



VNOP Conference 2014

May 20th – 21st at Hof van Wageningen

On behalf of the board of VNOP and the organizing committee we would like to welcome you at this 2014 conference. We are very happy that so many people have come to this conference and wish to present their work. As a consequence, the program has expanded as compared to the previous conferences. As you will see in the program, we have four instead of three parallel sessions on Tuesday. Furthermore, we introduced a new presentation format, Pecha Kucha presentations, to allow more researchers to present their work. So, the VNOP meeting promises to be a highly stimulating scientific event. The program offers a broad spectrum of issues, ranging from babies to emerging adults, from cognitive to social-affective questions, and research addresses both typical and atypical groups.

In this printed program we included the program and the general abstracts of the symposia. The abstracts of the symposium presentations, the pecha kucha presentations and the posters can be found on the website.

On behalf of the organizing committee, I wish you an exciting and pleasant conference.

The organizing committee,
Saskia Kunnen
Marijn van Dijk
Astrid Menninga
Sabine van Vondel
Wieke Dalenberg
Dianne van der Kolk

General Information

Opening

Kleine Veerzaal

Key Notes

Kleine Veerzaal

Symposia

- Locations:

Kleine veerzaal

Pomonazaal 1&2

Jagerskampzaal

Hoeversteinzaal

- Duration:

75 minutes (20 minutes per speaker and 15 minutes discussion at the end)

- Language:

English

- Role Discussant:

Give short introduction and lead discussion

Members Meeting

Kleine Veerzaal

Poster session

Terraszaal

Coffee & Tea

Lounge

Lunch

Terraszaal

Program May 20th

09.30 – 10.30 Registration and coffee
 10.30 – 11.00 Opening (Kleine Veerzaal)
 11.00 – 12.00 Key note speaker: Susan Branje (Kleine Veerzaal)
 12.00 – 13.00 Lunch (Terraszaal)
 13.00 – 14.15

Kleine veerzaal

Symposium

Convenor: Theo Klimstra

Multiple Perspectives on the Associations between Personality Traits and Interpersonal Relationships in Adolescence and Early Adulthood

Presenter 1:
 T. Klimstra
 The Dark Triad of Personality in Adolescence: Factor-Structure of a Concise Measure and Linkages with Multi-Informant Ratings of Aggression

Presenter 2:
 A. van den Akker
 Are the Jocks, Hiphoppers, and Metal-heads Alright? Early Adolescent Peer-Crowd Identification and Personality Development Across the Transition into Adulthood

Presenter 3:
 E. Teppers
 Loneliness and personality traits during adolescence: Reciprocal influences in different social contexts

Discussant: R. Hutteman
 Chair: T. Klimstra

Pomonazaal 1&2

Symposium

Convenor: Anouk van Dijk & Loes Pouwels

Beyond Hypothetical Vignettes: An Examination of Hostile Interpretation Biases in Different Contexts

Presenter 1:
 A. van Dijk
 Hostile Attribution Bias: Learned or Not Unlearned? An In Vivo Study of Age-Related Changes in Young Children's Intent Attributions

Presenter 2:
 T. Lansu
 The role of own aggression and popularity in hostile biases:

Presenter 3:
 L. Pouwels
 Interpretations of Bullying by Bullies, Victims, and Bully-Victims in Interactions at Different Levels of Abstraction

Discussant: F. Goossens
 Chair: A. van Dijk

Jagerskampzaal

Symposium

Convenor: Meike Slagt & Joyce Weeland

Micro-analytical approaches to person x environment interactions

Presenter 1:
 M. Slagt
 Children's differential susceptibility to parenting: Putting 'for better and for worse' to the test

Presenter 2:
 J. Weeland
 Differential Susceptibility to parenting in the Development of Externalizing Behavior: Emotional Reactivity as Explanatory Mechanism

Presenter 3:
 E. van Roekel
 Loss of pleasure in daily life: Examining relations with depressive feelings in early adolescents and young adults

Discussant: L. Keijsers
 Chair: M. Slagt

Hoeversteinzaal

Pecha Kucha

Pregnancy and infancy

Chair: M. van Dijk

Presenter 1:
 M. de Jong
 Born moderately preterm; Consequences for behavior and development at toddler age?

Presenter 2:
 B. Evans
 Cortisol levels in children of parents with a substance use disorder

Presenter 3:
 M. Zijlmans
 A Systematic Review on the Association between Prenatal Maternal Cortisol and Child Outcomes

Presenter 4:
 E. de Cock
 The Association Between Parental Pre- and Postnatal Bonding and Child Executive Functioning at 2 Years

Presenter 5:
 B.R.H. van de Bergh
 Maternal obesity during pregnancy and offspring attention in the first year of life: an auditory ERP study

Presenter 6:
 M. van den Heuvel
 Maternal mindfulness and anxiety during pregnancy affect infants' neural responses to sounds: an ERP study

Presenter 7:
 C. Hechler
 Young Adults' Reactions to Infant Crying: Cognitive Performance, Emotional Reactions, and Caregiving Behavior

14.15 – 14.45 Coffee (Lounge)
14.45 – 16.00

Kleine veerzaal

Symposium

Convenor: Roos Hutteman

The Reciprocal Association between Personality Development and Life Experiences across the Life Span

Presenter 1:
O. Laceulle
Stress-Sensitivity and Reciprocal Associations between Stressful Events and Temperament across Adolescence

Presenter 2:
R. Hutteman
The Dynamic Interaction between Parenting Challenges and Parents' Personality Development in Young and Middle Adulthood

Presenter 3:
B. Jeronimus
The Neuroticism Setpoint is Environmentally Embedded

Discussant:
T. Oldehinkel
Chair: R. Hutteman

Pomonazaal 1&2

Symposium

Convenor: Maaïke Zeguers & Anika Bexkens

Mind the gap: Scientist-practitioner projects in developmental psychology

Presenter 1:
A. Bexkens
Risk-taking in adolescents with mild-to-borderline intellectual disability: research and practice

Presenter 2:
T. Dekkers
Risky decision making in behavioral disorders from a scientist practitioner viewpoint

Presenter 3:
M. Zeguers
Reading fluency development in children with dyslexia: A scientist-practitioner point of view

Discussant:
M. van der Molen
Chair: H. Huijzen

Jagerskampzaal

Symposium

Convenor: Maartje Raijmakers & Rooske Franse

Children's knowledge and reasoning about natural phenomena: explicit and tacit knowledge

Presenter 1:
R. Franse
Children's thinking about sinking: how predictions tell a different story than justifications

Presenter 2:
H. Meindertma
Stability and variability in young children's understanding of floating and sinking during a single task session

Presenter 3:
J. van der Graaf
Scientific reasoning abilities in kindergarten. Dynamic Assessment of the Control of Variable Strategy

Discussant:
M. Raijmakers
Chair:
M. Raijmakers

Hoevesteinzaal

Pecha Kucha

Social-emotional and/or interaction

Chair: S. Kunnen

Presenter 1:
N. de Ruiter-Wilcox
Fractal scaling in adolescents' state self-esteem during parent-child

Presenter 2:
H. Endedijk
Cooperation as Predictor of Peer Acceptance in Young Children

Presenter 3:
G.J. Will
How childhood peer acceptance and rejection relate to neural responses to social exclusion during adolescence

Presenter 4:
Y. van de Berg
Developmental Pathways to Peer Status in Middle Childhood

Presenter 5:
B. Guroglu
Friend versus foe? Neural networks of social decision-making in interactions with peers

Presenter 6:
M. Broekhuizen
Effects of Early Child Care Quality on Child Socio-Emotional Outcomes; Does Quantity of Care Matter?

Presenter 7:
E. Hilbrink
The development of vocal turn-timing in infancy: Examining infant and maternal contributions

16.00 – 17.00 Members Meeting (Kleine Veerzaal)

17-00 – 18.30 Poster session with drinks (Terraszaal)

H. Klip
Individual differences in children's perceptions of classroom peer relations

T. van Schijndel
The effect of adult explanation on preschoolers' exploratory behavior in a museum setting

T. van Noorden
Empathy & Bullying: A Social Relations Model Approach

L. Baams
The pace of puberty and adolescent sexuality: the relations between pubertal timing, pubertal tempo and sexual behavior, intention, permissive attitudes

L. Pouwels
Stability of Peer Victimization in Longitudinal Research: A Meta-analysis

J. Maas
Determinants of maternal fetal attachment in women from a community-based sample

M. Schel
The role of the fronto-basal ganglia network in the development of intentional action and inhibition: a combined fMRI and DTI study

S. Knuiman
Features of Fetal Alcohol Spectrum Disorders in children adopted from Poland

E. Brummelman
Briefly Reflecting Upon Unconditional Regard Buffers Children's Selves: A Field Experiment

N. Blankenstein
The role of sex hormones in feedback learning across development – a longitudinal fMRI study

J. Stapel
Infants' ERP Responses When Perceiving Their Own Versus Others' Faces

B. Jansen
Curiosity and discovery learning

I. Defoe
Experimentally Manipulated Peer Influence on Adolescent Risk Taking: The Role of Puberty and Gender

L. Steenis
The validation of the Bayley-III-NL

A. Harrewijn
Family study for profiling psychophysiological endophenotypes in social anxiety disorder

L. Hoekstra
Exploring the Dynamics of Gestures' Role in the Construction of Cognitive Understanding

A. Hofman
The Balance-Scale Task Revisited: A Substantive Psychometric Modeling Approach

C. Junge
Cross-situational word learning from natural utterances

W. Dalenberg
Parent-adolescent conversations about love and sex in relation to adolescents' romantic and sexual experiences: a qualitative diary study

M. de Jong
Is attention-directing behavior of mothers in a play-situation related to toddler's attention skills during eye tracking tasks

H. Endedijk
Development of Interpersonal Coordination During a Joint Drumming Task in Young Children

W. Schot
Does using your environment aid the development of proportional reasoning?

A. Menninga
Language in science and technology lessons

19.00 Dinner (Terraszaal)

Program May 21st

09.00 – 09.30	Registration and coffee (Lounge)		
09.30 – 10.45	<p>Kleine veerzaal</p> <p><u>Symposium</u> Convenor: Laura Dekkers</p> <p>Individual Differences in Adolescent Risk Taking</p> <p>Presenter 1: E. de Water Individual Differences in Temporal Discounting of Monetary and Candy Rewards in Adolescents: An fMRI study</p> <p>Presenter 2: A. van Duijvenvoorde Neural Correlates of Expected Risks and Returns in Children's, Adolescents', and Adults' Risky Choice</p> <p>Presenter 3: L. Dekkers Decision Making Strategies in Adolescents: Individual Differences and Neural Substrates</p> <p>Discussant: H. Huizenga Chair: L. Dekkers</p>	<p>Pomonazaal 1&2</p> <p><u>Symposium</u> Convenor: Patty Leijten</p> <p>How to Modify Youth's Disruptive Behaviour? Novel Approaches and Experimental Evidence</p> <p>Presenter 1: A. Becht Eye-tracking assessment of social-perception biases in boys with behavior disorders</p> <p>Presenter 2: M. van der Molen New interventions for reducing aggressive behavior? Retraining hostile interpretation bias</p> <p>Presenter 3: P. Leijten What good is labelling what's good? Experimental field studies on the effectiveness of labelled and unlabelled praise to reduce disruptive child behavior</p> <p>Discussant: S. Thomaes Chair: P. Leijten</p>	<p>Jagerskampzaal</p> <p><u>Symposium</u> Convenor: Carla Geveke</p> <p>Learning and exploration of science and technology in and through interaction in non-formal learning settings</p> <p>Presenter 1: C. Geveke Teaching and Learning Processes in an Inside and Outside Classroom Program: a Multiple Case Study</p> <p>Presenter 2: M. Guevara-Guerrero How dyads interact during a problem-solving task?</p> <p>Presenter 3: M. Raijmakers An experimental measure of an inquisitive approach</p> <p>Discussant: H. Steenbeek Chair: H. Steenbeek</p>
10.45 – 11.15	Coffee (Lounge)		

11.15 – 12.30	<p>Kleine veerzaal <u>Symposium</u> Convenor: Ashwin Rambaran & Jelle Sijtsema</p> <p>(Re)Cognition of Immoral Behavior in the Adolescent Peer Context: Empirical Findings and Validation</p> <p>Presenter 1: J. Sijtsema Moral disengagement in adolescence: The (ir)relevance of different dimensions</p> <p>Presenter 2: A. Rambaran Friendship selection and influence in bullying: Effects of moral disengagement</p> <p>Presenter 3: B. Oldenburg Recognizing victims of bullying in the classroom: A comparison of individual peer reports and self-reports</p> <p>Discussant: M. Sentse Chair: A. Rambaran</p>	<p>Pomonazaal 1&2 <u>Symposium</u> Convenor: Annelies Janssens</p> <p>Genetic sensitivity to parent, teacher, and peer influences in adolescence</p> <p>Presenter 1: A. Janssens Interaction between dopaminergic VNTRs (DAT1 and DRD4) and parenting behavior on externalizing problems in adolescence</p> <p>Presenter 2: S. de Laet Dopamine genes moderate the effect of teachers on adolescent behavioral engagement and rule breaking behavior</p> <p>Presenter 3: M. Verhagen Interactions between the DRD2, 5-HTTLPR and OXTR genes and environmental factors on the development of loneliness in adolescence</p> <p>Discussant: G. Overbeek Chair: L. Goossens</p>	<p>Jagerskampzaal <u>Pecha Kucha</u> Education & Learning Chair: W. Dalenberg</p> <p>Presenter 1: S. van Vondel The Role of Classroom Interaction in Students' Scientific Reasoning Process</p> <p>Presenter 2: P. Baay Harder, Better, Faster, Stronger: Understanding the "Pro" and "Active" in Proactive Behaviors during School-to-Work Transitions</p> <p>Presenter 3: B. Jansen An investigation of the relation between self-efficacy, experience of success, and the motivation to practice math</p> <p>Presenter 4: C. Junge Distributional learning of visual information in 10-month-old infants</p> <p>Presenter 5: S. van der Steen The limited value of standardized tests to predict learning trajectories in science and technology.</p> <p>Presenter 6: M. van der Gaag Experiences and commitment development on a time scale of weeks</p> <p>Presenter 7: A. Poorthuis A Good Grade Makes my Day: Grades, Adolescents' Daily Levels of School Engagement, and the Role of Peer Context</p>
12.30 – 13.30	Lunch (Terraszaal)		

