences, Xi'an Jiaotong University, China

Childhood is the crucial period in individuals' psychological development, during which parents play an important role. However, the number of left-behind children is increasing rapidly in China during the past decade. The objectives of this study are to examine the mental health and its related factors in left-behind children in Chinese rural area. A total of 1170 left-behind children aged from 7 to 16 years completed demographic questionnaire and Mental Health Test (MHT). 128 children (10.94%) were in poor psychological state. Boys had higher scores on loneliness and impulsion, but a lower score on fear than girls significantly. Children from primary school had higher scores on self-blame and fear, but lower scores on sensitivity, somatic symptoms and impulsion than those from middle school. The mental health status of left-behind children should not be ignored, and more endeavors in improving their mental health should be implemented as soon as possible.

#### P0992

### The Impact of Self-presentation in Online Social Network Sites on Depression: The Effect of Optimism and Social Support

**Gengfeng Niu, Zongkui Zhou, Xiaojun Sun** Central China Normal University, China

In order to investigate the impact of self-presentation in SNS (Social Network Site) on depression as well as the mediation of optimism and social support, a sample of 987 adolescents completed Questionnaire of Self-presentation in SNS, Adolescent Optimism Questionnaire, Perceived Social Support Scale and CES-D. Results revealed that: (1)

Both positive and honest self-presentation in SNS were positively correlated with optimism and social support, while negatively correlated depression; (2) Both honest and positive self-presentation could predict depression directly; and honest self-presentation also had an indirect effect on depression through the mediation of social support, while positive self-presentation could affect depression through the mediation of optimism as well as the serial mediation of optimism and social support.

#### P0993

### Study of young adults' parental attachment, and psychological distance to parents and friends

**Tomomi Niwa** Shitennoji University, Japan

This study focused on the relationships between young adults' parental attachment and psychological distances to their father, mother, and friends. Participants (79 male, 56 female, and 1 unknown gender) completed questionnaires comprising parental attachment items (avoidance of parents, anxiety regarding parents) and drawings of a relationship map to measure their psychological distances to father, mother, and friends. The relationship map was constructed using separate circles representing father, mother, and the most intimate friend, with the participant at the center of the circles. Results show that parental attachment was positively related to greater psychological distance to mother and friend. Moreover, gender differences were found in the relationships between parental attachment and the three psychological distances. Among males, there was a positive relationship between parental attachment and greater psychological distance to parents. Among females, there were positive relationships between parental attachment and greater psychological distances to mother and friend.

#### P0994

### How Japanese Young Children Understand their friends ? : In the Case of Casual Friendships

**Junko Noda** Tokyo Keizai University, Japan

This study examined how Japanese young children portray their friends in their casual friendships. Thirty-two Japanese young children were interviewed individually at 4 and 5 years old. The first responses to following two questions were evaluated in this study; A) What kind of person is XX (the name of a casual friend) ? B) What do you like or not like about the person? If so, why? Although many children acknowledged awareness of playmate relationship with others, answered "I don't know" to both of the above mentioned questions and/or commented on physical aspects, 4 year olds tend to refer to the existence of playmate relationships, whereas 5 year olds tend to

refer to personality and emotional traits. As a result, 4 year olds appeared to show less interest to their casual friends, on the other hand, 5 year olds begin to understand dispositions of their casual friends.

#### P0995

### The young women career development process who left workplace within three years after entering the company

**Hazuki Oi** The university of Tokyo, Japan

Recently in Japan, the number of young women is increasing who change their jobs. The purpose of this study was to examine the process of the career development of the women who changed her jobs after resignation at an early stage. I interviewed 12 women aged 20's who left workplace within three years after entering the company, and changed their jobs. I asked them about details of the reason why they left company and the stories of their future career plans. After using the KJ methods, the Trajectory Equifinality Model was applied to the analysis. The results indicated that (1) The career pattern of women was divided into four types. They were whether they want to do more challenging job or not and whether they want to expand a life career or not. (2) Their choice of career occupation was affected mainly by their work view and view of marriage.

#### P0996

### How preschoolers in Japan enhance their peer relationships during preparatory works for an athletic meet: A case study of 5-year-old preschoolers

**Tomohiro Oikawa, Manabu Kawata** Hokkaido University, Japan

The development of peer relationships plays a vital role in children's social development. Many researchers placed their focuses on the transition and reformation of children's peer relationships. In this study, the authors examined how preschoolers in Japan enhance their peer relationships during preparatory works for an athletic meet. In this study, 81 five-year-old preschoolers in a Japanese kindergarten were observed from 1st June to 13th July, and the athletic meet was held on 27th June. First, we focused on a child who couldn't interact well with other peers. The interactions between this child and other peers during free play were recorded. Second, we observed their preparatory works for the athletic meet. The results were as follows: (1) The child enhanced relationships with other peers during preparatory works. (2) The quality of peer relationships improved in accordance with the progression of their preparatory works for the athletic meet.

#### P0997

### Is the "Emerging Adulthood" available in Japan?



**Tsutomu Okada** *Kanazawa University, Japan*

In the Western cultures, it is argued that the age between 18 to 25 should be a distinct developmental stage of "emerging adulthood". Studies in the USA indicated many youth at this age view themselves as adults and not adults. In addition, they are strongly motivated to explore their own identities in many areas. This study investigated whether the same phenomenon can be found in Japanese youth. One hundred and twenty-two college students responded to the questionnaire asking whether they considered themselves to be adults, and the Dimensions of Identity Development Scale (DIDS) was employed to explore their identities. Result indicates that over 50% of the students did not consider themselves to be adults. This does not correspond to previous studies in the USA. However, on some subscales of the DIDS, students who did not view themselves as adults had lower scores than other students. .

**P0998**

**The effect of the 'Importance of relationships' on life**

**Yuji Okamoto (1,2), Hiroko Shimoda (3,5), Keitaro Shimoda (4), Takashi Matsuyama (3), Ryosuke Takahashi (3), Yasushi Matsumura (2)** 1. *University of Air, Japan*; 2. *Osaka University, Japan*; 3. *Kyoto University, Japan*; 4. *SK Institute, Japan*; 5. *Osaka Shoin Women's University, Japan*

We conducted research about the relationships between human relationships and life using the questionnaire: Importance of relationships (IR) which is consisted of two factors; factor1 named importance of relatives and family, and factor2 named importance of a sense of belonging. Multiple regression analysis were executed, for examining the attitude for living their own life of Japanese. The result showed that 1) factor1 was explained significantly with self-esteem, and slightly significant with negative self-monitoring, and 2) factor2 was explained significantly with vocational oriented intention, and slightly significant with negative self-monitoring. It means the importance of relatives and family is strongly related with ego to satisfy and accept themselves according to identity model, and the importance of a sense of belonging is relating with a strong will toward vocational oriented intention and self-defense. It concluded that two factors had different function for identity formation.

**P0999**

**A Cross-cultural Study of Career Consciousness: Comparisons between Japanese and Korean University Students**

**Eiko Osaka, Nagasaki Minoru Surugadai University, Japan**

Japanese University students are in a difficult circumstance not only for their career decisions, but also staying their jobs, because of the diversity of the society and severe employment market conditions. Since the university entrance rate which is over 50 percent, university students are no longer considered as elites, rather they are common-place young people. They are in adolescence, their developmental achievement is choosing for their careers and establishing their own financial independence; however, they find it is rather difficult to achieve these goals. Since they are in such challenging circumstances, career education becomes an important responsibility for the universities to provide. It is also clear that career education will have a long-term influence on university students (Nagasaki & Osaka, 2013). This study revealed career consciousness between Korean and Japanese university students, who are under similar circumstances, as assessed by the Career Attitude Vision Test (Shimomura, et.al, 2009).

**P1000**

**Is Mother's Question in Speech a Predictor of Infants' Perception of Intonation?**

**Hiroshi Ota, Yuki Shimizu** *Saitama university, Japan*

Intonation plays a role as a clue to convey the speaker's intention. Thus, the ability to distinguish variations of intonation is essential for infants' language development. This study examined longitudinally the relationship between mothers' question use in speech to their children and infants' discrimination ability for intonation from 6 to 12 months. We assessed how many questions mothers used while watching a video of others' social interactions when infants were aged at 6 months and examined infants' perception of question and declarative intonation when they were 6, 9 and 12 months of age using a visual habituation paradigm. Analyses revealed that maternal question use was related to children's later development of intonation discrimination: infants whose mothers used many questions showed higher ability to distinguish variations of intonation at 9 and 12 months. These results suggest mothers' question use in their speech to their children predicts infants' perception of intonation.

**P1001**

**Where do young children focus on during pretend play?**

**Honami Otsuka** *Kobe University, Japan*

Young children enjoy pretend play with adults. In pretend play, adults often use the stuffed animals in order to promote pretend action of them. In this study, 57 1- to 3-year-olds shared pretend play with an adult. In the experiment, the adult manipulated a teddy bear. The adult required to give a toy to her (reality condition) or the teddy bear (pretend condition). Children

tended to give a toy to the teddy bear more often than the adult in both condition. However, 1- and 2-year-olds looked at the adult when she required in reality condition. 3-year-olds looked at her in both condition. On the other hand, children looked at the teddy bear only in pretend play. These results suggest that young children pay attention to the adult during pretend play and understand whether the adult show pretend action.

**P1002**

**Feeding in small group care: A focus on caregiver behaviors in a Japanese infant home**

**Miyuki Otsuka (1), Kikuyo Aoki (1), Kyoko Shimada (2), Ryoko Yokoyama (2), Saki Kurogi (1)** 1. *Ochanomizu University, Japan*; 2. *Shirayuri Baby Home, Shinseikai, Japan*

Japanese infant homes value each child's development and attachment, and are working to improve care quality for the infants' future development. Since 2011, infant homes have been transitioning from "large group care" to "small group care," which will potentially result in changes to life structure and caregiver behaviors. This study evaluated the differences in caregiver behaviors during one aspect of attachment in daily life, feeding, for three infant groups: 1) younger infants (8-17 months) in a large group (6 sessions), 2) older infants (18- months) in a large group (6 sessions), and 3) infants in a small group (mixed age group: 12 sessions). Results showed fewer emotional and matching behaviors with older infants in small group care compared to those in large group care ( $p < .01$ ). Potentially, in small group care, caregivers will focus more on younger infants; therefore, balanced attention from caregivers is needed.

**P1003**

**The Research of Coding Characteristics of 7 to 11-Year-old Children's SNARC Effect of Numerical Cognition**

**Yun Pan, Yu Liu, Yu Huang, Xiaohong Han** *Guizhou Normal University, China*

Abstract: Gevers et al's experimental paradigm was used to investigate that the coding modes of 7 to 11-year-old children's SNARC effect of numerical cognition under the symbols of Chinese characters. The stimuli were Arabic numbers (1, 2, 8, 9) and Chinese characters ("Left", "Right"). Subjects' task was to decide whether the presented number was larger or smaller than 5, select Chinese characters of left and right. The results showed that 7 to 11-year-old children performed the SNARC effect of number-space interactions in the task of numerical comparison under the symbols of Chinese characters, and the coding modes of 7 to 11-year-old children's SNARC effect of numerical cognition were visuospatial and

verbal-spatial. The verbal-spatial coding was mainly. These results indicated that children from 7 year old could connect the small number with verbal information "Left" and the large number with verbal information "Right" when they represented numbers.

#### P1004

##### **Developmental changes of perceived cuteness in various species: from an altricial-precocial perspective**

**Atsuko Saito (1), Koki Ikeda (2,3), Hiromi Kobayashi (4), Kazuhide Hashiya (4)** 1. *Musashino University, Japan*; 2. *Chukyo University, Japan*; 3. *JSPS, Japan*; 4. *Kyushu University, Japan*

Lorenz (1943) proposed the idea of coevolution between morphology of infants (baby schema) and caregiving responses by adults. Kruger (2015) showed that non-mammalian neonates requiring care elicit more perceived cuteness and caregiving reaction of humans than neonates requiring no care. However, youngest human infants including newborns, who should need greatest care, are judged less cute than 6 or 11-month old infants (Hildebrandt & Fitzgerald 1979; Sanefuji et al., 2007). Since there is no data comparing altricial and precocial species, we investigated developmental changes in elicitation of perceived cuteness and caregiving reaction in various species from an altricial-precocial perspective. For altricial non-human species (Bengalese finch, hamster, cat), undergraduate students rated older infants cuter than neonates. We could not replicate the previous human studies. For precocial species (domestic fowl, guinea pig, sea lion), some different developmental patterns of perceived cuteness were observed. For all species, perceived cuteness and caregiving reaction were correlated.

#### P1005

##### **Children's conceptualization of floating and sinking objects and their use of density concept**

**Takako Sakawaki** *Waseda University, Japan*

This study analyzed the development of children's conceptualization of floating and sinking objects and their use of density concept after facing disconfirming evidence. Seventy-one elementary school students participated (24 first-second graders, 24 fourth graders, and 23 fifth-sixth graders). The experimenter presented four balls differing in weight, size, and material. Participants were asked to predict whether each ball would float or sink and justify their predictions. On observing the results, students with misconceptions faced disconfirming evidence. After observing the result, the older students were more likely to mention the weight of the material the object was made of or other factors, which could

be considered the early concept of density, as relevant factors. However, further interviews indicated that most of them did not clearly understand the material's weight as being relative to size, although they might possess an intuitive concept regarding density.

#### P1006

##### **The development of self-concept in elementary school students: A longitudinal study**

**Michiko Sakuma** *Shiraume Gakuen University, Japan*

This study longitudinally examined the development of the self-concept in the elementary school years, as revealed by children's self-descriptions and self-evaluations. Eighty children were interviewed once a year about their self-definition and self-evaluation from the second grade to sixth grade. Responses were classified according to the modified Damon & Hart (1988) category scheme. The main results were as follows. First, many children in all age groups mentioned harmonious relationships. Second, descriptions about conscientiousness increased in frequency and the repertoire of words about conscientiousness became more varied at the fourth grade. Third, most second-grade children described their likable aspects, but about 25% of sixth-grade children said nothing about these aspects.

#### P1007

##### **The situation where preschool children lie: In terms of questioner and peeking status**

**Wakako Sanefuji, Ayaka Nagatoshi** *Kyushu University, Japan*

Recent studies suggested that young children lie strategically to conceal a transgression based on lie-recipient's knowledge; however, the situation of preschoolers' lying has not been systematically examined yet. This study investigated 4- and 6-year-old's lying in the following 2 kinds of conditions: (1) the questioner: the person who had told them not to peek in the box or the person who had not told so, and (2) peeking status: when children spontaneously peek or they were shown in the box without their intention. As results, when peeking in the box by themselves, 6-year-olds, not 4-year-olds, lied solely to the questioner who had told not to peek in the box. When shown in the box, most children irrespective of age did not lie. The results demonstrated that 6-year-olds can share the rule with the experimenter, judge the necessity to lie according to the situations, and take strategic action.

#### P1008

##### **Exploring the Long-term Impact of Infertility Treatments and Parenting: The Narratives of Middle-Aged Women who Became a Parent through Infertility Experiences**

**Kasumi Sato** *The University of Tokyo, Japan*

While a substantial number of women receive infertility treatment at some point in their lives, relatively little is known about the long-term impact of such experience. This study explores the meaning that women ascribe to the experience of infertility treatments as well as its effect on their child rearing. In-depth interviews were completed with three Japanese women aged 50–59, who became a parent through infertility treatment over 20 years ago. Narratives concerning the experience of infertility treatment, pregnancy, and parenting were obtained. Four meanings of infertility experiences identified by using a narrative analysis were (1.) Changing Values, (2.) Preparing for Parenthood, (3.) Accepting Oneself, and (4.) Learning Life's Lessons. The evaluations of their parenting were found to shape the meaning of their infertility treatment, and their child rearing was affected by the infertility experiences. The results demonstrate that one's ascribed meaning of infertility treatments are related to one's parenting.

#### P1009

##### **Loneliness and Friendship in First-Year University Students**

**Yuhkoh Satoh** *University of Tsukuba, Japan*

This study examined loneliness and friendship among first-year university students. First-year undergraduates completed a number of questionnaires between April and January in 2011 (n = 195) and in 2012 (n = 186). The questionnaires assessed loneliness, self-esteem, satisfaction with new friends, as well as a two-dimensional friendship scale with one axis assessing intimacy with friends and the other assessing the number of friends. Results indicated that loneliness in May was related to self-esteem in January, but satisfaction with new friends and two dimensional friendship scores in June was not related to self-esteem in January.

#### P1010

##### **Factors related to the early childhood childcare environment: A 5-year cohort study**

**Yuko Sawada (1), Emiko Tanaka (3), Taeko Watanabe (2), Miho Shimozato (4), Tokie Anme (3)** 1. *Morinomiya University of Medical Sciences, Faculty of Health sciences, Japan*; 2. *Japan University of Health Sciences, Japan*; 3. *University of Tsukuba, Japan*; 4. *Tobishima Village, Japan*

**OBJECTIVE** The purpose of this study was to describe the factors related to the early childhood childcare environment through a 5-year longitudinal study. **METHOD** Subject included 53 children born in 2009. The survey period lasted from the perinatal phase until the following five years. Perinatal data

were obtained from the medical examination records. Five years later, examine childcare environment (Index of Child Care Environment: ICCE; Anme, 2013). Data were analyzed using the Pearson correlation coefficient (SPSS ver. 22). RESULTS There was a significant correlation between perinatal risk and poor ICCE scores. A significant association was confirmed for the items duration of gestation and interaction with others. Additionally, an association was observed for birth weight and frequency of going out. DISCUSSION With reference to childcare in the perinatal stage, caregiver assistance needs to be based on the relationship. Future follow-up studies need to verify these effects to provide necessary support to caregivers.