13.30 – 14.30	Key note speaker Marc Lewis (Kleine Veerzaal)		
14.30-15.00	Coffee/tea (Lounge)		
15.00 – 16.15	Kleine veerzaal	Pomonazaal 1&2	Jagerskampzaal
	<u>Symposium</u> Convenor: Eddie Brummelman & Reine C. Van der Wal	<u>Symposium</u> Convenor: Tamara Schleepen	<u>Symposium</u> Convenor: Henny Bos
	Can a Pat on the Back Feel Like a Slap in the Face? Well- Intended Socialization Practices Can Undermine Children’s Well-Being, Motivation, and Interpersonal Relationships	Working memory development and its underlying factors	Sexual minority youth and new directions in the minority stress model
	Presenter 1: E. Brummelman “That’s Not Just Beautiful— That’s Incredibly Beautiful!”: The Adverse Impact of Inflated Praise on Children With Low Self-Esteem	Presenter 1: I. Friso-van den Bos Effects of a working memory training on kindergartners’ number sense	Presenter 1: L. Baams A “same-sex” relationship: How a romantic relationship can protect same-sex attracted youth from the impact of minority stress
	Presenter 2: R.C. van der Wal Too Special to Forgive	Presenter 2: T. Schleepen Developmental improvements in the use of the semantic grouping strategy: a role for attentional/executive resources?	Presenter 2: D. van Bergen ‘Their Words Cut me Like a Knife’: Coping Responses of Dutch Lesbian, Gay and Bisexual Youth to Stigma
	Presenter 3: S. Thomaes Reminding Secure Relationships: Source of Sorrow or Solace?	Presenter 3: M. Vissers Distractor suppression in service of short-term memory: underlying mechanisms, and changes throughout adulthood	Presenter 3: G. van Beusekom Gender Nonconformity, Homophobic Peer Victimization, & Mental Health among Young Dutch Adolescents
	Discussant: J. Denissen Chair: E. Brummelman	Discussant: F. Donkers Chair: T. Schleepen	Discussant: H. Bos Chair: H. Bos
16.15	End of conference		

Keynote Speaker

May 20th

Empathy development and adolescents' interpersonal and psychosocial functioning

Although adolescence is no longer considered a period of storm and stress, it is a period of rapid biological and psychosocial developmental changes, which have a salient impact on adolescents' individual and relational functioning. The developmental trajectory of antisocial behavior tends to show a peak during middle adolescence, which strikingly coincides with a temporary decrease in parent-child relationship quality and an increase in quality of friendships. These changes have sometimes been attributed to the development of empathy. Empathy is an emotional response evoked by another's affective state, that includes an affective component, empathic concern or the ability to share another's emotional state, and a cognitive component, perspective taking or the ability to understand another's viewpoint and feelings. In this presentation I will present some recent findings on the development of empathy in adolescent boys and girls and the role of empathy in adolescents' relationships with parents, friends and psychosocial adjustment.

11.00-12.00, Kleine Veerzaal
Prof. Dr. Susan Branje



Susan Branje is a full professor at the University of Utrecht. Her topic is "Adolescent development and socialization" (Ontwikkeling en opvoeding in de adolescentie)

Susan received her PhD cum laude at the Radboud University Nijmegen in 2003. Her work generally focuses on understanding the developmental changes in adolescents' relationships with parents, siblings, friends, and romantic partners and the associations with development of adolescent adjustment.

She is also Secretary of the European Association for Research in Adolescence and Associate Editor of the Journal of Early Adolescence.

Some recent publications:

Doornwaard, S. M., Branje, S., Meeus, W. H. J., & Ter Bogt, T. F. M. (2012). Development of adolescents' peer crowd identification in relation to changes in problem behaviors. *Developmental Psychology*, 48, 1366-1380. doi: 10.1037/a0026994.

Keijsers, L., Branje, S., Hawk, S., Schwartz, S., Frijns, T., Koot, H. M., van Lier, P., & Meeus, W. (2012). Forbidden friends as forbidden fruit: Parental supervision of friendships, contact with deviant peers, and adolescent delinquency. *Child Development*, 83, 651-666. DOI: 10.1111/j.1467-8624.2011.01606.x.

<http://www.uu.nl/medewerkers/sbranje>

Keynote Speaker

May 21st

Addiction as Development: How Brains learn Bad Habits

In the scientific literature and popular press, there is ongoing controversy about whether addiction is a disease (e.g., a chronic brain disease) or a choice. Yet both of these perspectives miss the heart of the matter. Addiction is a developmental phenomenon whereby repeated cycles of desire and loss give rise to a narrowed range of goals. These goals are entrenched and their appeal is amplified by the activity of neuromodulators (e.g., dopamine) that enhance synaptic activation and synaptic modification in the striatum, amygdala, midbrain, and prefrontal cortex. This developmental approach to addiction not only helps explain why addicts have such a hard time stopping. It also clarifies the mechanisms by which emotional learning takes place more generally. By attaching emotional significance to goals that continue to capture more attention, we develop a repertoire of cognitive-emotional habits including recurrent emotional interpretations and well-worn strategies of emotion regulation.

13.30-14.30, Kleine Veerzaal
Dr. M.D. Marc Lewis



Marc Lewis is a developmental neuroscientist and professor of developmental psychology, until recently at the University of Toronto (1989 to 2010) and presently at Radboud University Nijmegen in the Netherlands.

On his website Marc Lewis states: My theoretical work has focused on modeling emotional and personality development across childhood and adolescence. I am especially interested in the neurobiological bases of emotion, emotion regulation, and emotional/personality development, including processes of synaptic shaping, synchronization and coherence among neural subsystems, and consolidation of neural networks through recurrent emotional states. In my writing I try to integrate neurobiological and psychological theory and findings. I have also reevaluated some of the assumptions of classical emotion theory based on emotional neurobiology and dynamic systems principles.

Some publications:

Lewis, M.D. (2011). *Memoirs of an Addicted Brain*. Toronto: Doubleday Canada.

Lewis, M.D., & Granic, I. (Eds.) (2000). *Emotion, development, and self-organization: Dynamic systems approaches to emotional development*. New York: Cambridge University Press.

<http://home.oise.utoronto.ca/~mlewis/>

http://en.wikipedia.org/wiki/Marc_David_Lewis

His "popular science" blog at Psychology Today is @AddictedBrain on Twitter.

Symposium

May 20th

13.00-14.15

Kleine veerzaal

Multiple Perspectives on the Associations between Personality Traits and Interpersonal Relationships in Adolescence and Early Adulthood

Discussant: R. Hutteman

In the period from early adolescence into early adulthood, interpersonal relationships change dramatically as peers gradually become the primary source of social support at the expense of parents. How youth deal with this process is thought to be dependent on their personality, which also develops rapidly in this period. Yet, the role of personality traits in interpersonal relationships is relatively understudied. In our symposium, multiple perspectives on personality will be provided as we will not only cover general personality traits (i.e., the Big Five traits of emotional stability, extraversion, openness, agreeableness, and conscientiousness), but also more pathological traits with a specific relevance to interpersonal behavior (i.e., the Dark Triad traits of Narcissism, Machiavellianism, and Psychopathy). Moreover, the three presentations will all focus on a different aspect of the development of interpersonal relationships.

To establish satisfying peer relationships, openly aggressive tendencies need to be refuted in early adolescence. In the first presentation, Theo Klimstra will examine how Dark Triad personality traits are associated with multi-informant ratings (self-reports, teacher-reports, and peer-nominations) of early adolescent aggressive behavior. Second, adolescents need to find out who they are like and who they are unlike. For this purpose, they tend to affiliate with peer crowds (e.g., Jocks, Hiphoppers, Metal-Heads). Alithe van den Akker will discuss the role of Big Five personality traits in adolescent peer-crowd identification, and examine whether peer-crowd affiliation has a lasting impact on personality development into young adulthood. In the end, some youth develop satisfying interpersonal relationships, whereas others develop feelings of loneliness towards peers and/or parents. Eveline Teppers will discuss whether Big Five personality traits predict who is likely to develop feelings of loneliness towards peers and/or parents, and whether such feelings of loneliness also have an impact on personality development. Our discussant Roos Hutteman will comment on the merits and drawbacks of each of the presented studies.

Presentation 1:

The Dark Triad of Personality in Adolescence: Factor-Structure of a Concise Measure and Linkages with Multi-Informant Ratings of Aggression

T. Klimstra

Tilburg University

Studying pathological personality traits can contribute to our understanding of individual differences in antisocial behavior (e.g., aggressive behavior) in the general population. In this regard, the Dark Triad of personality is one of the most commonly used models. It includes the traits of narcissism (inflated self-views maintained by intrapsychic and interpersonal strategies), psychopathy (impulsiveness combined with low empathy), and Machiavellianism (exploitative manipulative interpersonal tendencies). These traits are distinguishable, yet interrelated, and should therefore be studied collectively with one and the same type of measure in order to validly capture their unique effects. Such research is frequently conducted among adults, but less among adolescents. In the present study, Confirmatory Factor Analyses (CFAs) were employed to examine measurement invariance of a concise (i.e., 12-item) Dark Triad measure across gender groups. In addition, we explored unique associations of Dark Triad traits with multi-informant ratings of aggression.

In the present cross-sectional study, 307 adolescents (47.9% girls; Mage = 12.79, SD = 0.78) filled out self-reports on the Dark Triad of personality. In addition, self-reports, teacher-reports and peer-nominations on aggressive behavior were obtained. CFAs provided evidence for full configural and metric invariance, and partial scalar invariance across gender groups. This suggests that results of boys and girls on the concise Dark Triad measure can be compared if latent variables are used. Furthermore, path models showed that psychopathy was a uniquely and positively related to self-reported and teacher-reported direct aggression, and peer-reported indirect aggression. Machiavellianism was uniquely and positively related to self-reported direct aggression and indirect aggression. Narcissism was uniquely and positively related to self-reported indirect aggression.

Our findings underscore the factorial validity of a concise Dark Triad measure among adolescents. Furthermore, Dark Triad traits were important correlates of adolescent aggression, and may partially explain discrepancies between different raters of aggression. For example, Machiavellians admitted to employ indirect aggression, yet this was not observed by their teachers and peers. This suggests that they successfully employ manipulative strategies without others being aware. We therefore argue that Dark Triad traits may not only enhance our understanding of adolescent aggressive behavior, but of adolescent interpersonal behavior in general.

Presentation 2:

Are the Jocks, Hiphoppers, and Metal-heads Allright? Early Adolescent Peer-Crowd Identification and Personality Development Across the Transition into Adulthood

A. van den Akker

University of Amsterdam

This study investigates whether personality determines early adolescent peer-crowd identification, such that children select peer crowds based on their pre-existing personalities, and whether peer-crowds have a socializing effect, such that peer-crowd identification predicts differences in personality development into emerging adulthood. At Time 1, 906 adolescents (Mage=12) reported on their personality and their identification with seven peer-crowds (Elites, Jocks, Brains, Hiphoppers, Nonconformists, Metal-Heads, Normals). Personality was reassessed five times across nine years. Latent Class Analysis revealed four peer-crowd identification classes: A No-Crowd/Normals class (n=440), a Metal-Head class

(n=81), an Off-Mainstream class (n=291), and an Elite/Preppy class (n=94). Multi-Group Latent Growth Curve Modeling revealed no differences in either initial levels or rates of changes for agreeableness and emotional stability. However, the classes differed in initial levels of extraversion, conscientiousness and openness, indicating a selection effect for these personality dimensions. The No-Crowd class was lower on extraversion than the other classes; The Elite/Preppy class was more conscientious than the other classes; The Metal-Head and Off-Mainstream classes were least conscientious, and most open to experience. With regards to personality development across time, the Metal-Head class increased more in extraversion than the other two classes, indicating a potential socializing effect. For conscientiousness, differences dissipated across time: Although the Elite/Preppy class started out as most conscientiousness, they decreased more across early adolescence. Results provide support for selection effects of personality on peer crowds, and limited support for a socialization effect of peer crowds on personality.

Presentation 3:

Loneliness and personality traits during adolescence: Reciprocal influences in different social contexts

E. Teppers

KU Leuven

Adolescent loneliness is related to depression, anxiety, suicide, academic failure, and alcohol or drug use (Perlman & Landor, 1999). Therefore, insight in the predictors of loneliness is of crucial importance. The present study is one of the first to explore how peer-related and parent-related loneliness and the Big Five traits are interrelated over time. Because loneliness changes in accord with shifting developmental demands and maturation, it can be defined as a surface characteristic of personality (Asendorpf & van Aken, 2003). The Big Five traits, however, can be seen as core characteristics of personality that reflect relatively enduring patterns of thoughts, feelings, and behaviors. For the present study, self-report questionnaires on loneliness and the Big Five were completed by 378 adolescents (Mage at T1 = 15.77 years; 37% boys) on all four annual waves. Cross-lagged analysis was conducted to examine the direction of effects between Big Five traits and parent- and peer-related loneliness. Results indicated that initial levels and changes in peer-related loneliness were negatively associated with initial levels and changes in Extraversion, Emotional Stability, and Agreeableness. Cross-paths indicated that higher levels of Extraversion and Emotional Stability and lower levels of Openness were predictive of relatively lower levels of peer-related loneliness. Cross-paths in the inverse direction only reached significance for Extraversion, indicating that higher levels of peer-related loneliness predicted relatively lower levels of Extraversion. For parent-related loneliness, initial levels and changes were negatively associated with initial levels and changes in Agreeableness, Conscientiousness, and Extraversion. Additionally, changes in parent-related loneliness were negatively associated with changes in Emotional Stability. Significant cross-paths indicated that higher levels of Extraversion and lower levels of Openness were predictive of relatively lower levels of parent-related loneliness. Overall, the present study identified general predictors of adolescents' feelings of loneliness (i.e., low Extraversion and high Openness) and one specific predictor for peer-related loneliness (i.e., low Emotional Stability). Peer-related loneliness also predicted Extraversion, suggesting that the linkages between Big Five traits and loneliness are not entirely unidirectional and that core personality traits can be influenced by surface personality traits, such as loneliness. Theoretical implications of these novel findings will be discussed.

Symposium

May 20th

13.00-14.15

Pomonazaal 1&2

Beyond Hypothetical Vignettes: An Examination of Hostile Interpretation Biases in Different Contexts

Discussant: F. Goossens

Interpreting the intentions guiding other people's behavior is an important aspect of children's social development (Feinfield et al., 1999). Children who generally interpret other's intentions as hostile—i.e., who have a biased attribution style—are at risk for the subsequent development of aggressive behavior problems (De Castro et al., 2002). Hostile attributions are often measured by asking children to interpret hypothetical vignettes of ambiguous provocations: Did the peer bump you on purpose or by accident? Yet, interpretational biases related to aggressive behavior potentially affect not only children's interpretations of provocative behavior, but may also affect their tendency to perceive provocative behavior in the first place. This symposium therefore examines whether hostile attribution biases generalize to children's interpretations of others' behavior in different contexts. The first study (Van Dijk, et al.) used an in vivo task to investigate perceptual processes explaining preschoolers' hostile attribution biases. The results showed that children with higher levels of hostile attribution bias were characterized by an increased sensitivity for negative outcomes of social interactions. The second study (Lansu et al.) showed that school-aged children with higher levels of hostile attribution bias were more likely to perceive aggression and bullying in their classmates. Furthermore, the third study (Pouwels et al.) showed that bully-victims perceived more bullying than victims and non-involved children when watching video fragments of ambiguous interactions of humans, animals, and even abstract figures.