#### P1011

##### **The Effect of Different Group-directed Praise on Pre-school Children's task engagement: The Mediating Role of Group Image Concern**

**Jingying Sha (1), Xangkui Zhang (1), Yang Sun (2)** 1. Northeast Normal University, China; 2. Changchun Normal University, China

The ability to stimulate changes in attitudes and behavior is an important part of group's functioning. One of the tools for eliciting such changes is providing feedback on group's performance. This study explored the influence of different attribution types and sources of group-directed praise on pre-school children's task engagement. 213 children aged from 5 to 7 participated. The results showed that: (1) Internal attribution group praise has more positive effect on their task persistence, enjoyment and self-evaluation. (2) The source of group-directed praise does not affect pre-schoolers' task engagement. (3) Group image concern mediates the relationship between group praise attribution type and preschoolers' task engagement. These results suggest that internal attribution group praise has a positive effect on task engagement and this effect is mediated by group image concern.

#### P1012

##### **The Influence of Temperament and Teacher Expectations and Peer Acceptance on Self Control of Children**

**Yue Shen, Lizhu Yang, Ge Liu Liaoning Normal University, China**

A total number of 684 3–5 years old children were tested by questionnaires (self control, temperament, teacher expectations) and peer nomination method (for peer acceptance) to examine the impact of the temperament and the social environment factors in kindergarten on children's self control. We analyzed the data by multiple hierarchical regression analysis

and SEM technique for establishing a moderated mediator model. The results showed that, The temperament, peer acceptance and teacher expectations influenced children's self control interactively, and the peer acceptance was the mediator from temperamental reaction, temperamental attention and teacher expectations of daily behavior to self control, and was also moderated by temperamental emotionality; When teachers gave children higher teachers' interpersonal interaction expectations, even if children had high level of temperamental social inhibition, they also can have higher ability of self control. Key Words: self control, temperament, peer acceptance, teacher expectations, moderated mediator variable

#### P1013

##### **Development of executive functions facilitates understanding of "theory of mind" in childhood**

**Yoshihiro Shima Kagoshima University, Japan**

The purpose of this study is to investigate effects of executive functions (EFs; conflict inhibition, cognitive flexibility, and working memory) on "theory of mind". Previous studies have suggested that working memory affect the result of false belief (FB) task, I modified the FB task to try to detect the effects of the other EFs. A modified FB task and three EF tasks were conducted on 68 children (Mean month age = 59.49, SD = 9.33). Hierarchical regression analyses were conducted. To detect the unique contribution of EFs, month age and two of three EF scores were put on first step and the other EF score was put on second step. Results revealed that children who have higher cognitive flexibility can give a correct answer to the modified FB task. It indicates that ability of switching attention from their own mental states to others' facilitates understanding of the "theory of mind".

#### P1014

##### **The role of the student-teacher relationship on development of social competence in preschool children**

**Hisayo Shimizu (1), Kenji Shimizu (2)** 1. Hiroshima University, Japan; 2. Shinshu University, Japan

This study examined the role of student-teacher relationship in the social competence in preschool children. We investigated whether being from student-teacher relationship predicted development of social competence. Measures of social competence (social skills and problem behaviors) and student-teacher relationship were administered to a sample of 107 preschoolers (56 boys and 51 girls, 4–6 years old). The researcher had three times of measure: spring (Time1), summer (Time2), winter (Time3). The longitudinal trend of children's social competence was analyzed

by using a latent curve model. The results suggested that (1) the intimacy with the teacher at Time1 affects the development of social skills and problem behaviors, (2) the social skills at Time1 affects the development of problem behaviors. The discussion focuses on the importance of understanding the effects of student-teacher relationship for the development of social competence in preschool children.

#### P1015

##### **Effects of unexpected reality in childcare training on preschool teacher efficacy**

**Saeko Shitara (1), Shoko Hamada (2), Yuko Matsuda (3)** 1. Sakushin Gakuin University Women's College, Japan; 2. Hiroshima University, Japan; 3. Hiroaki University, Japan

The purpose of this study was to examine the effects of unexpected reality in the first childcare training on preschool teacher efficacy. A total of 122 junior college students in the childcare course completed the unexpected reality in childcare training scale (Actual feelings for childcare as a study field (UR1), Difficulties faced during involvement with children (UR2), Negative aspects of the childcare worker (UR3), Severity of work (UR4); Matsuda et al., 2016) after the first childcare training, and they completed the preschool teacher efficacy scale before the second childcare training. Multiple regression analysis was employed to examine the relationship among the four subscales of unexpected reality in childcare training as independent variables and preschool teacher efficacy as a dependent variable. The results showed that preschool teacher efficacy was predicted positively by UR1 and negatively by UR2. Thus, we suggest using this evidence for effective childcare training to enhance students' efficacy.

#### P1016

##### **Stages of Initial Introduction of Drawing Actions at Pre-school Age**

**Yulia Solovieva, Luis Quintanar**

*Autonomous University of Puebla, Mexico*

According to psychological and neuropsychological research, preschool age is a critical period for acquisition of perceptive functions. Such acquisition forms an essential part of preparation for learning at school. Traditional programs of preschool education do not include special activities for development of such functions. Our study offers alternative program for initial introduction of drawing actions based on guided shared collaboration. The program is based on conception of formation of internal actions starting from external concrete and perceptive level. The first stage includes tasks of differentiation of features in objects with identification of shapes. The second stage includes symbolic external representation of gestures and actions. The third

stage permits to pass to representation of lines and shapes as essential means of drawing. The program was applied to groups of preschool Mexican children from 3 to 5 years old. The results show appearance of high ability of representation of perceptive images.

#### P1017

### The Relation Between Adolescent Socio-emotional Problems and Life History Strategy: From a Japanese Large Scale Survey

**Hiroshi Sugiyama** THE UNIVERSITY OF TOKYO, Japan

The life history theory explains how organisms, including human beings, coordinate strategies of resource allocation for survival. In harsh environments, organisms evolve to favor a fast life history strategy (early reproduction, small number of offspring, and low parental investment) to survive and produce offspring without fail. Previous studies suggested that human adolescent emotional and behavioral problems are in fact aspects of a fast life history strategy. This study examined the relationship between parental and adolescent life history strategies and typical adolescent problems such as depression and parent-adolescent conflict. The hypothesis was tested using data from a survey of 3,000 Japanese parent and child pair sample. The results support the hypothesis. Adolescent life history strategies are related to adolescent problems, but the effect of parental life history strategies had a limited effect on common adolescent issues.

#### P1018

### Do infants refer the social evaluation by others?

**Yuseung Suk (1), Wanying Zhao (2), Kiley Hamlin (2), Shoji Itakura (1)** 1. Kyoto University, Japan; 2. The University of British Columbia, Canada

The ability to understand the evaluations of people is essential when we live in the social world. In this study, we examined whether Japanese infants understand social evaluations by bystanders and use those information when they choose their own behavior. Thirty-two of 12-month-old Japanese infants watched the animated video in the habituation phase. Two protagonists chose one of the two objects, and the bystanders who were watching such situation showed the opposite facial expression which expressed positive evaluation (smile) or negative evaluation (frown) to social targets or object targets. After the habituation was completed, infants chose the protagonists which were used in the video. Results show that the Japanese infants chose positively evaluated targets for social targets [ $p=0.01$ ], while there was no preference for object targets. These findings would mean that Japanese infants tend to refer the social evaluation by bystanders, especially the social targets compared to the object targets.

#### P1019

### The Effects of Smartphone Addiction Tendency on Mental and Physical Health in Korean College Students: Moderating Effects of Self-Efficacy, Parent-child Relationships and Friendship

**Hyun-Ran Sung, Hyun-Ji Han** Catholic University of Daegu, Republic of Korea

Smartphone addiction tendency has negative influence on psychological and physical problem. The objective of this study is to examine the moderating effects of self-efficacy, parent-child relationships and friendship in the influence of smartphone addiction tendency on mental health (9 symptoms such as anxiety, depression, obsession, and so on) and physical health (neck disability) in Korean male and female collegers ( $n=450$ ). The results are as the followings. On mental health, smartphone addiction tendency has significant negative influence ( $\beta=0.26$ ) and self-efficacy and friendship have significant positive moderating effects ( $\beta=-0.10$ ,  $\beta=-0.13$ , respectively), but parent-child relationship has not. On physical health, smartphone addiction tendency has significant negative influence ( $\beta=0.63$ ) and self-efficacy, parent-child relationship and friendship have significant positive moderating effects ( $\beta=-0.28$ ,  $\beta=-0.08$ ,  $\beta=-0.08$ , respectively).

#### P1020

### Mothers' Motivation for Child-Rearing Investigated Using the free description method

**Haruna Tachibana (1), Naoko Nakashima (2), Mayuko Matsumoto (3), Sachiko Kobayashi (4), Mirei Matsuoka (5), Hideharu Sugimoto (6), Toshihiko Hayamizu (6)** 1. Nagoya University, Japan; 2. Sugiyama Jogakuen University, Japan; 3. Kobe Shinwa Women's University, Japan; 4. Ogaki Women's College, Japan; 5. Aichi Gakuin University, Japan; 6. Chubu University, Japan

Mothers' motivation, or their lack of motivation for child-rearing were investigated by using the free description method. Mothers with children under five years of age ( $N=297$ ) participated in a questionnaire survey. They described when they felt motivated, or not motivated for child-rearing. Their free descriptions were analyzed using the KJ method. Results indicated that mothers' responses about when they felt motivated could be classified into nine categories. "Smiling or sleeping faces of the child" (38.6%) was the most common response, followed by "developing child (29.2%)", with majority of participants describing child's positive behaviors and changes. Responses on when mothers' were not motivated could be classified into seven categories. "Uncontrollable" was the most common response (51.7%), such as

unstoppable crying. These results suggest that conscious child-rearing motivations of mothers are related to mother's emotions, which are based on actual behaviors of children.

#### P1021

### How does Video Game Experience in Early Childhood Affect Attitude and Fatigue Related to Portable 3D Game Machines?

**Masako A Takaoka, Hiroshi Ashida** University, Japan

Participants played a video game with glassless 3D or 2D viewing, and were asked to report fatigue using some fatigue scales and to fill out other questionnaires. They were also asked when they first played a video game. They first played games at the age of 6.5 years on average. We divided the participants into early and late groups at this averaged game starting age. After 3D play, the total fatigue score was significantly higher for the late group than for the early group, while it was lower after 2D play with no difference between the two groups. There are differences in attitudes toward video games between the two groups. Despite the limitation of memory-based survey and possible confounds of other factors, it is suggested that early game experiences, even in 2D, may affect adaptability to 3D viewing. (JSPS Grant-in-Aid for challenging Exploratory Research 24653187.)

#### P1022

### Effects of baby massage based on child's temperament characteristics on mother's self-efficacy

**Yuko Takei (1), Masaharu Terasaki (1), Masako Kadota (2), Yoichi Okutomi (3), Itsuko Takeuchi (1)** 1. Kawasaki University of Medical Welfare, Japan; 2. Kurashiki City College, Japan; 3. Risho University, Japan

Higher self-efficacy in regard to childcare behaviors is important for mothers to reduce their anxieties, and counsel is needed for each mother to deal with her child in light of the child's temperament. This survey aimed to clarify what each mother was aware of through a baby massage designed according to her one-year-old child's temperament. Each mother first answered the SETTQ to identify her child's temperament. After getting the feedback, each mother practically gave her child a massage based on the advice about a particular manner depending on her child's temperament. The mothers were then asked what they were aware of through the baby massage. They recognized the importance of dealing with their children in consideration of the children's temperaments. It is considered that baby massage in light of child's temperament be useful for mother's better understanding of her child and contributory to higher self-efficacy, and mother's positive childcare attitude.

**P1023****Accepting one's own limitations in the process of changing the self***Akiko Takemura* *Jin-ai University, Japan*

During transitional stages of life, individuals are required to regulate themselves in accordance with circumstances. Morling and Evered (2006) argued that adaptation involves both acceptance of the environment and adjustment of the self, a process they dubbed "fit-focused secondary control." Working from the perspective of life-span developmental psychology, Takemura and Naka (2013) explored how older people cope with aging, reporting that many accepted not only this situation but also the related limitations in their ability to control their environment before making adjustments in themselves. Takemura developed a scale to measure the acceptance of self-limitations and found that such acceptance was positively related to positive thinking, acceptance, and problem-focused coping. In this poster presentation, the importance of accepting one's own limitations in the process of fit-focused secondary control will be discussed.

**P1024****Do children overimitate any type of actions: Tool-use vs bodily movement***Yuuki Taniguchi, Wakako Sanefuji* *Kyushu University, Japan*

Overimitation is defined as imitation of a bigger action sequence, including causally irrelevant actions. Normative accounts suggested that children view causally irrelevant elements as being essential and spontaneously make rules about the action sequence. However, it has not been investigated whether and how children spontaneously make action rules. In order to examine this issue, we investigated 4 action situations in 2-, 3-, and 5-year-old children (N = 59): using a main/different apparatus and using a tool/a bodily movement. Results showed that children spontaneously making rules about the action sequence in the case of irrelevant action regarding tool-use toward apparatus. Further, 5-year-old children had significantly higher overimitation scores compared to 2-year-old children. The occurrence of overimitation is, thus, influenced by how dominant the demonstrated actions are, i.e., the degree of causal irrelevance from the perspective of the final goal.

**P1025****Rational imitation in infancy is different from that in childhood***Yuuki Taniguchi, Wakako Sanefuji* *Kyushu University, Japan*

Gergely et al (2002) showed rational imitation using a light box in infants; infants imitated an unusual action only when the model chose to perform it freely. Schiwer et al

(2006) also showed the evidence of rational imitation in 12-month-old infants by an analogous task used the house and dog. However, there remains two issues to be discussed. First, it is not clear whether rational imitation keeps observed in childhood. Secondly, as described above, previous studies used different types of objects in terms of familiarity. As increasing ages, children are more familiar to objects and may precede understanding in the model's actions. Then, we tested Gergely's and Schiwer's tasks to 3-, 5-year-old children and adult. Results showed the evidence of rational imitation since childhood through Gergely's task, but not through Schiwer's task. This suggests rational imitation in childhood or later may be different from that in infancy.

**P1026****Exploring factors enhancing childcare behavior and parent-role evaluation in Japanese fathers**

*Yoko Terami (1), Ito Atsushi (2), Minami Kenji (3), Matsushima Kyo (4), Oikawa Yuko (5), Takemoto Keiko (6), Teramura Yukano (7)* 1. *Kobe Shoin Women's University, Japan*; 2. *Kobe University, Japan*; 3. *Kyoto Tachibana University, Japan*; 4. *Soai University, Japan*; 5. *Nihon Institute of Medical Science, Japan*; 6. *Shijonawate Gakuen University, Japan*; 7. *Kobe University, Japan*

Governments and other stakeholders have recently made much account on fathers' proactive involvement in child bringing-up to realize a gender-equal society in Japan. We have thus far made it clear that young men's attitude toward childcare, i.e., nurturance is gradually developed through such experiences as taking good care of small children and as being taken good care of by both of their parents while they were youngsters. This attitude, however, does not lead directly to men's childcare behavior. Rather the behavior could be mediated by the factors such as good marital relationship, supportive companions and/or familiar advisers, finally resulting in higher self-evaluation as a male parent. To testify this hypothesis, question sheets asking both mothers and fathers to fill in were distributed to the families at regular health check-ups for infants, nurseries and kindergartens in four cities of Hyogo Prefecture. The data from 738 male respondents was analyzed.

**P1027****Factors related to attitudes toward nurturing the next generation in Japanese college students***Taeko Teramoto, Yoshiyuki Shibahara* *Kaichi International University, Japan*

Factors related to attitudes toward nurturing the next generation in Japanese college students were investigated (N = 460). An analysis of variance was conducted with scores of

the Nurture Scale, and Capability to Nurture the Next Generation Scale as dependent variables, and gender, college major, and patterns of time perspective derived by cluster analysis as independent variables. Results indicated that students with a higher time perspective had higher scores on the dependent variables. Furthermore, female students had higher scores on certain subscales. Moreover, female students majoring in human care and human services with a lower time perspective had higher scores in the preparedness, confidence in accepting newborns, and confidence in self-development subscales. These findings suggest that a positive time perspective contributes to positive attitudes toward nurturing the next generation. Results also suggested the influences of gender and the major on attitudes regarding nurturing.

**P1028****Changes in Mother's Feelings and Behaviors Toward Infants' Crying: The Period Before and After Rearing Their Second Child***Yuko Terui* *Shohoku College, Japan*

This study examined how 12 Japanese women raising young children talk about their infant's crying. Semi-structured interviews were used as the research method. Content analysis revealed that 6 of the women reached a crisis situation because of their infant's crying while rearing their first child. This situation was of three types: (a) acute stress about their infant's crying; (b) poor caregiving; and (c) ambivalence, confusion, and conflict towards oneself. The results also showed that as a result of having brought up one child, mothers felt less-negative emotions when their second infant cried. For first-time mothers who experience a crisis because of their infant's crying, this study recommends that they consciously change themselves so that they moderate the amount of concern they feel over their infant's crying and hence no longer pay excessive attention to their second infant when that infant cries.