The studies in the current symposium show that negatively biased interpretations of children are not limited to hypothetical provocation scenarios. Children with high levels of bias are overly sensitive for negative outcomes of social interactions in an in vivo task (study 1) and perceive more bullying and aggression in their classmates (study 2). Moreover, bully-victims generally perceive more bullying, even in animals and abstract figures (study 3). These findings indicate that aggressive children may have pervasive hostile interpretation biases that generalize over different contexts. The results point to the importance of early social-cognitive interventions to prevent the development of generalized hostile interpretation biases.

Presentation 1:

Hostile Attribution Bias: Learned or Not Unlearned? An In Vivo Study of Age-Related Changes in Young Children's Intent Attributions

A. van Dijk

Utrecht University

It is well-documented that aggressive children tend to have a hostile attribution bias—they often interpret ambiguous provocations as ill-intended (De Castro et al., 2003; Dodge, 1980). Less is known, however, about the development of hostile attribution biases. The present study provides the first empirical investigation of an influential hypothesis on this topic (Dodge, 2006), which suggests that aggressive children did not acquire a hostile attribution bias—rather, they failed to unlearn it. Specifically, this persistent bias hypothesis suggests that hostile attribution biases normatively decrease with age as children develop a theory of mind, and start focusing on the intentions (rather than the outcomes) of other people's behavior (known as the outcome-to-intent shift).

The present study tested this hypothesis, measuring young children's attributions in response to in vivo provocation. Children (N=89) aged 3 to 7 played with 5 different hand puppets in a sticker trading game. The puppets' intentions were manipulated to be positive or negative (i.e., puppets chose an attractive or a plain sticker for the child) and the outcome was manipulated to be positive or negative (i.e., children actually received an attractive or a plain sticker). We measured children's intent attributions by asking how "mean" the puppet was. Responses to 4 trials, using a 2 (intent) by 2 (outcome) within-subjects design, indicated to what extent children based their attributions on intent and outcome information. We measured hostile attribution bias in response to 1 trial with ambiguous intent and a negative outcome. Theory of mind was assessed with standard false belief tasks.

Results partially supported the hypothesized outcome-to-intent shift: With age and theory of mind acquisition, children based their intent attributions more on the puppets' intentions, but not less on outcomes. Importantly, hostile attribution bias was not related to a decreased focus on intentions, nor to theory of mind. Hostile attribution bias was, however, related to an increased focus on negative outcomes. These findings indicate that young children with a hostile attribution bias are not lagging behind in their understanding of others' intentions—rather, they seem to have an increased sensitivity for negative outcomes.

Presentation 2:

The role of own aggression and popularity in hostile biases: the perception of peers' aggression and hostile intentions

T. Lansu

Radboud University

Social Information Processing theory (SIP) (Crick & Doge, 1994) proposes that children's aggression is related to their perception of social situations. Many studies have showed this relation with regard to attributions of hostile intent (Castro, et al., 2002), however in the current study we additionally look into the perception of everyday aggressive behavior in peers. Although this perception is less specific, it can also be seen as an indicator of a negativity bias, and lead to aggressive behavior. As children's popularity is related to the type of aggression they tend to use (popular proactive vs. unpopular reactive; Prinstein & Cillessen, 2003), we also test for popularity as a moderator.

Participants were 366 children from 5th and 6th grade classrooms (49% girls; Mage = 11.07 years, SD = 0.85). Participants' hostile intent attribution bias were measured with 8 vignettes (Fitzgerald & Asher, 1987). Participants also rated each of their classmates on physical aggression, relational aggression, bullying and popularity on a 7-point scale. Mean ratings

given for each aggressive behavior were used as indicators of their perception of aggression in peers, mean ratings received were used as indicators of own aggression and popularity. Results indicated that perceptions of peers' physical aggression, relational aggression and bullying are indeed related to the hostile attribution bias. Both perceived aggression in peers as well as hostile attribution bias proved to be significantly and positively related to children's own aggression, with stronger associations for boys than girls. Moreover, hostile attribution bias was more strongly positively related to own aggression in children with lower levels than higher levels of popularity.

This study shows that negatively biased information processing of aggressive children is not limited to attributions of intent in hypothetical situations, but also generalizes to the perceptions of behavior of their actual classroom peers. It also shows that the link between negative perception bias and own aggression is stronger for boys and unpopular children, stressing that bias does not necessarily have to lead to aggression. Research should further look into the skills and motivations that allow certain children not to act on their biased perceptions.

Presentation 3:

Interpretations of Bullying by Bullies, Victims, and Bully-Victims in Interactions at Different Levels of Abstraction

L. Pouwels

Radboud University

Social Information Processing (SIP) theory proposes that children develop general interpretation styles for future social events based on past social experiences (Crick & Dodge, 1994). Previous research has shown associations between interpretations of social situations and internalizing and externalizing symptoms. The current study investigates whether bullies, victims, bully-victims, and uninvolved children interpret human social interactions differently in terms of bullying. In addition, the current study examined whether children's tendency to interpret bullying in general human interactions generalizes to the interpretation of bullying in non-human or more abstract interactions as well. More specifically, we expected that the effects could be generalized from ambiguous interactions of humans to more abstract interactions of animals and abstract figures.

Participants were 395 children (Grade 4-6) who completed self-report measures of bullying and victimization (Solberg & Olweus, 2003). In addition, we assessed to what extent children interpreted 24 positive, negative, and ambiguous video fragments of interactions between humans, animals, and abstract figures as bullying. After each video fragment, children were asked to rate nine behaviors (including bullying behavior) on a scale ranging from 1 to 100, indicating what happened in the fragment.

Results showed that bully-victims reported more bullying in ambiguous human fragments than victims and uninvolved children. Bullies did not differ from either group. In addition, associations between children's involvement in bullying and interpretations of bullying generalized across levels of abstraction. Bully-victims interpreted more bullying than victims and uninvolved children in ambiguous human, animal and abstract figures interactions. This implies that children's past social experiences might lead to changes in schemas. These schemas may become easily accessible and may therefore not only influence children's interpretations of human interactions, but also their interpretation more abstract non-human interactions. Future research needs to test the generalizability of other SIP biases, such as hostile attributions of intent, and the impact of generalization of SIP biases on children's real life interactions with peers. Findings imply that intervention and prevention programs may target children's distorted interpretations of bullying in order to reduce their risk for the initiation and maintenance of bully-victim behavior.

Symposium

May 20th

13.00-14.15

Jagerskampzaal

Micro-analytical approaches to person x environment interactions

Discussant: L. Keijsers

Understanding variation in how people respond to their environment is pivotal for promoting their social and psychological adjustment (Eisenberg, Fabes, Guthrie, & Reiser, 2000; Luthar, 2006; Zuckerman, 1999). In this symposium we present results on how people differ in their responses to environmental influences depending on personal characteristics such as temperament traits (Slagt et al.), emotional reactivity (Weeland et al.) and depressive symptoms (van Roekel et al.). We approach this topic taking into account not only negative, but also positive environmental influences. Traditionally, the traditional diathesis-stress model (Zuckerman, 1999) emphasizes the disproportionate susceptibility to negative environments of some individuals. Building on this, the differential susceptibility hypothesis highlights the disproportionate susceptibility to both supportive and harsh environments in the same individuals (Belsky, 1997; 2005). Finally, the vantage sensitivity hypothesis emphasizes individual differences in the tendency to benefit from positive features of the environment only (Pluess & Belsky, 2012). These hypotheses are tested in the studies in this symposium. The studies examine, amongst others, how children differ in the extent to which they are affected by both negative and positive feedback (Slagt et al.), how children differ in the extent to which they respond to both negative and positive emotions (Weeland et al.) and how individuals differ in the extent to which they benefit from positive experiences (van Roekel et al.). In doing so, we took a micro approach. While previous studies on person-environment interactions oftentimes used long term, longitudinal studies, what happens in a person's life on a small time scale forms the basis for development over years (Bronfenbrenner & Morris, 1998). We therefore sought to study the detailed processes that might underlie why individuals differ in how the environment shapes their development. By using a within-between subjects experiment (Slagt et al.), and by examining mechanisms of differential susceptibility (Weeland et al.) —both using micro-manipulations of the environment—, and by using an experience sampling method (van Roekel et al.), we hope to contribute to answering the question of why different people respond differently to similar environments.

Presentation 1:

Children's differential susceptibility to parenting: Putting 'for better and for worse' to the test

M. Slagt

Utrecht University

Traditional notions about children's differing responses to rearing experiences usually describe vulnerable children as being disproportionately affected by adverse experiences (the so-called diathesis-stress model); the differential susceptibility hypothesis instead postulates that children vary more generally in their susceptibility to parenting, to both its negative and positive effects (Belsky, 1997, 2005). Moreover, the same children that are most vulnerable to harsh parenting are thought to profit most from supportive parenting ("for better and for worse"). Temperament traits, in particular negative emotionality, have been suggested to mark differences in susceptibility (Belsky & Pluess, 2009).

Experimental examination of differential susceptibility affords the most solid basis for causal inference. However, experimental evidence for one of the core assumptions of the differential susceptibility hypothesis is lacking: Are the children that are most affected by harsh parenting really the same ones that profit most from supportive parenting. We examine this hypothesis, using 192 Dutch children (50% girls) between the ages of four and seven.

Children were admitted to the experiment and randomly assigned to conditions, stratified according to their temperament scores. In each condition, children chose dolls to represent themselves and their parent, and the experimenter narrated the scenarios. In the experimental group, children role-played tasks involving negative feedback from their parent, and tasks involving positive feedback from their parent (i.e. two manipulations). The control group role-played tasks to which no feedback was given. Prior to and after each manipulation child outcomes (emotions, prosocial and antisocial behavior) were assessed, using a combination of self-reports and behavioral tasks. Results will be presented on whether more susceptible children (those higher on negative emotionality), compared to less susceptible children, react more strongly to positive and negative feedback within role plays, as reflected in more pronounced changes in emotions, prosocial behavior and antisocial behavior. These changes should be smallest in a control group without feedback. This would offer pioneering experimental evidence that the same children that respond most strongly to negative changes in their environment also respond most strongly to positive changes in their environment.

Presentation 2:

Differential Susceptibility to parenting in the Development of Externalizing Behavior: Emotional Reactivity as Explanatory Mechanism

J. Weeland

Utrecht University

Not all children seem to be equally affected by parenting practices. That certain person characteristics are able to moderate parenting effects has been shown by research on Temperament \times Parenting interactions (e.g., Rothbart & Bates, 2006) as well as by research on Gene \times Environment interactions (e.g., Caspi et al., 2002). However, one of the most important questions that remains is how these Person \times Environment interactions work in predicting differential developmental outcomes (i.e., explanatory mechanisms). A possible mechanism is emotional reactivity (e.g., Davies & Cicchetti, 2013). Children high on emotional reactivity might be more sensitive to both negative and positive emotions, causing them to be more susceptible to parenting behavior in a "for better and for worse" manner (i.e., differential susceptibility). For example, highly reactive children might more easily take over negative emotions associated with harsh parenting behavior, resulting in anger and irritability associated with more externalizing behaviors.

This emotional reactivity hypothesis will be tested using an experiment in which children aged 7-12 (N = 450) were randomly assigned to different conditions (e.g., happy, sad, or neutral) and briefly exposed to a combination of dynamic emotional stimuli (Van der Schalk, Hawk, Fischer, & Doosje, 2011). Children's physiological reactions to these stimuli were measured via facial electromyography (fEMG, i.e., the zygomaticus major and corrugator supercilii to index positive and negative facial affect, respectively). Also, affective reactions to the stimuli were measured through self-report. Subsequently, children's aggression and social behavior was measured via three behavioral tasks (i.e., verbal aggression, vandalism, and sharing) as well as parent report. Before the experiment, parents completed questionnaires on parenting, SES, temperament, and child behavior. The outcomes of analyses on these data –currently in progress- will be presented. We expect highly reactive children to show more aggressive and less prosocial behavior when parents report low levels of warmth, but less aggressive and more prosocial behavior when parents report high levels of warmth, compared to children low on reactivity. These findings would show that emotional reactivity functions as an underlying mechanisms of Person \times Environment interactions in differential pathways to child psychopathology.

Presentation 3:

Loss of pleasure in daily life: Examining relations with depressive feelings in early adolescents and young adults

E. van Roekel

Groningen University

Although anhedonia (loss of pleasure) is one of the two core symptoms of depression, very little research has examined the relation between depression and experience of pleasure and positive affect (PA) in daily life. Previous research in adults has shown that depressed adults differ from non-depressed adults in the variability and inertia of PA as well as the reactivity to positive events. Depressed adults show higher variability in PA (i.e. large mood shifts, measured by standard deviation; Kuppens et al., 2007) and greater reactivity to positive events (i.e., mood brightening effect; Bylsma, Taylor-Clift, & Rottenberg, 2011). With regard to inertia, results are mixed: Some studies found higher inertia of PA in depressed adults (i.e., slow mood shifts, measured by auto-correlation; Kuppens, Allen, & Sheeber, 2010), whereas other studies found no relation between depression and inertia in PA (Koval et al., 2013; Thompson et al., 2012). With regard to anhedonia, to our knowledge no research has examined relations between trait anhedonia and daily life positive experiences and PA. Previous research has shown that anhedonia experienced during adolescence is a predictor for major depressive disorder during adulthood (Wilcox & Anthony, 2004), which highlights the importance of examining anhedonia in adolescents. Up to now, most research in depressed adolescents has focused on negative affect and negative events. Research on PA in adolescents has shown that depressed adolescents experience lower levels of PA (e.g., Sheeber et al., 2009), but little is known about variability and inertia of PA, and reactivity to positive events.

Hence, the aims of the present study were to examine how depressive symptoms and anhedonia are related to (1) positive experiences in daily life, (2) variability and stability of PA, (3) reactivity to positive experiences, and (4) whether PA elicits positive experiences. To investigate possible developmental differences, we will use two different samples: a sample of early adolescents and a sample of young female adults. In both samples, we used the Experience Sampling Method to measure momentary positive experiences and PA (9 measures \times 6 days in the early adolescent sample; 5 measures \times 14 days in the young adult sample).

Pecha Kucha

May 20th

13.00-14.15

Dorskampzaal

Pregnancy and infancy

Chair: Marijn van Dijk

Presentation 1:

Born moderately preterm; Consequences for behavior and development at toddler age?

M. de Jong

Utrecht University

Moderately preterm children, born between 32 and 36 weeks and six days' gestation, are at an increased risk for long term cognitive and behavior problems. Little is known on the early development of moderately preterm children.

Method: Exclusion criteria were admission to a neonatal intensive care unit, multiple birth, severe congenital malformations, dysmaturity, antenatal alcohol or drug abuse, or chronic use of psychopharmaca by the mother. Participants were 118 moderately preterm and 99 term children born in 2010-2011. At 18 months of age, The Utrecht Tasks of Attention in Toddlers using Eye tracking [UTATE], a test battery consisting of four eye-tracking tasks was used to assess attention capacities. Developmental outcome was assessed at 24-months corrected age with the Bayley-III-NL and behavior problems were assessed at the same age with the Child Behavior Checklist.

Results: At 18 months of age, moderately preterm children scored below term born children on the attention measures. At 24 months of age, moderately preterm children scored below term children on receptive communication skills, based on corrected age. Using chronological age, moderately preterm children scored below term children on cognitive, fine motor, receptive and expressive communication skills. Next to that, internalizing behavior problems were increased in moderately preterm children.

Conclusion: Already at toddler age, moderately preterm children show less attention skills, less receptive communication skills and more internalizing behavior problems than term born peers. These results show that moderately preterm children need attention!

Presentation 2:

Cortisol levels in children of parents with a substance use disorder

B. Evans

VU University Amsterdam

Children of parents with a substance use disorder (CPSUDs) are at increased risk for the development of substance use disorders later in life, and therefore may manifest vulnerability markers for these disorders at a higher level than children from the general population. Our aim was to examine hypothalamic-pituitary-adrenal (HPA) axis activity as a potential vulnerability marker in CPSUDs as compared to healthy controls. We further examined whether having experienced more adverse life events (ALEs) accounted for differences in cortisol levels between CPSUDs and controls.

Methods: 83 CPSUDs were matched to 83 controls on the basis of age, sex and socioeconomic status. Salivary cortisol was assessed at four time points during a normal day and at six time points during a psychosocial stress procedure, during which perceived stress was also measured. We implemented piecewise multilevel growth curve modeling to examine

group differences in diurnal and stress-evoked cortisol levels.

Results: Diurnal cortisol levels of CPSUDs did not differ from those of controls. Only stress-evoked cortisol levels at onset of the experiment were explained by group status, such that CPSUDs exhibited lower cortisol levels at onset of the stress procedure. CPSUDs reported experiencing significantly more ALEs, yet number of ALEs was not related to cortisol levels. CPSUDs furthermore reported less perceived stress than controls at onset of the procedure. Conclusions: HPA axis dysregulation may be a vulnerability marker for substance use disorders, as CPSUDs show blunted activation in anticipation of stress. These blunted cortisol levels were not the result of having experienced more stressful experiences during their lifetimes, thus might reflect an inborn vulnerability to substance use disorders.

Presentation 3:

A Systematic Review on the Association between Prenatal Maternal Cortisol and Child Outcomes

M. Zijlmans

Radboud University (Behavioural Science Institute)

Numerous studies showed a link between maternal prenatal stress and (negative) child outcomes. In these studies, prenatal stress is mostly measured with the use of questionnaires. A frequently proposed underlying mechanism in the link between perceived maternal stress and child outcomes is the heightened concentration of maternal cortisol. In this review, empirical findings on associations between prenatal maternal cortisol concentrations and child outcomes (physical/health outcomes, mental/motor development, psychological/behavioural outcomes, and cortisol outcomes) are summarized. Furthermore, the papers were examined for possible critical gestational periods in which the fetus is more susceptible to maternal cortisol levels.

Method: This review was carried out following the PRISMA guidelines for systematic reviews. The selection process resulted in a total of 30 papers (29 studies) which were published between 2001 and 2012.

Results: The results showed that the number of empirical studies that find significant associations between prenatal maternal cortisol and child outcomes is small. However, the studies that do find significant associations are in the same direction. Higher levels of maternal cortisol during pregnancy are related to worse child outcomes: poorer physical/health outcomes, lower mental/motor development, more psychological/behavioural problems, and higher child cortisol concentrations. Regarding critical gestational periods, no differences in gestational periods were found for the associations between prenatal maternal cortisol and infant physical outcomes (birth weight, gestational age). However, for both infant mental development and child psychological/behavioral problems, most evidence was found when prenatal maternal cortisol was measured during late gestation. In contrast, most of the studies on the association between prenatal maternal cortisol and child cortisol found significant results when maternal cortisol was measured during early/mid-gestation. Conclusions and Discussion: Few associations have been found between prenatal maternal cortisol and child outcomes. However, the studies that did find significant associations show maternal cortisol related to worse child outcomes, and possibly critical gestational periods for different child outcomes. These results will be discussed during the presentation. Suggestions for future research will be provided as well.

Presentation 4:

The Association Between Parental Pre- and Postnatal Bonding and Child Executive Functioning at 2 Years

E. de Cock

Tilburg University

The parental bond (i.e. an affective tie from parent to child) is a component of the parent-child relationship that has not been as frequently studied as for example the attachment relationship from the child's perspective. Previous research has shown that early parenting practices are associated with children's development of executive functioning (Bernier, Carlson, Whipple, 2010). In the present study we examine whether the quality of the pre- and postnatal parental bond is associated with child executive functioning at 2 years.

Participants were 235 mothers, 202 fathers, and their infants from a community-based sample. At 26 weeks of pregnancy parents completed the Antenatal Attachment Scale (Condon, 1993) and at 6 and 24 months postpartum, parents completed the Postnatal Attachment Scale (Condon & Corkindale, 1998; Condon, Corkindale, & Boyce, 2008). Child executive functioning (EF) at 2 years was measured with the Behavior Rating Inventory of Executive Function Preschool version (Gioia, Espy, & Isquith, 2003), assessing five components of EF (Inhibit, Shift, Emotional Control, Working Memory, Plan/Organize).

Preliminary correlation analyses show no significant relations between prenatal bonding and EF. Maternal bonding at 6 months is positively related to all five subcomponents of EF in their children at 2 years (r 's between .17 and .33, p 's<.01). Maternal bonding at 24 months is positively related to their children's scores on Inhibit, Emotional Control, Working Memory, and Plan/Organize (r 's between .20 and .32, p 's<.01) and a trend is found for Shift ($r = .12$, $p = .08$). For fathers, feelings of bonding at 6 months are positively related to their children's Emotional Control ($r=.22$, $p=.002$), but not to the other subscales of EF. Paternal bonding at 24 months is positively associated with their children's scores on Inhibit ($r=.16$, $p=.45$) and Emotional Control ($r=.22$, $p=.003$).

A higher quality of the postnatal, but not prenatal, parental bond is associated with higher levels of aspects of children's executive functioning at 2 years. Associated factors (e.g. level of education of the parents) will be taken into account in further analyses before drawing firm conclusions about the nature of the relation between parental bonding and child executive functioning.

Presentation 5:

Maternal obesity during pregnancy and offspring attention in the first year of life: an auditory ERP study

B.R.H. van de Bergh

Tilburg University

High maternal body mass index (BMI) during pregnancy provides a suboptimal intrauterine environment possibly leading to health and cognitive problems in the offspring. Event-related brain potentials (ERPs) measuring attention in infants may provide a link between this risk factor and the cognitive outcome observed later in life.

Neonates ($n=235$) and 9 month-olds ($n=72$), with mothers with mean prepregnancy (PP)-BMI of 24.82 ($SD=4.57$) and 24.72 ($SD=3.6$), respectively, were presented with sound sequences in which three types of rare (deviant) events (white noise bursts, environmental sounds, and tones delivered too early within the otherwise isochronous sequence, 10% each) were delivered amongst frequent (standard) tones (1000Hz tones, 70%). ERP-amplitudes and peak latencies were analyzed with repeated measures ANCOVA's controlled for infant birth weight.

Results indicated that in both age groups, higher PPBMI was associated with shorter ERP peak latencies for the central positivity in response to the white-noise deviants ($p < .05$). In neonates higher PP-BMI was also associated with higher-amplitude early positive ERP responses to the standard tones ($p < .05$). No other effects of PP-BMI were found for these or the other sounds.

It is concluded that the earlier latencies may reflect faster processing of white-noise sounds. Together with the higher-amplitudes to standard tones results these results suggest that maternal PP-BMI is associated with increased arousability, distractability and/or weaker habituation to auditory stimuli during the first year of life. The modulation of passive attention may affect language and skill learning in young infants. Alterations in dopamine neurotransmission due to metabolic programming by PP-BMI may be a potential underlying mechanism.

Presentation 6:

Maternal mindfulness and anxiety during pregnancy affect infants' neural responses to sounds: an ERP study

M. van den Heuvel

Tilburg University

Maternal anxiety during pregnancy has been consistently shown to negatively affect offspring neurodevelopmental outcomes (e.g. Van den Bergh et al., 2005). However, little is known about the impact of positive maternal traits/states during pregnancy on the offspring. The present study aims to investigate the effects of the mother's mindfulness and anxiety during pregnancy on the infant's neurocognitive functioning. Mothers reported mindfulness using the Freiburg Mindfulness Inventory and anxiety using the Symptom Checklist at ± 20.7 weeks of gestation. Event-related brain potentials (ERPs) were measured from 79 nine-month-olds in an auditory oddball paradigm designed to measure auditory attention - a key aspect of early neurocognitive functioning. The auditory oddball paradigm consisted of 4 types of stimuli: a complex tone of 500Hz base frequency (standard, $p = .7$) delivered with 300ms inter stimulus interval (ISI), the same tone preceded by a shorter (100ms) inter-stimulus interval (ISI-deviant, $p = .1$), white noise ($p = .1$), and novel sounds ($p = .1$). Average peak amplitudes observed at electrodes F3, Fz, F4, C3, Cz, C4, P3, Pz, and P4 were measured for analysis. Two series of repeated-measures ANOVAs were conducted: one with "Mindfulness" and one with "Anxiety" as a continuous predictor. For the ERP-responses elicited by standard sounds, higher maternal mindfulness was associated with lower N250 amplitudes ($p < .01$, $\eta^2 = .097$), whereas higher maternal anxiety was associated with higher N250 amplitudes ($p < .05$, $\eta^2 = .057$). Maternal mindfulness was also positively associated with the P150 amplitude ($p < .01$, $\eta^2 = .130$). These results suggest that infants prenatally exposed to higher levels of maternal mindfulness devote fewer attentional resources to frequently occurring irrelevant sounds. The results show that positive traits and experiences of the mother during pregnancy may also affect the unborn child. Emphasizing the beneficial effects of a positive psychological state during pregnancy may promote healthy behavior in pregnant women

Presentation 7:

Young Adults' Reactions to Infant Crying: Cognitive Performance, Emotional Reactions, and Caregiving Behavior

C. Hechler

Radboud University Nijmegen

Infant crying is a highly salient signal that leads to several reactions in the caregiver. For example, listening to infant crying is related to an increase in negative emotions. These negative emotions are suggested to help ensure a reaction from the caregiver (Zeifman, 2003). Moreover, infant crying has been found to reach a caregiver who is probably not already attending to the infant, but who is instead mentally focused elsewhere (De Pisapia et al., 2013). In this study we assessed, amongst others, both the emotional reactions and the cognitive performance of young childless adults on a cognitive task while listening to crying and other potentially disturbing noises. We also scored the participants' quality of caregiving behavior during an interaction with an unsoothable Infant Simulator Doll (RealCare®Baby). Method: Cognitive visual N Back tasks (Kirchner, 1958) were carried out five times by 120 young adults without children (90 females). Once they were listening to infant crying (low distress), and the other four times they were listening to silence or other potentially disturbing noises. After each N Back task, participants reported their negative and positive emotions. Participants were then taken to a laboratory observation room and asked to take care of an Infant Simulator Doll that was, unknown to the participant, programmed to cry for almost the whole session (15 minutes), without responding to any of the participant's actions. Results: The cognitive performance (i.e., the number of correct trials) and emotional reactions to the five N Back tasks were compared. Participants showed decreased cognitive performance, more negative emotions, and less positive emotions when working under infant crying than under other noises. Also, in every N Back task negative, but not positive emotions, significantly explained variance in the number of correct trials. Observations of the caregiving interaction are being carried out at the moment and the results will be available for the conference presentation.

Conclusions: Negative emotions and cognitive disturbances may be joint processes in adult responses to infant crying, and are apparently not limited to parents. This suggests a possible general human predisposition to care for infants in distress

Symposium

May 20th

14.45-16.00

Kleine veerzaal

The Reciprocal Association between Personality Development and Life Experiences across the Life Span

Discussant: T. Oldehinkel

Research consistently shows that personality is subject to change across the entire lifespan. Longitudinal behavioral genetic studies have found personality development to result from both genetic and environmental influences. However, much needs to be examined with regard to the nature of the environmental sources that influence personality change and with regard to the direction of effects. Is personality change triggered by both positive as well as negative life experiences? Does personality predict the experience of life events, do life events influence personality development, or both? And do the same processes play a role in different life phases? The present symposium brings together a collection of longitudinal studies that explore the antecedents and consequences of personality development across different conditions and age groups. In the first presentation, Odilia Laceulle examines predictors and consequences of temperament change across adolescence. She sheds light on the question as to whether the exposure to stressful events predicts temperament change. In addition, she investigates whether the occurrence of stressful life events can be predicted by adolescents' temperament traits. Moving to a normative life event in older age groups, Roos Hutteman presents a two-study paper on the association between parenting challenges and parental personality development. In Study 1 she examines whether parenting stress influences personality development in young motherhood. In Study 2 she examines this question in parents of adolescent children and investigates to what degree the mastery of parenting challenges plays a role. To investigate whether both positive as well as negative life experiences can affect change in the same personality trait, Bertus Jeronimus examines the longitudinal associations between neuroticism and different experiential factors in adulthood. He investigates whether positive and negative life events, long-term difficulties, and deteriorated or improved life quality are associated with short-term or long-term changes in neuroticism. Finally, Tineke Oldehinkel will provide a general discussion and comment on the strengths and limitations of the presented studies.