**P1029****An investigation on occupation values of special education teachers in China***Jinlai Tian, Enling Zuo, Xiangkui Zhang* *Northeast Normal University, China*

The occupation values of teachers is very important to children who have special needs. To explore the occupation values of special education teachers in China, we investigated occupation values on 31 special education teachers and 31 normal education teachers by WVI scale. The results show that there have significant differences in economic returns, altruism and intellectual stimulation between the two groups on the 13 factors of

VVI scale. The results also show that comparing with the normal education teachers, the scores on altruism and intellectual stimulation of special education teachers are significantly higher, and the scores on economic returns of special education teachers is significantly lower. The special education teachers think their work can make more senses to society and benefits to other people. Also, they need more ideas, more flexible abilities to solve new challenges in their work, but their economic returns need to be improved gratefully in the future.

### P1030

#### **Internet Communicative Characteristics of Social-withdrawal College Students at Different Levels: Social Network Analysis**

**Yuan Tian (1,2), Zongkui Zhou (1,2), Qian Ding (1,2), Fengjuan Zhang (3), Yunzhe Hong (1,2), Yifan Yan (1,2), Yi Ding (1,2), Dan Li (1,2)** 1. *Key Laboratory of Adolescent Cyberpsychology and Behavior (CCNU), Ministry of Education, Wuhan 430079, China;* 2. *School of Psychology, Central China Normal University, Wuhan 430079, China;* 3. *School of Education Science, Guangxi University For Nationalities, Nanning 530006, China*

It has been proved that introversion and shyness are concerned with Internet communication. However, the relationship between social withdrawal and Internet communication is still at issue. The scale of college students' social withdrawal and nomination questionnaire of college students' social interaction were used to measure the level of social withdrawal in college students and their communicative characteristics ( $n=486$ , mean age = 20.3 years,  $SD=1.74$ ). Social network analysis and logistic regression results indicated that: (1) College students' offline communication and network communication has high consistency. (2) There was a significant negative correlation between the level of social withdrawal and the centrality of the weak ties of individual offline communication. (3) Considering the variable of internet communication frequency, social withdrawal played a significant role as a predictor. The research helps to realize the overall situation of Internet communication in college students, provide theoretical framework for the intervention of social withdrawal.

### P1031

#### **Parental Assessment of Cooperativeness, Role-taking, Consideration for others, Obedience to rules, Self-assertion, Affiliation, and Sympathy in Schoolchildren**

**Mainie Tobari (1), Fumiko Nao (1), Toshimoto Shuto (2), Tomoko Oyama (3), Saori Tamura (4)** 1. *Bunkyo University,*

*Japan;* 2. *Saitam University, Japan;* 3. *Shirayuri College, Japan;* 4. *Akiruno Educational Bureau, Japan*

Tobari and others developed the Multifaceted Cooperativeness Scale for Children Assessed by their Parents (MCSCAP) in 2015. This study was designed to develop new scales to assess other, related traits and abilities of children and examine the relationship between these new scales and subscales of the MCSCAP consisting of Cooperation, Collaborative problem-solving, and Harmonious conformity. A survey was conducted with parents of schoolchildren ( $N=2034$ ). Principal component analyses and reliability analyses were conducted on their responses, and scales for assessing Role-taking, Consideration for others, Obedience to rules, Self-assertion, Affiliation, and Sympathy were developed. Then, multiple regression analyses were conducted to estimate the effects of these new scales on the subscales of MCSCAP. Results indicated that Cooperation was predicted by Affiliation and Role-taking, Collaborative problem-solving was predicted by Role-taking and Obedience to rules, and Harmonious conformity was positively predicted by Consideration for others, whereas it was negatively predicted by Self-assertion.

### P1032

#### **The influence of a mother's child-rearing attitude on the formation of a university student's friendship skills fostered during junior high school**

**Sueko Toda** *Nagoya University of Arts and Sciences, Japan*

The purpose of the present study is to explore the relationship between a mothers' child-rearing attitude and a university student's friendship skills. Sixty students participated in this project. Two questionnaires were conducted: 1) a friendship questionnaire consisting of 28 items, and 2) a mother's child-rearing attitude questionnaire consisting of 42 items. Students rated their mother's child-rearing attitude during junior high school and their present friendship skills. A factor analyses extracted 3 factors for friendship creation and 5 factors regarding child-rearing attitude. To explore whether the mother's child-rearing attitude influences the friendship, a multiple linear regression analysis was conducted. The factor "permissive" influenced the factor "close relationship" as well as the factor "mutual understanding". Furthermore the factor "authoritarian" influenced the factor "anxiety/conformity". These findings suggest what type of friend a student makes is influenced by characteristics found in the mother's child-rearing attitude during the junior high school period.

### P1033

#### **Types of work-family balance and**

#### **mental health in middle-aged and elderly people, from the perspective of work-family conflict and work-family facilitation**

**Makiko Tomida (1,2), Yukiko Nishita (1), Chikako Tange (1), Rei Otsuka (1), Fujiko Ando (1,3), Hiroshi Shimokata (1,4)** 1. *National Center for Geriatrics and Gerontology, Japan;* 2. *Research Fellow of the Japan Society for the Promotion of Science, Japan;* 3. *Faculty of Health and Medical Sciences, Aichi Shukutoku University, Japan;* 4. *Graduate School of Nutritional Sciences, Nagoya University of Arts and Sciences, Japan*

Relationships between types of Work-Family Balance (WFB) and mental health were investigated in middle aged and elderly sample of Japanese people. Participants ( $N=1350$ , Age range = 40-85 years) were sampled from the National Institute for Longevity Sciences-Longitudinal Study of Aging (NILS-LSA). Types of WFB were assessed by cluster analysis of the Work-Family Conflict Scale and Work-Family Facilitation Scale (WFC and WFF). Mental health was assessed by the Center for Epidemiologic Studies Depression Scale (CES-D), the Life Satisfaction Index K (LSI-K), and the Self-Esteem Scale. General linear modeling indicated a significant difference in mental health by the types of WFB. The mature WFB type (lower WFC and higher WFF scores) was particularly related to lower depression, higher life satisfaction, and higher self-esteem. These findings suggested that the types of WFB were associated with the mental health of middle-aged and elderly, working people.

### P1034

#### **The development of empathic behaviors in Japanese toddlers**

**Mizuho Ueda, Emiko Katsurada** *Kwansei Gakuin University, Japan*

This exploratory study examined the Japanese toddlers' development of empathic behaviors. Twenty toddlers and their mothers participated in this study. The children's responses to their mothers' distress and unresponsiveness were observed in a laboratory. They showed more empathic behaviors to the mothers' distress than the mothers' unresponsiveness, at age 2 than at age 1. The empathic responses to mothers unresponsiveness at age 1 had a moderate positive correlation with their age in month. These findings suggest that it is difficult for toddlers to empathize with mothers unresponsiveness due to the lack of their mothers' vocalization or expression, but they become able to empathize as they get older. Some aspects of empathic responses; perspective taking, empathic concern, personal distress and indifferent responses were also assessed and we discussed these developmental features.

**P1035****A study for assessing self-control development of children in East Asia**

**Takayuki Umezaki (1), Yuichiro Yamagiwa (2), Xiangshan Gao (3), Mai Kominato (4), Marie Sato (5), Jung Hwan Hyunn (6)** 1. Konan Women's University, Japan; 2. Tokyo Metropolitan University, Japan; 3. Tokoha University, Japan; 4. Hosei University, Japan; 5. Research and Training Institute of the Ministry of Justice, Japan; 6. Seoul Theological University, Republic of Korea

Recently, effects of non-cognitive skills on future life have been focused. Among these skills, development of self-control was compared between Japanese and Korean pre-school children. Mischel (2014) indicated self-control in infancy would predict future life success. A questionnaire survey was conducted with Japanese (N=1072) and Korean (N=1251) children between the ages of 3 and 6 years. The questionnaire included 14 items related to self-control. Mothers responded by using a four-point response scale. Results indicated that Japanese children's self-control score was lower than Korean children for every item, at every age. The score of almost all of the items increased with age in both countries. The above results could reflect differences perspectives on future images of children between the two countries: i.e. Japanese parents regard good relationship with friends and not bothering others as important, whereas Korean parents regard leaderships and economic affluence as important.

**P1036**

**The relationship between the mental number line and mapping and scaling abilities in young children**  
**Moe Uragami (1,2), Shinichiro Sugimura (1)** 1. Hiroshima university, Japan; 2. Research Fellow of Japan Society for the Promotion of Science, Japan

Young children make the mental number line for numerical operations. The studies concerning the mental number line often use the number - to - position task (NP task) which estimates the number on a number line. Recently, it is said that the mental number line is related to spatial abilities (e.g. Patro et al., 2014). This study investigated the relationship between the mental number line and mapping and scaling abilities in young children. We think that the mental number line positioning of presented number in the number line need to mapping and scaling abilities, because both spatial abilities are related to objects positioning. As a result, it was found that development of mapping and scaling abilities were preceded development of the mental number line. In particular, young children can use proportional judgments in spatial tasks but not NP task.