Presentation 1:

Stress-Sensitivity and Reciprocal Associations between Stressful Events and Temperament across Adolescence

O. Laceulle

University Medical Center Groningen

The current study aimed to elucidate the longitudinal, bidirectional associations between stressful events and temperament from childhood to late adolescence. Additionally, stress-effect paths (i.e., from stressful events to subsequent temperament traits) were tested for moderation by a cumulative plasticity gene index, pre-natal adversity and by the combination of these two. Data were used from TRAILS, a large population cohort of Dutch adolescents. Temperament traits were assessed at 11, 16 and 19 years. Data of stressful events that occurred between age 0 and 11, between age 11 and 16, and between age 16 and 19 were captured using interviews. The results indicated that although stressful events and temperament traits are associated from childhood to adolescence, the direction of the effects depends on the temperament trait under study. Adolescents who were exposed to more stressful events showed higher subsequent levels of fear and frustration. However, no evidence was found for either fear or frustration predicting subsequent stressful events, providing support for the, often assumed, stress-effect model. The opposite pattern was found for affiliation and shyness, the two traits related to the domain of extraversion. Adolescents who were high on affiliation or low on shyness were more likely to be exposed to subsequent stressful events. Stressful events did not significantly predict either subsequent affiliation or subsequent shyness. Bidirectional effects were found for effortful control, related to the domain of conscientiousness. Exposures to stressful events predicted lower effortful control and vice versa, although paths from effortful control to subsequent stress tended to be stronger than paths from stressful events to effortful control. In addition, correlations between stressful events and temperament were somewhat stronger in individuals high on both plasticity genes and pre-natal adversity than in other individuals. Although these differences were not significant in more conservative analyses, they suggest the importance, as well as the complexity of gene-environment transactions.

Presentation 2:

The Dynamic Interaction between Parenting Challenges and Parents' Personality Development in Young and Middle Adulthood

R. Hutteman

Utrecht University

Having children affects many aspects of people's lives, such as life satisfaction and marital quality. However, relatively little is known about the consequences of having children for parental personality development. Are the challenges that come along with having children associated with parents' personality development? And to what degree does the way that people deal with these challenges play a role? We addressed these questions in two studies by investigating the relationship between parenting challenges and personality development in mothers of new-borns (Study 1, N = 556) and the reciprocal associations between (mastering) parenting challenges and personality development in parents of adolescents (Study 2, N = 548 mothers and 460 fathers). In Study 1, we found the stress of having a newborn baby to be associated with declines in maternal agreeableness, conscientiousness, and emotional stability in young adulthood. To examine whether these results can be generalized to middle adulthood and to fathers, we examined the association between parenting challenges and personality development in midlife parents of adolescent children in Study 2. We found parent-child

conflict to be reciprocally associated with decreases in conscientiousness, and emotional stability. Mastering parenting challenges in the form of high parenting self-efficacy, on the other hand, was found to be associated with increases in agreeableness, conscientiousness, and emotional stability, and vice versa. In sum, our results suggest that mastering the challenges associated with the social role of parenthood is one of the mechanisms underlying personality development in young and middle adulthood.

Presentation 3:

The Neuroticism Setpoint is Environmentally Embedded

B. Jeronimus

University Medical Center Groningen

High neuroticism predicts psychopathology and physical health problems. About half of the variance in neuroticism is explained by non-genetic factors, including life experiences. Conversely, neuroticism also predicts experiences. With this study we aimed to quantify the reciprocal causation between neuroticism and different experiential factors, and to gauge the magnitude and persistence of these associations. To do so, we measured positive and negative life events, long-term difficulties, and deteriorated or improved life quality. This longitudinal cohort study included five assessment waves over sixteen years in a random sample of 296 Dutch subjects (47% women) with a mean age of 34 (SD=12, range 16-63) years. Neuroticism was assessed with the Amsterdam Biographic Questionnaire (ABV). A variety of measures assessed life experiences, including the interview-based Life Event and Difficulty Schedule (LEDS). We fit structural-equation models in Mplus. Results showed that neuroticism consistently predicted negative experiences, diminished life quality, and long-term difficulties, yet effects on positive experiences were variable. Long-term difficulties and deteriorated life quality each predicted small but persistent increases, while improved life quality predicted small but persistent decreases in neuroticism. This suggests a setpoint change in neuroticism. Life-event aggregates showed no persistent effects on the neuroticism setpoint. In sum, neuroticism and experiential factors showed persistent, bidirectional associations. Experience-driven changes in neuroticism lasted over a decade. Results support the corresponsive principle (reciprocal causation), suggesting a mixed model of change in neuroticism that distinguishes temporary changes in neuroticism from persistent changes in an individual's neuroticism setpoint.

Symposium

May 20th

14.45-16.00

Pomonazaal 1&2

Mind the gap: Scientist-practitioner projects in developmental psychology

Discussant: M. van der Molen

Developmental psychologists in research and clinical practice often focus on similar clinical populations, for example children with mild intellectual disabilities, behavioral disorders such as ADHD or learning disabilities. Nevertheless, large differences exist between researchers and practitioners with respect to their knowledge base, methods and focus. Researchers generally study common characteristics of clinical groups, include patients with singular, mild forms of disorders and approach all children in an identical, standardised and protocolled way. They base decisions on rigid criteria and validated measures and focus on narrowly defined patient responses to questionnaires or highly controlled test situations. Practitioners on the other hand, mostly work with individual children who often experience complex and severe difficulties at different levels of functioning. They base decisions on clinical judgements and best practice, adapt their approach to the specific characteristics, abilities, difficulties and personality aspects of the child and focus on overall functioning in daily life. Although psychologists from both research and practice acknowledge that knowledge and outcomes from both approaches are complementary, and that clinical populations would benefit greatly from this integration, exchange of ideas and findings between research and practice is minimal and misunderstanding and criticism often occur (Kazdin, 2008).

In an attempt to narrow the gap between research and practice, psychologists from universities and clinical care institutions have recently established Scientist-practitioner projects. In these projects, PhD-students conduct research aimed at clinically relevant questions, and combine this research with work in clinical practice and a postmaster clinical training track. In the present symposium, three scientist-practitioners will present their projects, focussing on children with mild intellectual disability, behavior disorders and dyslexia respectively. The speakers will discuss how clinical practice may guide formulation of relevant research questions and will indicate how research outcomes contribute to clinical care. The discussion will be led by Mariet van der Molen, winner of the Didactief bokaal for best integration of research and educational practice.

Presentation 1:

Risk-taking in adolescents with mild-to-borderline intellectual disability: research and practice

A. Bexkens

Universiteit Leiden

An optimal integration of scientific methods and clinical knowledge may benefit both fields. Application of scientific methods of observation, hypothesis formulation and hypothesis testing to the clinical process contributes to efficient, structured and thorough diagnostic assessment, treatment planning and treatment evaluation. Vice versa, applications of methods commonly used in clinical practice, such as close observation and analysis of the individual, extensive hands-on experience with disorder phenotypes and heterogeneity in symptomology, benefits research, as it highlights relevant research questions and often generates alternative explanations for unexpected findings. The present scientist-practitioner project had two aims: 1) develop fundamental knowledge about risk-taking in adolescents with mild-to-borderline intellectual disability using experimental research and 2) bridge the gap between science and practice in this area. Unfortunately the gap between science and practice in the mild-intellectual-disability field is quite large. On the one hand the population has not been extensively studied, resulting in a lack of empirical knowledge and topics that have been studied are not always easily applicable to practice. On the other hand, practitioners working with these populations have developed a large clinical knowledge base, which is also easily lost when individual practitioners move out of the field. The studies conducted during this project showed that adolescents with mild to borderline intellectual disability experience inhibition problems, cognitive decision-making difficulties and an increased susceptibility to peer-influence during risk-taking. Unexpectedly, adolescents with mild-to-borderline intellectual disability that also had externalizing psychopathology were less impaired in several measures than adolescents that only had mild-to-borderline intellectual disability. The scientific and clinical relevance of these findings will be discussed.

Presentation 2:

Risky decision making in behavioral disorders from a scientist practitioner viewpoint

T. Dekkers

Universiteit van Amsterdam

Risky decision making in daily life is typically more frequent in individuals with behavioral disorders compared to individuals without such disorders. For example, behavioral disorders are associated with elevated levels of risky driving, unsafe sex and substance abuse. Underlying decision making processes are often measured using laboratory gambling tasks. However, results from controlled laboratory studies on decision making deficits in behavioral disorders are inconsistent, probably because of between study differences in 1) type of behavioral disorder, 2) age groups and 3) task characteristics. In the first part of the talk, I therefore present the results of a meta-regression study that investigated the influences of these three moderating effects. We 1) included four different DSM-IV disorders, i.e. Attention Deficit Hyperactivity Disorder (ADHD), Oppositional Defiant Disorder (ODD), Conduct Disorder (CD), and Antisocial Personality Disorder (ASPD); 2) included studies in both children, adolescents, and adults, and 3) took several task characteristics into account. In the second part of this talk I will elaborate on how this meta-regression study is the starting point of a scientist practitioner collaboration between University of Amsterdam and De Bascule, in which a PhD project is combined with a clinical training track (“GZ opleiding”). The main focus of this project will be decision making in adolescents with ADHD. After

capturing potential decision making deficits in this group, an intervention will be designed to improve suboptimal decision making. Possible targets of these intervention are learning to focus on losses instead of gains, retraining automatic approach tendencies towards risk, training to switch strategies after unexpected positive outcomes and instructing to reflect upon strategies. By developing interventions for adolescents with ADHD an alternative will be offered for pharmacological treatment, which is only helpful on short term and does not lead to structural behavioral changes.

Presentation 3:

Reading fluency development in children with dyslexia: A scientist-practitioner point of view

M. Zeguers

Universiteit van Amsterdam

Children with dyslexia experience severe problems in reading. Since this poses a major handicap in our literate society, reading disorders have received considerable attention from psychologists in both research and practice. Strikingly, whereas researchers have focused primarily on reading accuracy, practitioners experience that, in the transparent Dutch orthography, dyslexic children struggle most with achieving fluency in reading. In addition, practitioners notice that many dyslexic children suffer from emotional problems, including low self-esteem, uncertainty and worrying. However, research on the nature and influences of these emotional correlates is thus far scarce. Therefore, the present scientist-practitioner project aims at two main questions: 1) How does the automaticity of phoneme-grapheme correspondences, which is assumed to underlie reading fluency, develop in dyslexic and typical reading children? And 2) Do emotional problems exacerbate dyslexics' reading dysfluency?

With respect to the first question, we present results from a masked priming experiment in which we studied how phonological and graphemic codes are accessed and integrated during the lexical access phase of visual word recognition. In answer to the second question, we discuss data from a diffusion model, exploring the cognitive and emotional factors underlying dysfluent word recognition. We will discuss the implications for scientific theories of dyslexia as well as for treatment of children with dyslexia in clinical practice.

Symposium

May 20th

14.45-16.00

Jagerskampzaal

*Children's knowledge and reasoning about natural phenomena:
explicit and tacit knowledge*

Discussant: M. Raijmakers

Natural phenomena surround us our entire life. No wonder that we learn about them and that young children show some knowledge about natural phenomena. However, measuring children's knowledge and skills in science remains subject of hot debates. In this symposium we study children's knowledge and skills introducing innovative ways of measurement. One of the overarching discussion questions is what the relation is between their explicit and implicit knowledge. Explicit knowledge is measured by children giving explanations of what they know or do, In contrast, if we administer children's predictions and experiments, knowledge could also be implicit.

The current symposium consists of three contributions: Rooske Franse (UvA) discusses a study about floating and sinking where abstract knowledge is contrasted with factual knowledge and predictions are contrasted with explanations. She concludes that children's knowledge as shown by their predictions is more advanced than their explanations. Heidi Meindertma (RUG) studied children's reasoning about floating and sinking on a micro-time-scale. The aim of this paper is to study the process of children's understanding of floating and sinking during a single task session. They show the importance of intra-individual variability during one task session and reveal that children's experiments were not related to changes in children's explanations. Joep van der Graaf (KUN) studied preschoolers skills to conduct informative experiments with a Controls of Variable Strategy. He and his colleagues developed a dynamic measure for CVS that proved to be reliable and valid. The study shows that preschooler's experimentation skills are already strikingly developed.

Presentation 1:

Children's thinking about sinking: how predictions tell a different story than justifications.

R. Franse

University of Amsterdam

Where it comes to primary school science education, the importance of building on children's prior knowledge is widely acknowledged. But what children actually know about frequently addressed topics, such as floating and sinking, is less clear and mainly studied by verbal explanations.

A major source of information for children this age is their own experience with the phenomenon, by swimming, by throwing things into the water, and by observing floating objects like boats in the river. In interaction with others, parents, teachers, or by observing media children might receive more abstract, explicit information in addition. Different sources of information might lead to a prior knowledge with different characteristics. It can be a mixture of implicit knowledge, (having intuitions about buoyancy) or factual knowledge as "boats float unless there is a hole in it", and of abstract knowledge "small heavy things sink". From the category learning literature, we know that different types of knowledge might be formed during one task and may coexist while the task progresses (Johansen & Palmeri, 2002): explicit knowledge that can be reported by verbal communication and implicit knowledge that can be used to make predictions. We hypothesize that different types of (naïve) knowledge might coexist for domains in science as well.

In our current study we systematically tested children's knowledge on floating and sinking with a large number of objects. The study started with non-verbal tasks in which children (n=139; 4 – 12 years; 76 boys) were asked to predict buoyancy of different types of objects, among abstract materials and figurative objects, such as a toy boat. After the prediction tasks children were asked to justify their choices in a structured interview.

Mathematical modeling of the data revealed that children were highly coherent in predicting buoyancy of objects and blocks and most children integrated volume and mass in their predictions. Verbal communication of their knowledge about floating and sinking was less advanced, and only weakly related to age.

Presentation 2:

Stability and variability in young children's understanding of floating and sinking during one single task session

H. Meindertsma

University of Groningen

Intra-individual variability is a key component in explaining children's development and learning. Studying this type of variability on the micro-timescale can help us understand real-time constructive processes and the subsequent long-term development. The aim of this paper is to study the process of children's understanding of floating and sinking during a single task session. Thirty-eight kindergartners were asked to explain the floating or sinking of fourteen different objects. The results show that the majority of children showed a high degree of intra-individual variability. In general, most children had a decrease in variability of both content and complexity of explanations during one task session and stabilized in both complexity and content towards the end of the task. The analyses indicated that hypothesis testing was not related to changes in children's explanations. These results can be the starting point for further research about change on different, nested, timescales.