**P1037**

**Preschool teachers' practices of monitoring children to prevent health risks and facilitate adaptation: Multi-method triangulation in a qualitative study**

**Shoka Utsumi** Ochanomizu University, Japan

Inadequate monitoring in a family is a widely recognized risk factor for child safety and for the development of health and conduct problems; however, little is known about monitoring per se and even less about monitoring in early childhood education. This study investigated and clarified the constitution of monitoring practices of preschool teachers using qualitative content analysis. No-participant observation was conducted for 14 days in eight classes of 5-year-olds in six preschools; 269 observational episodes were recorded that were collapsed into 906 descriptions and classified by monitoring behavioral code schemes (verbal instruction, confirmation, structuring, cooperation among teachers, watching-over, and reports from children), which were developed using teachers' (n=6) reports about monitoring practices collected through interviews and questionnaires. Verbal instruction was partially overlapped with confirmation, structuring, and watching-over. Teachers obtained additional information from children's self-disclosures. Further quantitative study is needed to confirm how monitoring practices contribute to children's development.

**P1038**

**The relationship of temperament traits with behavior and emotional problems in adolescents: evidence from a Russian sample**

**Georgy M Vasin, Marina M Lobaskova, Elena D Gindina, Sergei B Malykh** Psychological Institute of the Russian Academy of Education, Russia

Research suggests a positive relationship between youth temperament traits and behavior problems. We studied the relationship between temperament and behavior and emotional problems on a Russian-speaking sample (n=203, age 15-17). We used the Russian versions of Rothbarts ATQ (Adult Temperament Questionnaire) and Achenbach's YSR (Youth Self Report) to assess temperament and behavioral problems respectively. The Fear and Discomfort temperament dimension correlated positively with internalizing problems. Sadness was linked to all behavior problems except delinquent behavior. It was still related with the overall externalizing dimension although through aggressive behavior problems only. Frustration correlated positively with all problem scales. Positive affect was negatively related to the Withdrawn scale and positively related to Agression. We

show that high emotionality is related to behavior problems in the Russian sample. Overall our results conform to international research, although we found a few peculiarities in the Russian sample.

**P1039**

**Intergenerational Transmission of Optimism among Parents and Preschool children: the Mediation Effect of Parenting Style**

**Xinrui Wang, Yan Xu, Yanyan Xing** Beijing Normal University, China

In the present study we investigated the relationship between parents' and preschool children's optimism and the mediation effect of parenting style. 1046 preschoolers' parents were recruited from Beijing (Mage = 36.02 years, SD = 5.22, 75.2% female; their children Mage = 4.83 years, SD = 0.92, 48.0% girls). Participants were asked to complete the questionnaires, assessing the optimism of themselves and their children, and their parenting style. The results showed significant intergenerational transmission effect of optimism ( $\beta = 0.46, p < 0.001$ ). Parents' optimism positively predicted democratic parenting, whereas negatively predicted authoritarian, permissive, and doting parenting ( $ps < 0.001$ ). Democratic parenting positively predicted children's optimism, and the other three negatively predicted children's optimism ( $ps < 0.05$ ). The mediation effects of the four parenting styles were significant (total mediational effect was 0.15), in which democratic parenting explained the most of the variation (45.5% of the indirect effect). The findings suggest that the intergenerational transmission of optimism exists, and is partially mediated by parenting style.

**P1040**

**The Effect of Social and Non-social Network Use on Youth's Social Creativity: The Moderation Role of Personality**

**Yaxian Wang, Chuanhua Gu** School of Psychology, Central China Normal University; Key Laboratory of Adolescent Cyberpsychology and Behavior, Ministry of Education, China

Abstract: The Revised Short version of Eysenck Personality Questionnaire (EPQ-RS), Internet Interaction Questionnaire, The Questionnaire of Preference for Internet Use, Social Creativity Questionnaire for Elementary School Children, were administered to 796 high school students to examine the effect of social and non-social network use on youth's social creativity and the moderation role of personality. The findings suggested that, information acquirement from the network, information exchange from the network, and social network dependence predicted positively social creativity, and entertainment

and interpersonal relationship on the network predicted negatively social creativity among high school students; meanwhile, the level of psychoticism of high school students moderated positively the effect of their dependence on the the interaction by the network on their social creativity, and the level of neuroticism moderated negatively the effect of their self-perception on the network on their social creativity. Key words: Social creativity Personality Social network use Non-social network use

#### P1041

##### What types of benefits from negative life events promote identity achievement?

**Hitomi Watanabe** Doshisha University, Japan

Positioning negative events as central to one's identity is said to have adverse effects on psychological health. However, if negative events are not traumatic and viewed as meaningful, having these events central to identity generally promotes identity achievement. To understand the effects of finding benefits in detail, we examined what types of benefits are important for identity development. Participants were asked to recall the past negative event that had most influenced who they really are. Regarding this event, participants completed the Finding Benefit Scale, the Centrality of Event Scale, and the Identity Scale. The path analyses revealed that not "realizing the warmth of other people" but "giving positive meanings to one's growth" predicted higher levels of event centrality and identity achievement. These findings suggest that finding benefits by not just appreciating supportive relationships with others, but by actively exploring the positive meanings of events might promote identity development.

#### P1042

##### Development of preschoolers' self-regulatory behavior facilitated by their mothers' responsive support

**Akiyo Watanabe (1), Tadaharu Watanabe (2), Kazuko Takeo (2)** 1. Shirayuri College, Japan; 2. Tokyo University of Science, Japan

This study conducted a two-year-longitudinal study through interviewing mothers whose children were from two years to four years of age. The developmental change of children's self-assertion and self-inhibition was analyzed. The results showed that while children's self-assertive behaviors during their two-year-old days, were mainly expressed by non-verbal behaviors, they expressed them linguistically during their three-year-old days. On the other hand, children's self-inhibitive behaviors during both two - and three-year-old days, seemed to be affected by their own prospect

of their mothers' responsive behaviors. In addition, the relationship between children's self-assertive / self-inhibition behaviors and mothers' responsive behaviors in mother-child interaction, has been examined by the protocol analysis. We discussed the developmental change of children's self-assertive and self-inhibitive behaviors from two - to four-year-old days in view of their mothers' responsive assistance.

#### P1043

##### Children Internet Use and Academic Performance: A Longitudinal Study

**Na Wu, Lu Huang, Zongkui Zhou** Central China Normal University, China

The purpose of this study was to explore the trend of Internet use of Chinese children and its relationship with academic performance. 256 children from Grade 3 and Grade 4 in elementary school participated a four-year follow-up investigation. The longitudinal data was analyzed by the Hierarchical Linear Model (HLM). The results revealed that the time of Children Internet Use had increased steadily over these four years, and the preferred content of Internet use had significantly gender differences with age. In addition, although there was no significant linear correlation between children's use time and academic performance, the preferred content of Internet use was significantly associated to academic achievement. Intensive use for leisure (such as playing games) can significantly predict low academic achievement (both Math and Reading), while using computer for information seeking can improve children's academic performance, especially in Reading.

#### P1044

##### The Effect of the Completion of Graphical Representation on the Use of Inversion principle of Four-to-Six-Year-Old Children

**Yina Wu** Beijing Normal University, China

Inversion principle is used to describe that addition and subtraction are inverse, which means that when we add or subtract a fixed number to an initial number, it remains the same. Children's use of inversion principle play an important role in the development of math cognition. This research used normal form created by Lai et al. in 2008 to investigate 53 four-to-six-year-old children's performance on the task of inversion. Then we discussed the development of children's inversion concept. The result showed that completion of graphical representation has an impact on four-six-year-old children's comprehension of inversion. Through keeping the completion of graphical representation in our task, we found the performances of four -year-old children have been improved. Under this task, four-year-old can have as good performance

on inversion task as children aged five or six. Five-year-old children can roughly understand inversion principle on general conditions. Six-year-old children have already mastered inversion principle.

#### P1045

##### The Relationship Between Personality Types and Prosocial Behavior and Aggression in Chinese Adolescents

**Xiaochun Xie (1), Wu Chen (2,3), Li Lei (1,3), Cai Xing (1), Yongxin Zhang (2,3)**

1. Renmin University of China, China; 2. Key Laboratory of Adolescent Cyberpsychology and Behavior(CCNU), Ministry of Education, China; 3. Central China Normal University, China

Research on personality types has recently received increasing attention in the field of personality and social psychology. The aim of present study was to investigate the relationship between adolescents' personality types and prosocial/aggressive behavior. A sample of 1644 Chinese adolescents was recruited to complete the NEO Five-Factor Inventory and the Children's Behavior Inventory. Results revealed that there were four personality types in Chinese adolescents: resilient, overcontrollers, undercontrollers, and averagers. The averagers accounted for the highest proportion, which was the new finding that reflected the characteristics of Chinese culture. In addition, resilient reported the highest score whereas overcontrollers reported the lowest score on measure of prosocial behaviors. Both overcontrollers and undercontrollers reported the highest score, and resilient adolescents reported the lowest score on measure of aggression. The present study indicated that overcontrollers also have the risk of externalizing problems, and undercontrollers also tend to have relatively higher prosocial behaviors.