Presentation 3:

Scientific reasoning abilities in kindergarten. Dynamic Assessment of the Control of Variable Strategy

J. van der Graaf

Radboud University

We examined whether kindergartners are able to construct unconfounded experiments and whether this can be measured reliably. Forty-five children aged four to six years old were tested on their use of the Control of Variables Strategy (CVS), which is part of scientific reasoning. The ramp task introduced by Chen and Klahr (1999) was adapted to be able to dynamically assess the use of CVS. Feedback was given when the response was incorrect. In this task, children designed experiments in which two ramps had to be set up similarly, but with differing dependent variables. For example one can investigate the effect of the ball by placing a heavy ball on one ramp and a light one on the other, while controlling all other variables. The new task consisted of four levels, increasing in difficulty (i.e. more variables to control). Mokken scale analysis (Mokken, 1971) revealed that the dynamic assessment of CVS was valid and reliable. Children could design multivariable experiments themselves. Forty participants designed at least one experiment correctly with two variables and 21 participants designed at least one experiment correctly with three variables. They could be differentiated on CVS use per level and in total. The levels were ordered correctly, indicating that they indeed increased in difficulty. Performance was positively related to age. Finally, no significant difference was found on CVS use between girls and boys. These results suggest that young children indeed can construct unconfounded experiments, which can be tested with dynamic CVS assessment.

Pecha Kucha

May 20th

14.45-16.00

Dorskampzaal

Social-emotional and/or interaction

Chair: Saskia Kunnen

Presentation 1:

Fractal scaling in adolescents' state self-esteem during parent-child

N. de Ruiter-Wilcox

University of Groningen

Self-esteem is generally thought to have a trait characteristic and a state characteristic, where state self-esteem is characterized by a relatively high level of variability. Although the size of state self-esteem variability has been recognized as an important characteristic of self-esteem, its temporal structure has hardly received any attention from researchers. This is because it is traditionally assumed that state self-esteem reflects the underlying trait self-esteem level plus fleeting contextual factors. The underlying assumption, therefore, is that state self-esteem variability is randomly distributed around a true score of trait self-esteem. This assumption is also reflected in the common methodological choice to average state self-esteem measures across time in order to attain information about the average level of trait self-esteem, or the stability of trait self-esteem. In this presentation, we demonstrate that the temporal structure of state self-esteem variability is not random, and instead, that it contains important information about the underlying process.

State self-esteem was studied for $N = 13$ adolescents (M age = 13.3) in the context of parent-child interactions. Interactions were filmed and self-esteem related emotions and behavior were coded afterwards for the adolescents. From this, state self-esteem time series were created for each adolescent. Detrended Fluctuation Analysis (DFA) was then applied to each state self-esteem time series. DFA analyzes the fluctuation of dynamics across time, quantifying the degree of randomness (on a scale of 1.1 to 1.5), where Fractal Dimension (FD) = 1.2 indicates non-randomness in the form of fractal scaling (i.e. $1/f$ noise).

We found that each time series exhibited $1/f$ noise (i.e. fractals) (M FD = 1.29, $SD = 0.03$), which differ significantly from random variability ($t(12) = -13.38$, $p < 0.00$). This finding shows that information regarding the temporal structure of state self-esteem variability has been unnecessarily ignored, as variability is not random. Moreover, we found that FD levels correlated negatively with adolescents' trait level of self-reported autonomy ($r = -0.57$, $p < 0.00$), suggesting that more temporal structure of state self-esteem corresponds with adolescents' perception of self as more autonomous. These results are discussed in the context of the meaning of fractals.

Presentation 2:

Cooperation as Predictor of Peer Acceptance in Young Children

H. Endedijk

Radboud University

It is important to detect early manifestations of peer acceptance, as peer acceptance is highly stable and has implications for children's development. Preschool is the youngest age at which peer relations research can be conducted, but there are multiple situations in which younger children cooperate with peers. For older children, we know that both the success of

their interaction as well as their interactive behaviors are important for their peer acceptance. Cooperation in early childhood could therefore be an important predictor of preschool peer acceptance. However, the link between cooperation in early childhood and later peer relations has not yet been examined.

Participants were 180 children who were followed longitudinally. Cooperation was assessed in a dyadic cooperation task (see Figure 1) at three time points at 28, 36, and 44 months. At each age, children had a different same-sex dyadic partner. Task success and interactive behaviors (both affiliative and antagonistic behaviors) were assessed. At 52 months, peer acceptance was measured through sociometric ratings of classmates (N=3214, 4- to 6-year-olds) and preschool teachers by means of a questionnaire (N=128).

The results showed that cooperation developed over age: Children became more successful, showed more affiliative behaviors, and less antagonistic behaviors. Interestingly, children varied in their relative performance across time points. For example, the most successful children of all 28-month-olds were not amongst the most successful children at 36 and 44 months. This finding will be discussed in light of the dyadic setup of the cooperation task. Children's average success rate and frequency of affiliative behaviors were not related to their peer acceptance at 52 months, but their antagonistic behaviors were: The more antagonistic behaviors children showed across the three time points, the less they were accepted by their peers (both according to their peers and teacher). The role of antagonistic behaviors in early childhood will be discussed to interpret this finding.

The present findings add to our knowledge on early manifestations of later social competence in interactions with peers. The results emphasize the importance of early childhood cooperation skills for peer acceptance in preschool.

Presentation 3:

How childhood peer acceptance and rejection relate to neural responses to social exclusion during adolescence

GJ. Will

Leiden University

This functional Magnetic Resonance Imaging (fMRI) study investigated neural responses to social exclusion in adolescents (age 12-15) who either experienced chronic acceptance (n = 27) or rejection (n = 19) by their peers during childhood (age 6-12). After first being included and then excluded in a virtual ball-tossing game (Cyberball) by anonymous peers, participants reported feeling distressed; independent of experienced acceptance or rejection during childhood. Neuroimaging results showed that across the sample social exclusion was associated with increased activity in brain regions associated with processing affect and emotion regulation, such as ventral anterior cingulate cortex (ACC), subgenual anterior cingulate cortex/striatum and ventrolateral prefrontal cortex (PFC). Chronically rejected adolescents showed: 1) increased activation in the pre-supplementary motor area/dorsal ACC and anterior PFC when they did not receive the ball during a social interaction in which they were included, suggesting a hypersensitivity to minimal cues of rejection; and 2) decreased activity in the anterior insula during a social interaction in which they were excluded, suggesting blunted emotional processing of social exclusion. Taken together, our results show that a brief episode of social exclusion is highly distressing for adolescents and that childhood peer relations are associated with differential neural processing of social exclusion in adolescence.

Presentation 4:

Developmental Pathways to Peer Status in Middle Childhood

Y. van de Berg

Radboud University

Although the behavioral profiles and consequences of peer status are increasingly being documented, little research has focused on the developmental precursors of peer status (Cillessen, 2011). In the current longitudinal study, we take one of the first steps by examining how the quality of the parent-child interaction (assessed at age 1) and children's personality (assessed at age 5 on the personality dimensions of ego-resiliency and ego-control) can promote peer status (assessed at age 9). It was expected that higher quality interactions with parents would foster children's ego-resiliency (capacity for resourceful adaptation to changing situational demands, particularly in stressful situations) and ego-control (capacity for flexible management of impulses), and that these capacity would in turn positively contribute to their peer status.

Participants were 129 children (52% boys) and their primary caregivers from the Nijmegen Longitudinal Study on Infant and Child Development (NLS). Three waves of data were used to address the research questions. At age 1 (wave 1), videotaped parent-child interactions were rated on nine 7-point scales; factor analysis yielded two interaction factors: Effective guidance and Negativity. At age 5 (wave 3), children's ego-resiliency and ego-control were measured using a Dutch translation of the California Child Q-set (Block & Block, 1980; Van Lieshout & Haselager, 1994). At age 9 (wave 5), children's social status (preference and popularity) was measured using peer nomination methods.

To test the best fitting longitudinal model we estimated a sequence of path models, using maximum likelihood estimation. All models were two-group models with girls and boys as separate groups to test for gender differences. The final model is presented in Figure 1. Results showed that more positive parent-child interactions (higher scores on effective guidance) at age 1 were predictive of ego-resiliency, but not of ego-control at age 5. In contrast, negative parent-child interactions predicted ego-undercontrol but not ego-resiliency. In turn, ego-resiliency positively predicted both forms of peer status for both boys and girls, whereas ego-control was only predictive of peer popularity and only among boys. These findings suggest that early experiences within the family are of importance for children's social functioning in the peer group.

Presentation 5:

Friend versus foe? Neural networks of social decision-making in interactions with peers

B. Guroglu

Leiden

Even though most of our daily social interactions are with people we know, the majority of studies on the neural mechanisms of social decision-making have focused on interactions with anonymous others. We investigated the neural networks associated with fairness-related decision-making in social interactions with personally familiar people in a group of adolescents (M age = 14, N = 49). The current study formed the eighth wave of a longitudinal study where the participants have been assessed since the age of 15 months. Participants played three economic decision-making games where they could choose to distribute money in an equal or an unequal fashion between themselves and another player. Participants played these games with four different groups of interaction partners: liked classmates (friends), disliked classmates (antagonists), neutral classmates, and unfamiliar peers. Behavioral results showed that participants preferred an equal distribution of coins to distributions of inequity

across the games. Participants were more likely to share equally with friends than with antagonists, even when they had to give up rewards to do so. Neuroimaging analyses will focus on the social brain network and particularly examine the involvement of mentalizing regions (e.g., the medial prefrontal cortex, temporoparietal junction) and regulatory regions (e.g., ventrolateral and dorsolateral prefrontal cortex) during fairness-related decision-making. Our analyses will aim to particularly focus on brain regions that might be differentially involved in decision-making in interactions with friends versus antagonists. Finally, we will examine the role of psychosocial functioning in early childhood in neural patterns involved in social decision-making in adolescence.

Presentation 6:

Effects of Early Child Care Quality on Child Socio-Emotional Outcomes; Does Quantity of Care Matter?

M. Broekhuizen

Utrecht University

Whereas high quantities of experienced child care have been linked to higher levels of behavior problems (e.g., Loeb et al., 2007; NICHD ECCRN, 2003, 2006), other studies have found that high quality child care is related to more social competence and fewer behavior problems (Burchinal et al., 2008; Mashburn et al., 2008). These negative effects of child care quantity, but positive effects of child care quality, raise questions about possible combined effects of child care quantity and quality. The current study was designed to examine within the Netherlands, a country with high variation in center-based child care quantity, whether child care quality interacts with child care quantity when predicting both parent and teacher-reports of child internalizing, externalizing and prosocial behavior one year later. To investigate this question, we used first (age 2) and second (age 3) wave data of the children in center-based child care from the longitudinal cohort-study pre-COOL (n = 375). Emotional and behavioral support is assessed with live-observations using the CLASS-Toddler (La Paro, Hamre, & Pianta, 2011), and both teachers and parents reported on child internalizing, externalizing (BITSEA), and prosocial (SDQ) behavior. Child care quantity varied from one to five days (M = 2.3).

Series of multilevel models for all teacher-reported outcomes simultaneously and for all parent-reported outcomes simultaneously showed that there were no longitudinal main effects of child care quantity on both teacher and parent reports of all socio-emotional outcome measures. However, high levels of Emotional and Behavioral Support in child care were related to more teacher-rated prosocial behavior one year later (age 3). Furthermore, we found a cross-level interaction for mother-reported externalizing behavior at age 3. Region of significance analyses showed that when children spent >3 days in child care, high levels of Emotional and Behavioral Support were related to less externalizing problems at age 3. This study stresses the importance of considering combined effects of child care quantity and quality for understanding children's socio-emotional development. Intervention strategies and policies can benefit from this knowledge by not posing extensive child care as a risk factor, but as an opportunity to strengthen child development.

Presentation 7:

The development of vocal turn-timing in infancy: Examining infant and maternal contributions

E. Hilbrink

Max Planck institute for Psycholinguistics

To develop into fully competent communicators infants need to learn to take turns in communicative exchanges in a timely fashion. Turn-transition in adult conversation is remarkably precise, with a median close to zero milliseconds and the vast majority of turn transitions are characterized by a minimal-gap-minimal-overlap timing pattern (Stivers et al., 2009). Furthermore, the Interaction Engine Hypothesis predicts that infants begin to master interactive skills, like turn-timing, early and independently from their linguistic skills (Levinson, 2006). However, the development of infants' turn-timing skills is not yet well understood and debate exists about whether infants actively contribute to the turn-taking (e.g. Elias, Heyes & Broerse, 1986; Ginsburg & Kilbourne, 1988; Rutter & Durkin, 1987). The aim of the present study was to assess the development of turn-taking skills during infancy and the role of maternal scaffolding and infants' own contributions to this developmental pattern. We analyzed video recordings of 12 mother-infant dyads in 10-minute free-play interactions longitudinally at 3-, 4-, 5-, 12-, and 18 months.

Findings indicate that infants gradually become more competent turn-takers as evidenced by a decrease around 5 months in turns produced in overlap and a decrease in onset times. In addition, around the time infants start to produce their first words timing of turns temporarily slows down. Furthermore, the decrease in overlapping vocalizations is unlikely to be due to the mother allowing her infant more time to respond: Mothers did not increase the pauses between their turns, nor did they change the number of utterances they produced. It therefore seems likely that infants, from early on, play an active role in vocal turn-taking exchanges with their mothers and in the developmental changes observed in these interactions. In addition, a possible explanation for the slowing down of turn-timing around 12 months could be that infants need more processing time when starting to produce their first words which slows them down. Taken together these findings support the idea that the ability to appropriately time turns in social interaction is realized early in development, before and independent of language.

Symposium

May 21st

9.30-10.45

Kleine veerzaal

Individual Differences in Adolescent Risk Taking

Discussant: H. Huizenga

Adolescence is often conceptualized as a period of increased risk taking behaviour. Several models have been proposed to account for the adolescent peak in risk taking, differentially emphasizing the role of a maturational imbalance between neural structures involved in affective processing and cognitive control, hormonal changes, and social factors like a shift in the focus on parents to peers. Although increased risk taking behaviour is often conceptualized as a hallmark of adolescence, several controlled experimental studies failed to observe the adolescent peak in risk taking and recently theorists point to the fact that not all adolescents seem to engage in more reckless behaviour.

In this symposium we bundle studies that underscore the importance of individual differences, both in risk taking behaviour as well as in its neural correlates. Specifically, in the first presentation, Erik de Water (Radboud University Nijmegen) focuses on impulsivity—which is proposed to drive risk taking behaviour. By combining behavioural and neural data, he argues that impulsive behaviour is domain specific and that individual differences in impulsivity are associated with differential recruitment of neural structures. In the second presentation, Anna van Duijvenvoorde (Leiden University) points to the relevance of formal statistical modelling. She discusses the decomposition of risky choice by the ‘risk-return model’. By applying this model to the analysis of behavioural and neural data, she is able to dissociate developmental versus individual differences in risk taking.