#### P1046

##### The effect of family environment on preschool children's emotional and behavioral problems: the chain mediating effect of optimism and resilience

**Yan Xu, Qi Cheng, Yanyan Xing, Xinrui Wang** School of Psychology, Beijing Normal University, China

This current research explored the self-system mediators, particularly the positive personal traits, optimism and resilience, in order to fully understand the mechanisms underlying the effect of family environment on preschoolers' emotional and behavioral problems. We selected four different levels of kindergartens in Beijing as sampling sites and 1109 valid questionnaires. We used Harman single factor analysis to test whether there were common method biases or not. And Bootstrapping analyses were utilized to test the hypothesized



chain mediating model. The results indicated that family environment had significantly negative direct effect on preschoolers' emotional and behavioral problems. Optimism and resilience played multiple mediation effects between family environment and preschoolers' emotional and behavioral problems. The total mediation effect size was 50.00%. And the effect size of the path through optimism was the strongest among the three mediation paths. The findings of the study have important implications for preventing the emotional and behavioral problems of preschool children.

#### P1047

##### **Longitudinal Study on Early Development of Numerical and Literal Notation in Young Children**

**Kyoko Yamagata (1), Koike Wakaba (2)**  
1. *Kyoto Notre Dame University, Japan*; 2. *Kyoto Women's University, Japan*

Development of understanding and production of numerical and literal notations in the early home environment was investigated in a longitudinal study. Participants were Japanese children (N = 7). The research was conducted during approximately two years, from when children were 1.5 to 3 years of age. Their mothers provided monthly reports of episodes in which numbers and Japanese letters were observed at home, which indicated 250 episodes for numbers, and 154 for letters. Analysis of episodes indicated that caregivers recited, or spoke the numbers or letters to 1.5 to 2.5 years old children, who imitated or recited them together. Two-year-old children recognized and read written numbers and letters, and 3-year-old children began to write numbers and letters. Moreover, children acquired numbers and letters through caregivers' activities at home. Early development process of both numbers and letters was similar, however letters, which are more numerous, took longer to acquire than numbers.

#### P1048

##### **Developmental changes of guilt and shame in preschool children**

**Sayoko Yamaguchi, Wakako Sanefuji**  
*Kyushu University, Japan*

Previous studies have focused on the distinctive features and the individual differences of guilt and shame, but how these two emotions develop is unknown. Thus, this study was aimed to examine the developmental changes of guilt and shame in 3- to 6-year-old children. In study 1, children's behaviors were observed in the spilling-ball paradigm to assess guilt and shame. In study 2, children were presented with two stories and asked about the emotions and behaviors under the situations. As results, children at 3 years displayed more shame than at other ages (study 1), and 4, 5 and 6-year-old children were more likely to choose the guilt-related behaviors

than 3-year-old (study 2). These results suggest that the expression of shame emerges earlier than guilt, and instead of the expression of shame, the expression of guilt increases with age.

#### P1049

##### **language development of infants and consciousness of nursery teachers in transition from onomatopoeia to the general vocabulary**

**Mayumi C Yamamoto (1), Mana Ishimoto (2)**  
1. *university, Japan*; 2. *hospital, Japan*

Onomatopoeia has an important role in the infant as well as in the adults. The present study aims to show the developmental changes of onomatopoeia in the period of infancy. Participants are parents and nursery of infant. They performed a questionnaire about the frequency of onomatopoeia use and the general vocabulary in the nursery school children. The results showed that the frequency of onomatopoeia use increases in the period of 0–2 years of age, reaching its peak at 2-years-old, after which it begins to decrease. That means the frequency of use of onomatopoeia as general vocabulary increases with the age till 2 years old, which becomes a turning point. Nursery think that the use of onomatopoeia is effective during the period 0–2 year-old. It became evident that nursery are using onomatopoeia depending on the age of infants and in different scenes such as exercise training, daily life training, music, painting guidance.

#### P1050

##### **Longitudinal changes of global self-worth and lifestyle during early adolescence in Japan**

**Chika Yamamoto** *College of Nagoya Bunri University, Japan*

The purpose of this study was to examine longitudinal changes of global self-worth and lifestyle during early adolescence in Japan. Global self-worth was the degree to which parents like themselves as a person, and are happy with. Lifestyles were assessed sleep habits, dietary habits, care about health, and self-evaluation of unhealthy lifestyle. The questionnaire was administered at two different times, repeatedly. Time1 was conducted in May 2003, during the first term of eighth grade. Time2 was in May 2004, during the first term in ninth grade. The analysis reported here, are based on 556 junior high school students (232 males and 324 females). Main results were as follows. (1) There were declines in global self-worth. (2) There were increases in 'skipping breakfast', 'staying up late', and 'lack of sleep'. (3) There were significant negative correlations between degrees of global self-worth and degrees of 'staying up late', 'lack of sleep', and 'unhealthy lifestyle'.

#### P1051

##### **Development of script generalization to a new situation in young children**

**Kaichi Yanaoka, Masuo Koyasu** *Graduate School of Education, Kyoto University, Japan*

The aim of the present study was to elucidate the effect of age on children's ability to adapt their script to a new situation. Forty-eight 4- and 5-year-old Japanese kindergarteners participated individually in this study twice. There were two conditions; one is to ask a child what his or her friend usually does at their kindergarten and the other is to ask the child what a fictitious child usually does at another kindergarten. A mixed-design ANOVA was conducted using age groups and conditions as factors to examine differences of the number of acts reported in each condition. In the friend condition five-year-olds mentioned more acts than four-year-olds, while the difference between the age groups in the fictitious-other condition was not significant. It was found that young children become increasingly hesitant to over-generalize, not so much toward other people but toward new situations that they themselves have not experienced.

#### P1052

##### **Applicability of French "Palate Education" to Japanese Preschoolers**

**Yuko Yato, Yuu Ito** *Ritsumeikan University, Japan*

This study was conducted to examine the applicability of "palate education", which was first put forward by Jacques Puisais, a French journalist, to Japanese preschoolers. We modified his methods for younger Japanese children, aiming at the development of the children's sensitivity to the five senses of taste and teaching them to realize what and how they should eat. Ten children were asked to try a variety of foods and were encouraged to feel the textures and experience the tastes carefully. They were then asked to describe what they thought about the foods. Some PowerPoint slides were shown to demonstrate how the foods were produced. To verify the effects of this experiment, the children's caregivers were handed questionnaires inquiring about any changes in the daily eating habits of the children. This study revealed that French-style palate education is applicable to Japanese preschoolers and significantly improves their sensitivity and interest for foods.

#### P1053

##### **Cognitive mechanism underlying the relationship between rapid automatized naming and reading: A longitudinal study on bilingual children**

**Susanna Yeung** *The Hong Kong Institute of Education, Hong Kong*

Rapid automatized naming has been demonstrated as an important correlate of various reading outcomes. However, the cognitive mechanism underlying the RAN-reading relationship is not well understood. The primary goal of this study is to evaluate three major theoretical accounts for the RAN-reading relationship: phonological processing account, orthographic processing account and speed of processing explanation. Each theoretical account would lead to different predictions on cross-language transfer of RAN to reading. One-hundred twenty nine Chinese-English bilinguals were followed from age 4 to age 5. They were assessed at two time points for their word reading and RAN in Chinese and English. Both concurrent and longitudinal cross-language transfers of RAN to reading were examined. The cross-language transfers from English RAN to Chinese reading were found both concurrently and longitudinally but no transfer from Chinese RAN to English reading. Our results supported the orthographic processing account. Theoretical implications are discussed.

**P1054**

**Outdoor play in early childhood: the effects of contact with nature and active communication with others**

**Mari Yoshinaga (1), Akiko Shikano (2), Shingo Noi (2)** 1. *Showa Pharmaceutical University, Japan*; 2. *Nippon Sport Science University, Japan*

Exciting play experiences in childhood are thought to enhance children's psycho-physiological development. In recent years, children have become increasingly deprived of the opportunity to play outdoors, and we must scientifically investigate ways to maintain playful community environments. Exercise in vigorous play with sufficient physical movement might contribute to physical aspects of children's growth, though there is insufficient evidence to demonstrate the mechanism of how excitement plays a role in psychological development. The subject children were followed for study period from age four to five. Participants played with a creative play worker for a few hours in nature and active conversation with friends and adults. Participants completed Go/NoGo tasks to examine the effects of play. Go/NoGo tasks are considered a non-invasive measure for testing sustained attention and response control. Other indicators as SDQ scores by their parents and several physiological levels were also inquired.

**P1055**

**Group-directed Praise Increases Preschoolers' Task Engagement**  
**Xiangkui Zhang, Jingying Sha, Mingjing Wen** *Northeast Normal University, China*

The ability to stimulate changes in attitudes and behavior is an important part of any group's functioning. Some research has found that 5-year-old children already appear in-group preference. While children understand the world and themselves by adults' instruction. Research has shown that feedback is one of the top ten influences on learning. Therefore, the purpose of this study is to investigate whether group-directed praise can improve preschoolers' task engagement or not. A total of 115 preschoolers from Jinlin Province participated ( $M = 5.93, SD = 0.42$ ). Children were randomly assigned to three conditions. Respectively, "Group-directed Praise condition", "Group Identity Condition" and "Control Condition". The current study demonstrated that group-directed praise increase preschoolers' task engagement significantly. Meanwhile, minimal groups may be a powerful means by which to shape preschoolers' task engagement as well.

**P1056**

**Meta-Analysis of the Relationship between Self-esteem and Interpersonal Sensitivity : Based on Mental Health**

**Xiangkui Zhang, Shuang Gao** *Northeast Normal University, China*

Reviewing the research on the mental health of Chinese university students, the most closely related factor was self-esteem. Meanwhile, many empirical researches have indicated a close correlation between self-esteem and interpersonal sensitivity, an important factor of mental health. The study conducts 30 research papers concerning self-esteem and mental health that fits into the standard of meta-analysis. The meta-analysis based on R language showed a high significant correlation between self-esteem and interpersonal sensitivity ( $r = -0.339$ ). Moderator analyses revealed that the type of subjects ( $Q = -2.76, p > 0.05$ ) and academic journals ( $Q = 4.53, p > 0.05$ ) have no significant moderating effects on relationship between self-esteem and interpersonal sensitivity. However the study found geographical distribution has significant moderating effects on the relationship between self-esteem and interpersonal sensitivity ( $Q = 123.79, p < 0.001$ ). The result showed that self-esteem has an important predictive influence on interpersonal sensitivity.

**P1057**

**The Impact of Classmate Relationship Climate on Adolescent Problem Behavior: A Moderated Mediation Model**

**Yongxin Zhang, Qian Ding, Wu Chen, Chenyan Zhang, Zongkui Zhou, Xiaojun Sun** *School of Psychology, Central China Normal University, China*

The present study examined the impact of classmate relationship climate on adolescent's problem behavior as well as the effect of self-esteem and parental cohesion. A sample of 1708 middle school students completed Questionnaire of My Class, Adolescent Problem Behavior Questionnaire, Rosenberg's Self-Esteem Scale and the cohesion subscale of the Family Adaptation and Cohesion Evaluation Scales II Inventory. Results revealed that: (1) After controlling gender and age, classmate relationship climate significantly negative predicted adolescent's problem behavior; (2) Self-esteem mediated the association between classmate relationship climate and adolescent's problem behavior; (3) The mediating effect of self-esteem was moderated by parental cohesion, in another word, the indirect effect was stronger for adolescents with high parental cohesion. These findings implied that the prevention and interventions for adolescent problem behavior should not only pay attention to the effect of peer factors, family factors and individual factors, but also to the combined influence of those factors.

**P1058**

**Young children's representation of inter-object relation in spatial reorientation**

**Meng Zhang, Qingfen Hu** *Institute of Developmental Psychology, Beijing Normal University, China*

We tested 4- and 5-year-old children in a square room with a distinctively colored wall with two reorientation tasks. In two-location task, children watched the experimenter hiding two toys at two corners. After disorientation, the experimenter uncovered one toy and the child searched for the other one (target). In one-location task, only one toy was hidden. Children's accuracy was above chance in both tasks, but better in two-location task than one-location task, which suggested that the inter-object relations between the uncovered and target corners facilitated object locating process. In two-location task, the accuracy was lower when the target was next to the uncovered corner than when they were diagonal. In the former condition, 4-year-olds showed more incorrect searching at the other corner next to the uncovered one, suggesting their failure to jointly use inter-object relations and landmark. This ability seemed not ready until children reached 5 years old.

**P1059**

**Promoting Social Competence for Shy Children: An Intervention Program Based on Social Information Processing Theory**

**Yuetong Zhao (1), Enling Zuo (2), Xiangkui Zhang (1)** 1. *Northeast Normal University, China*; 2. *Changchun Normal University, China*

This study evaluates the effects of an early intervention program based on social information processing theory (SIP), which is specifically designed for shy children to improve their social competence and reduce their reticence-wariness. A sample of 24 shy preschool-aged children were randomly assigned to either social competence training (SCT) group or a wait-list control group. Results showed that at both the post-intervention and the 3-month follow-up assessments, shy children who participated in the SCT demonstrated a significantly greater post-intervention decrease in observed reticence-wariness and a greater increase in socially competent behaviors in kindergarten, as compared with wait-list controls. Participants in SCT group also displayed teacher-rated behavioral improvements, highlighting implications of the SCT approach for early intervention.

#### P1060

##### **School Based Intervention on Math- Gender Stereotypes in Adolescent Girls**

**Fengqing Zhao (1), Guoliang Yu (2) 1.** *Department of Psychology, Renmin University of China, China;* **2.** *Institute of Psychology, Renmin University of China, China*

This study developed an intervention program based on Identity Threat Model to reduce math-gender stereotypes for middle school girls. We used three scales (math-gender stereotypes, language-gender stereotypes, and self-esteem) three times: before the intervention (pre-test), after the intervention (post-test), and three months after the end of the intervention (follow-up test). Math and Chinese exam scores were collected the three times that data was collected. Results showed that math-gender stereotypes, math scores and self-esteem were improved among girls in intervention group after the intervention. There was no significant difference in language-gender stereotypes and Chinese exam scores between the two groups before and after intervention. Results from the follow-up test showed no significant differences between intervention group and control group, except

for math-gender stereotypes. These results indicate that the intervention was effective in reducing math-gender stereotypes. We discussed the results from an intervention effectiveness perspective at the end of the paper.

#### P1061

##### **The Development of three-dimensional attention as Measured by the Test of Everyday Attention for Children (TEA-Ch): A Longitudinal Study from Grade 1 to Grade 4** **Hui Zhou, Chao Yan, Wei Wei, Ciping Deng** *East China Normal University, China*

The aim of this study was to examine developmental trajectories of three domains of attention including sustained attention, selective attention and attention control. One hundred and forty five Chinese children were recruited from Grade 1 to Grade 4 and administrated using The Test of Everyday Attention for Children (TEA-Ch). Multi-group confirmatory factor analysis was employed to compare three invariance models, and latent growth model was used to examine growth trajectories of three aspects of attention. The results supported a stable three-factor structure of attention across Grades 1–4. Selective attention matched a linear growth model, while sustained attention and attention control fitted a quadratic growth model. No correlations were found between their growths (linear slopes and quadratic slopes). Moreover, no significant differences between genders were found either on the attention performances, or on the attention growths. These findings suggest that different attention structures differentially developed in children across Grades 1–4.

#### P1062

##### **Links between activity involvement and positive youth development: the mediating role of identity style** **Rita Zukauskienė, Inga Truskauskaitė** *Kuneviciene Mykolas Romeris University, Lithuania*

Prior research has demonstrated that participation in out-of-school time activities is associated with positive and healthy development among adolescents (e.g., Eccles and Gootman 2002; Lerner et al. 2006; Zarett et al.

2009). However, there is a need for more testing of complex frameworks, such as the mediated models (Ramey & Rose-Krasnor, 2012). Thus this study aims to reveal the role of identity style in predicting positive youth development, followed the involvement in out-of-school activities. Tree-wave longitudinal data, collected in 1-year interval, was used for this study. The representative community sample, that was diverse in terms of family and socio-economic backgrounds, consisted of 811 high school students aged from 16 to 19 (Mage = 17.53, SDage = 0.64) at third assessment (only those students were included, that filled related measures all three assessments). The results indicated, that identity styles play an important role in explaining the positive relationship between activity involvement and positive youth development.

#### P1063

##### **Links between activity involvement and positive youth development: the mediating role of identity style** **Rita Zukauskienė, Inga Truskauskaitė** *Kuneviciene Mykolas Romeris University, Lithuania*

Prior research has demonstrated that participation in out-of-school time activities is associated with positive and healthy development among adolescents (e.g., Eccles and Gootman 2002; Lerner et al. 2006; Zarett et al. 2009). However, there is a need for more testing of complex frameworks, such as the mediated models (Ramey & Rose-Krasnor, 2012). Thus this study aims to reveal the role of identity style in predicting positive youth development, followed the involvement in out-of-school activities. Tree-wave longitudinal data, collected in 1-year interval, was used for this study. The representative community sample, that was diverse in terms of family and socio-economic backgrounds, consisted of 811 high school students aged from 16 to 19 (Mage = 17.53, SDage = 0.64) at third assessment (only those students were included, that filled related measures all three assessments). The results indicated, that identity styles play an important role in explaining the positive relationship between activity involvement and positive youth development.