In the third presentation, Laura Dekkers (University of Amsterdam) focuses on a different statistical modelling technique; Latent Class Analysis (LCA). She shows how LCA enables to elucidate individual differences in decision making strategies and associated neural correlates. In the final presentation, Hilde Huizenga (University of Amsterdam) discusses the implications of these individual differences for theoretical models on adolescent risk taking.

Presentation 1:

Individual Differences in Temporal Discounting of Monetary and Candy Rewards in Adolescents: An fMRI study

E. de Water

Radboud University Nijmegen

Impulsivity is often considered to be a hallmark of adolescence, even though there are large individual differences in impulsive behaviour in adolescents. Temporal discounting (TD) tasks capture one component of impulsivity; the preference for immediate rewards. TD refers to the decrease in subjective value of a reward when the delay to that reward increases. Prior studies have shown that TD is domain-specific, in that primary rewards (e.g., juice and food) are discounted more steeply than monetary rewards. The goal of the present study was to examine the neural mechanisms underlying individual differences in TD in adolescents, using both monetary and candy rewards.

Adolescents aged 12-16 completed a monetary and candy TD task in a counterbalanced order, while being scanned with fMRI. In both tasks, participants made repeated choices between receiving a smaller reward (2-8 euro's or units of their favorite type of candy) today, or receiving a larger reward (10 euro's or candy units) after a variable delay (2, 14, 30, 90, or 180 days). Preliminary findings based on the first 29 participants (11 boys) indicate that while discounting of monetary and candy rewards is highly correlated ($r = .74$), candy rewards are discounted significantly more steeply than monetary rewards.

We are currently investigating the neural mechanisms underlying individual differences in discounting of monetary and candy rewards. Specifically, we are testing whether activation in reward-valuation areas (e.g., ventromedial prefrontal cortex, ventral striatum) and self-control areas (e.g., lateral prefrontal cortex, posterior parietal cortex) is similar for both types of rewards, and whether differential activity in these brain areas can predict individual differences in TD.

Presentation 2:

Neural Correlates of Expected Risks and Returns in Children's, Adolescents', and Adults' Risky Choice

A. van Duijvenvoorde

Leiden University

It is known that risky behaviours, like harmful substance use and dangerous behaviour in traffic, start and/or peak during adolescence. This increase in risk-taking has been explained by an imbalance between affective-motivational versus cognitive-control processes, caused by the differential subcortical versus prefrontal maturational trajectories. To investigate the processes that underlie and drive individual and age differences in overt risk-taking levels, we decomposed risky choices by use of the 'risk-return model'. In an fMRI-scanner, 23 children (Mage = 10 years), 25 adolescents (Mage = 17.9 years) and 24 adults (Mage = 28.3 years) played an fMRI-adjusted version of a dynamic risky-choice task, the Columbia Card Task. For each decision a player faced—to either turn over a card or move on to the next round—we calculated the expected value (overall value of possible choice outcomes: greater EV = greater return) and the expected risks (standard deviation of possible choice outcomes: greater SD = greater risk). Behavioural results showed that greater returns increased the probability to take a card—all ages liked greater returns—and this sensitivity increased linearly with age. fMRI analyses showed a similar age-related increase in neural activation to returns in reward-related brain regions. Further, greater risk decreased the probability to take a card—all ages disliked greater risk—however, this sensitivity was absent in children and increased with age. fMRI

analyses also showed age-related increase in neural activation to risk that peaked in adolescence. These results illustrate the importance of decomposing influences in risky choice and are discussed in relation to neurodevelopmental models of adolescent risk-taking.

Presenation 3:

Decision Making Strategies in Adolescents: Individual Differences and Neural Substrates

L. Dekkers

University of Amsterdam

Human decision making is far from optimal. For example, many decisions makers are susceptible to the so called framing effect. This effect points to the observation that when individuals are asked to choose between a sure and risky option, they are more likely to choose for the risky option in case these options are framed in terms of losses, while they are more likely to choose for the sure option in case these options are framed in terms of gains. Although the framing effect is conceptualized as an universal phenomenon, previous research has shown that not all individuals are equally sensitive to this effect. We hypothesized that this is due to the fact that there are individual differences in decision making strategies, where each strategy is associated with a distinct neural profile. We tested this hypothesis in a study that consisted of two parts. In the first behavioural part of the study, a large group adolescents (N = 205) performed on a framing task in which they were required to repeatedly chose between a sure and risky option that in fact were equally profitable. By employing Latent Class Analysis (LCA), we supported the hypothesis that adolescents employed a range of decision making strategies. Importantly, only adolescents that were classified among certain strategy groups were sensitive to the classical framing effect, while others were not. In the second ongoing part of the study, a sub-group of adolescents performed on the framing task in the fMRI scanner. We will present preliminary results (N = 21) of this part of the study that enabled us to test whether (1) different decision making strategies and (2) their associated differential sensitivity to the framing effect, are sub-served by distinct neural profiles.

Symposium

May 21st

9.30-10.45

Pomonazaal 1&2

How to Modify Youth's Disruptive Behaviour? Novel Approaches and Experimental Evidence

Discussant: S. Thomaes

Disruptive behaviour puts children at risk for later delinquency and substantially burdens children themselves, their families, and society at large. Knowledge on how we can modify youth disruptive responses to social situations is of high scientific and societal relevance. In particular, it will help understand the psychological processes that underlie children's disruptive behaviour and inform the design and improvement of prevention and treatment programs. This symposium brings together a group of researchers who use stringent experimental designs and state of the art methodological techniques to try to modify and thereby understand disruptive behaviour of children and adolescents. In doing so, it explicitly seeks applied value and considers the translation of these insights in terms of its potential for intervention strategies. This symposium therefore bridges fundamental and applied research on how disruptive youth behaviour can be changed.

The first presentation will present new research findings, using eye tracking data, on social perception biases in children with disruptive behaviour disorders. These findings suggest that deviant social information processing by aggressive children does not result from a failure to notice non-hostile cues or impulsivity, but from a failure to accommodate non-hostile cues in to hostile-schemata. The second presentation will focus on how cognitive bias modification techniques may enable the reduction of hostile attribution bias and subsequent reactive aggressive behaviour in adolescents. This research possibly opens up an array of new intervention procedures that might benefit maladaptive cognitive processes of aggressive youth. The third presentation will present a set of field experimental studies on how parents can reduce disruptive child behaviour by praising positive child behaviour, and the differential effectiveness of labelled and unlabelled praise on successfully reducing disruptive behaviour.

Presentation 1:

Eye-tracking assessment of social-perception biases in boys with behavior disorders

A. Becht

Utrecht University

According to social information processing theories, aggressive boys are hypersensitive to hostile cues in their social environment. However, even though there is ample evidence that aggressive children over-interpret others' behaviors as hostile, it is unclear whether this hostile attribution tendency does actually result from over attending to hostile and threatening cues. We recently proposed that hostile intent attribution does not result from hypersensitivity to such cues, but rather from expectation driven perception, based on pre-existing hostile schemata. Such top-down processing should cause lessened rather than heightened attention to schema-congruent hostile cues and increased attention to non-hostile cues. A first eye-tracking study with non-referred children from the general population provided initial support for this hypothesis (Horsley, de Castro & Van der Schoot, 2010).

However, it is not clear whether these findings with non-referred boys can be generalized to children with actual behavior disorders. Aggressive behavior by children with behavior disorders is more often than not associated with attention problems and lower intelligence. It has been suggested that these characteristics of children with behavior disorders thoroughly influence their social perception. A top-down, expectation-driven account of social perception like the above may seem less likely for such impulsive children. Aim of the present study was to test whether boys with disruptive behavior disorders show the same schema-driven perceptual bias as the non-referred aggressive children. That is, we expected boys with behavior disorders to attend selectively to schema-incongruent non-hostile information, that they fail to accommodate in their consequent intent attribution and responses.

To test this hypothesis we presented 40 boys with disruptive behavior disorders and 30 comparison boys with cartoon series concerning ambiguous provocation and followed their looking behavior with an eye tracker, in line with Horsley et al (2010). Participants also answered questions concerning hostile intent attribution and recall of social cues. Results indicate that boys with behavior disorders selectively attend to schema-incongruent non-hostile information, but recall more schema congruent hostile cues and make more hostile attributions. Boys with disruptive disorders were found to attend less to hostile cues and more to non-hostile cues than their peers. Interestingly, despite their attention deployment to non-hostile cues - but consistent with their hostile schemata - they still recalled more hostile cues, attributed more hostile intent, and responded more aggressively to provocation than their peers. These findings suggest that deviant social information processing by aggressive children does not result from a failure to notice non-hostile cues or impulsivity, but from a failure to accommodate non-hostile cues in to hostile-schemata.

Presentation 2:

New interventions for reducing aggressive behavior? Retraining hostile interpretation bias

M. van der Molen

VU University Amsterdam

Aggressive adolescents tend to show hostile interpretation bias, they interpret ambiguous information in a more hostile way than do non-aggressive peers. Interpretation bias is seen in other forms of psychopathology as well, like negative interpretation bias in anxiety and

depression. Recent studies showed that negative interpretation bias can be retrained with a Cognitive Bias Modification training directed at Interpretations (CBM-I) leading to less negative interpretation bias, and in some studies also to less anxiety. However, till date, a CBM-I training is never tried to reduce hostile interpretation bias in aggressive adolescents. For the current study, a CBM-I training is developed to retrain hostile interpretation bias, based on the format that is used in studies on anxiety. We expected that hostile interpretation bias is associated with reactive aggression, not with proactive aggression, that the CBM-I training would lead to less hostile interpretation bias and if so, a decrease in reactive aggression was hypothesized.

Forty reactive aggressive adolescents (age range 12-16, mean age 14 years old) from a secondary school (VMBO) in the Netherlands were selected, of which 20 adolescents were randomly assigned to the CBM-I, consisting of five 20-minutes-sessions. The other 20 adolescents did not receive training. Tests and questionnaires were administered at pre- and post-training, measuring hostile interpretation bias and reactive and proactive aggression (Dutch version of the RPQ; both in self-reports and in reports by teachers). In the presentation, we will show the results of this study (n=19 completed the training). If the results are promising, it opens new vistas for interventions in aggressive adolescents.

Presentation 3:

What good is labelling what's good? Experimental field studies on the effectiveness of labelled and unlabelled praise to reduce disruptive child behaviour

P. Leijten

University of Amsterdam / University of Oxford

Calls are rising to identify the effective components of interventions that aim to reduce disruptive child behaviour. This knowledge should enable the improvement of interventions' (cost-)effectiveness. Field experiments are a promising approach to stringently test which elements of interventions actually contribute to reduced disruptive child behaviour in everyday life. We conducted three field experiments on one of the key elements of established parenting interventions: teaching parents to use labelled praise. Labelled praise includes explicit reference to the desired behaviour (e.g., "Well done, you cleaned up your toys") while such reference is absent in unlabelled praise (e.g., "Well done"). The advice to use labelled praise is based on the clinical presumption that children more easily link praise to the praised behaviour when praise labels this behaviour and children will therefore show a stronger increase in positive behaviour when praise is labelled. However, there is a dearth of knowledge on the empirical merit of labelled praise over unlabelled praise. Our studies (N=112 to N=161) were conducted at families' homes, with children aged 4-8 and their parents. In Study 1, we tested the immediate effects of labelled, unlabelled and no praise on child compliance in a community sample. In Study 2, we tested both immediate and short-term (i.e., 2-week) effects of labelled, unlabelled and no praise on child compliance in a subclinical sample and examined parents' preferences to use either labelled or unlabelled praise. In Study 3, we compared the immediate and short-term effects of labelled, unlabelled and no praise on parent-reported and observed child compliance, to distinguish between parental perceived and actual (i.e., observed) effects of praise. The results of our studies do not support the assumption that labelled praise is superior to unlabelled praise. In fact, labelled praise was less effective than unlabelled praise at yielding child compliance (Study 1), and equally effective to unlabelled praise in reducing parent-reported and observed disruptive behaviour in children after a two week practice period (Studies 2 and preliminary findings of Study 3). We discuss the implications of our findings for parenting interventions that use labelled praise as a key intervention element.

Symposium

May 21st

9.30-10.45

Jagerskampzaal

Learning and exploration of science and technology in and through interaction in non-formal learning settings

Discussant: H. Steenbeek

Curiosity, knowledge and cognition, and the use of language in science and technology activities are the dimensions of science-talents (Steenbeek et al., 2011). Researchers can measure these science talents by observing real-time properties of learning in inside and outside primary schools science activities. In these contexts, educators are encouraged to allow children considerable freedom and creativity in their exploration of scientific content, as a consequence of which knowledge is ideally co-constructed by children, peers and educator in a mutually stimulating learning process. Development in science talents should be understood within the particular context of learning. In this symposium various non-formal learning settings – education that is organized and has clear goals but occurs outside the regular curriculum (cf. Salmi, 2012) – are discussed: learning in an out-of-school program, exploration through peer-learning, and exploration and creativity in an inquisitive approach. With this symposium we aim to present the results from studies, carried out in the Curious Minds research program, about scientific learning in and through interaction in non-formal learning settings from the Hanze University of Applied Sciences, University of Groningen and University of Amsterdam.

The first presentation of Carla Geveke of the Hanze University of Applied Sciences / University of Groningen reports about an integrated out-of-school program around a Mobile Planetarium visit. This study shows that if the program is implemented according to its goals, it has a positive effect on children's complex scientific reasoning.

The second presentation of Marlenny Guevara-Guerrero of the University of Groningen explores the dynamics of peer-interaction between dyads in problem-solving tasks. The results show dynamic intra-individual patterns of interaction per dyad for verbalizations and action, in which collaborative work was significantly more frequent during the action-events than in the verbal-events.

The third presentation of Maartje Raijmakers of the University of Amsterdam reports about a study on learning outcomes of science activities measured with a scale for exploration and creativity. The results of these measurements could be used to define an experimental measure of an inquisitive approach (onderzoekende houding).

Presentation 1:

Teaching and Learning Processes in an Inside and Outside Classroom Program: a Multiple Case Study

C. Geveke

University of Groningen/ Hanze University of Applied Sciences

The heart of successful science education is in the quality of the teacher. Teachers must encourage children's scientific thinking by using an open teaching style. The Curious Minds program (Steenbeek et al., 2011) focuses on these teacher's skills in inside and outside classroom science programs. The aim of this study is to investigate the effects of an integrated inside and outside classroom program around a Mobile Planetarium visit. Two main questions in this study are: 'Does the complexity of scientific reasoning of children increase after a Mobile Planetarium visit?' and 'Does the magnitude of the effect depend on the quality of the implementation?'. The Mobile Planetarium visit and a follow-up lesson five weeks later were observed. The complexity of children's scientific reasoning was coded with a scale based on skill theory (Fischer & Bidell, 2006). The open teaching style was measured with the openness scale. Within the complex utterances, a distinction was made between declarative knowledge and scientific reasoning; also within the openness scale this distinction was made. First, except for the class with a marginal quality of implementation, the proportion of complex cognitive utterances was significantly higher in the follow-up lesson. Studying only the complex utterances, we've found that two of the four cases show a higher proportion of scientific complex reasoning in the follow-up lesson: the optimal and marginal case. Second, changes in proportions of teacher's evoked scientific reasoning co-occur with changes in children's scientific reasoning. This is not so for open teaching and complex utterances, with the exception of the class with marginal quality of implementation. However, micro-genetically observing we found that within the follow-up lesson of the optimal case open utterances of the teacher are followed by complex reactions of the children. Likewise open utterances of the evoked scientific reasoning are followed by children's scientific reasoning. We may conclude that if Curious Minds is implemented according to its goals, it has a positive effect on children's complex scientific reasoning.

Presentation 2:

How dyads interact during a problem-solving task?

M. Guevara-Guerrero

University of Groningen/ Universidad Tecnológica de Bolívar

Interaction between peers constitutes an ideal scenario to explore how children engage with others during a learning process. In educational and psychological studies, peer interaction and collaborative work has been the focus of attention. However, the dynamics of interaction between dyads have not been extensively studied. Using a microdevelopmental approach, this study explores the dynamics of interaction of two dyads of children (M=5, 2) while working on problem tasks. The children's interaction was elicited in a sequence of two problem-solving tasks about air pressure, where the children were asked to work together as a team in a session of 20 minutes. Each task includes two types of events: 1) verbal events where the researcher asked the children for descriptions, prediction and explanations and 2) action events where the children explore the materials and display attempts to solve it. The child interactions were coded into five categories with values from 1 to 4 according to the level of complexity for learning purposes (No work=1, Passive work=2, Copy work=3, parallel work=4, Collaborative work=5). By using a time series analysis, the dynamics of the interaction was tracked during two conditions of the task: verbal events and action events.

The results show intra-individual patterns of interaction per dyad for both events of the task (verbal/actions). The children's interactions vary between two or three types of interaction. The most frequent are: parallel-passive, parallel- collaborative and parallel- collaborative-passive. Collaborative work was significantly more frequent during the action events than verbal events. In general, the interaction between dyads depicts a dynamic process with intra-individual patterns over time.

Presentation 3:

An experimental measure of an inquisitive approach

M. Raijmakers

UvA

Learning outcomes of science education are in the psychological literature mostly examined in terms of knowledge and skills. One of the important results in this field is that free discovery learning is not very effective when compared with instruction and worked examples (Kirschner, Sweller & Clark, 2006). These conclusions are in great contrast with the approaches in museums and science centers and the current development of science education in Primary schools. In these contexts, educators are stimulated to allow children for freedom and creativity in their exploration of scientific content. Consistently, at least for primary schools, learning outcomes are defined not only as knowledge gain and skill acquisition but also as attitudes. For example in Dutch development of learning paths for primary science education (by the SLO) an important learning outcome is an inquisitive approach (onderzoekende houding). Until now, attitudes toward science are mostly measured by questionnaires (e.g., Asma et al., 2010).

As a different approach, we are looking at the relation between science activities and an inquisitive approach with an experimental measure of this concept. To this end, we extended the observation measure of exploration (Exploratory Behavior Scale, van Schijndel et al., 2010) with a measure of creativity as defined by divergent thinking (Guilford, 1967). Behavior that is highly valued in the EBS consists of attention for outcomes of manipulations (of material or one selves) that include variation. For the creativity measure we additionally count the amount, the diversity and the uniqueness of variation, analogous to the Alternate Uses Test (AUT; Torrance, 1966). The resulting C-EBS (Creative-EBS) could be used to define an experimental measure of an inquisitive approach. Two pilot studies and a study in progress show the usefulness of this measure for studying learning outcome of science activities.

Symposium

May 21st

11.15-12.30

Kleine veerzaal

*(Re)Cognition of Immoral Behavior in the Adolescent Peer Context:
Empirical Findings and Validation*

Discussant: M. Sentse

Bullying is one of the most persistent problems in childhood and adolescence. Hence, more insight into its development is of great importance. In this symposium three studies will be presented that are aimed at the relation between individual cognitions and bullying in the adolescent peer context. The first study validated mechanisms of moral disengagement (i.e., the self-justification of transgressive actions) that have been previously related to antisocial behavior among peers. Moreover, it is examined whether these mechanisms are differently associated with bullying and other antisocial behaviors. Using confirmatory factor analysis, four distinct dimensions of moral disengagement were unveiled. In addition, the dimension Reconstructing Immoral Behavior was significantly associated with bullying and psychopathic traits.

The second study is centered on the role of moral disengagement in the relation between individual bullying and friends' bullying. Using a longitudinal social network approach, this study showed that friends influence individual bullying in early adolescence. Moreover, individual levels of moral disengagement marginally affected friends' influence, whereas friends' levels of moral disengagement significantly affected the development of bullying, with differences for boys and girls.

In the final study, the focus goes from cognitions to actual perceptions of bullying and victimization. This study examined the common belief that most students know about the bullying in their own classroom. It was demonstrated that many students who feel victimized are not perceived as victims by their classmates. Moreover, recognition of victimization increased when students were similar in age and gender, or were defenders of victims and decreased when they were outsiders.

In sum, this symposium suggests that cognitions of immoral behaviors are important in the prediction and recognition of bullying and victimization, and may well extend to broader ranges of antisocial behaviors. Furthermore, not only do moral cognitions affect the susceptibility to peer influence, but they may also play a crucial role in the perception of immoral behavior. Finally, this symposium highlights the importance of examining whether individual cognitions can be actually effective in recognizing and reducing bullying among all peers equally. The discussant concludes with thoughts about the current studies as well as future research in this area.

Presentation 1:

Moral disengagement in adolescence: The (ir)relevance of different dimensions

J. Sijtsema

Tilburg University

Moral disengagement, i.e., the self-justification of transgressive actions, has been associated with antisocial behavior in adolescence (Gini, Pozzoli, & Hymel, 2014; Hyde, Shaw, Moilanen, 2010). Moral disengagement can be divided into eight different mechanisms distributed over four dimensions (Bandura et al., 1996; Obermann, 2011). However, to date, no studies have sought to empirically validate these mechanisms and dimensions and examine whether they are differently associated with antisocial behaviors. The current study addresses these limitations by examining the factor structure of moral disengagement and their association with antisocial behaviors in two adolescent samples.

Data were collected in the Netherlands (N=136; M age = 16.39, SD = 1.04) and Italy (N=186; M age = 12.99, SD = 0.74). Moral disengagement was assessed via self-reports using a 32-item form and a 24-item form in the Dutch and Italian sample respectively. Antisocial behaviors were assessed via the Antisocial Behavior Questionnaire (Moffitt & Silva, 1988) and psychopathic traits in the Dutch sample and via peer nominations on bullying in both samples.

Confirmatory factors analyses did not support the proposed eight factor model, but were in support of a four-dimensional model in both samples (Dutch sample: CFI = 0.88, RMSEA = 0.04 [95% CI: 0.02 - 0.05], SRMR = 0.07; Italian sample: CFI = 0.89, RMSEA = 0.05 [95% CI: 0.04 - 0.06], SRMR = 0.06). In line with Obermann (2011) the following dimensions were discerned: Reconstructing Immoral Behavior, Obscuring Responsibilities, Misrepresenting Injurious Consequences, and Blaming the Victims. Moreover, the dimension Reconstructing Immoral Behavior was significantly associated with psychopathic traits in the Dutch sample ($B = 1.90, p < .05$) and to bullying in the Italian sample ($B = 0.27, p < .05$) while accounting for the other dimensions of moral disengagement.

Despite these findings, the overlap between the different dimensions is considerably high and questions the importance of separating the construct moral disengagement into separate dimensions.

Presentation 2:

Friendship selection and influence in bullying: Effects of moral disengagement

A. Rambaran

Interuniversity Centre for Social Science Theory and Methodology / University of Groningen

Previous research has shown that peers play a crucial role in the development of bullying (Huitsing & Veenstra, 2012; Salmivalli, Lagerspetz, Bjorkqvist, Osterman, & Kaukiainen, 1996). However, individuals are not influenced by peers to an equal extent. We hypothesize that differences in moral disengagement (i.e., self-justification of transgressive actions) affect the extent to which peers influence individual bullying. Specifically, we hypothesized that changes in bullying over a one-year period depended on friends' influence and individual levels of moral disengagement. Via longitudinal social network analysis (RSiena; Snijders et al., 2010) it was examined whether similarity between friends in bullying was due to friendship selection, deselection, or influence processes.

Data were collected during two waves in a sample of Italian children (age 9-10 years; $n = 133$; 42.9% girls) and young adolescents (age 11-14 years; $n = 236$; 40.6% girls). Friendship networks were assessed via peer nominations. Bullying were measured via the Participant Role Questionnaire (PRQ). Moral disengagement was assessed via self-reports (Caprara, Pastorelli, & Bandura, 1995): a 14-item form for children and a 24-item form for young

adolescents.

In line with our hypothesis, in early adolescence participants became significantly more similar to their friends' level of bullying (direct influence effect: 1.37, SE=0.59, $p < .05$). Moreover, this influence effect was marginally moderated by moral disengagement (interaction effect: 3.96, SE=2.36, $p < .10$). Young adolescents higher than average on moral disengagement were somewhat more likely to become similar to their friends in terms of bullying. Moreover, friends' levels of moral disengagement affected participants' bullying indirectly over time, but only in early adolescence (indirect influence effect: -0.43, SE=0.23, $p < .10$). More specifically, gender interactions (-1.13, SE=0.53, $p < .05$) showed that over time girls increased in bullying when their friends were higher on moral disengagement. These findings suggest important gender and age group differences in the socialization of bullying. Whereas young adolescents became more similar to their friends in bullying, we found no evidence for this effect in childhood. Moreover, our findings indicate that moral disengagement plays a role in this socialization process and provides new angles for intervention practices.

Presentation 3:

Recognizing victims of bullying in the classroom: A comparison of individual peer reports and self-reports

B. Oldenburg

Interuniversity Centre for Social Science Theory and Methodology / University of Groningen

This study investigated to what extent 2,414 secondary school students (M age = 13.25) recognized classmates who claim to be victimized. Individual peer reports and self-reports were compared by looking at to what extent victimization nominations given by reporter i about receiver j were in concordance with the self-reported victimization of j . Furthermore, we investigated to what extent reporter-receiver agreement depended on the relationship between reporter and receiver as well as on reporter characteristics. More specifically, on the relationship level we looked at friendship between reporter and receiver, and similarity in gender and age. On the reporter level, reporter's age, gender, and perceived behavior during bullying episodes were included.

Our data showed that a considerable number of early adolescents who felt victimized were not identified as victims by their classmates. Reporters recognized receivers who felt victimized in 26% of cases. About 18.1% of the receivers who felt victimized did not receive a single victimization nomination of their peers. Furthermore, only 3.4% of the reporters recognized all classmates who felt victimized.

Logistic multilevel modelling (dyads nested in reporters nested in classrooms) indicated that when reporter and receiver differed less in age, they were more likely to agree on the victimization ($\text{exp}(B) = 0.892$, $p = 0.054$). Furthermore, we found more reporter-receiver agreement when reporter and receiver had the same gender, especially when they were both boys ($\text{exp}(B) = 3.353$, $p < 0.001$). Moreover, we found a marginally significant relation between reporters' age and reporter-receiver agreement ($\text{exp}(B) = 1.105$, $p = 0.091$). We expected that students who behaved as outsiders would be less likely to recognize classmates who felt victimized and found support for this relation ($\text{exp}(B) = 0.302$, $p < 0.001$). No support was found for the hypothesis that students who actively contributed to the bullying were less likely to recognize victimized classmates. Finally, as expected, we found that students who received many defender nominations were more likely to recognize classmates who felt victimized ($\text{exp}(B) = 2.425$, $p = 0.020$). Findings are discussed with regards to current literature and suggestions for future research are made.

Symposium

May 21st

11.15-12.30

Pomonazaal 1&2

Genetic sensitivity to parent, teacher, and peer influences in adolescence

Discussant: G. Overbeek

Genetic sensitivity to parent, teacher, and peer influences in adolescence. Although the research field of gene-by-environment interactions (GxE) is growing, results are inconsistent and many aspects are still unexplored. Few studies have examined GxE on problem behavior in the sensitive period of adolescence and operationalizing the environmental factor is still an important challenge. Adolescence is a vulnerable period for developing problem behaviors and an important transitional stage characterized by changing social relationships with parents, teachers, and peers. Parent-child relationships have been examined using a wide range of measures, making it difficult to compare results among studies. Teacher-child relationships and peer relationships have seldom been examined in GxE research. Also typical challenges in GxE research, such as power issues, gene-environment correlations and multiple testing, need to be taken into account.

The present symposium will bring all these aspects together. Three researchers will present different studies on gene-by-environment interactions, exploring whether adolescents who carry specific genetic variants differ in their response to environmental influences. The three presentations will have a different focus with regard to genetic polymorphisms (i.e., DAT1, DRD4, DRD2, 5-HTTLPR, and OXTR), environmental factors (i.e., parent-child, teacher-child, and peer relationships), and outcomes (i.e., externalizing problems, internalizing problems, and school engagement).

The first presentation will focus on the interaction between dopaminergic VNTRs, more specifically DAT1 and DRD4, and parenting behavior in regard to externalizing problem behavior in adolescents. Dopaminergic genes are interesting candidates for GxE research on externalizing problems because of their involvement in behavioral disinhibition and reward-related behavior.

The second presentation will focus on teacher-child relationships, an innovative environmental perspective in GxE research. DAT1 and DRD4 were found to interact with teacher-child affiliation and dissatisfaction to predict adolescent rule breaking behavior and behavioral school engagement.

The third and last presentation will focus on loneliness in adolescence. Multiple GxE studies will be described including different genetic polymorphisms (i.e., DRD2, 5-HTTLPR, and OXTR) and different environmental factors (i.e., parental support and perceptions of company).

Future directions in GxE research on loneliness will be discussed. The discussant, an expert on GxE research, will integrate the presented studies and comment on the theoretical and empirical implications for the research field.

Presentation 1:

Interaction between dopaminergic genes and parenting behavior on externalizing problems in adolescence

A. Janssens

University of Leuven

The present study aims to contribute to the growing field of gene-by-environment (GxE) research and investigates the interplay between dopaminergic genes and parenting behavior predicting adolescents' externalizing problem behavior. In line with previous research, we expect adolescents possessing the risk variant of the dopamine receptor D4 or the dopamine transporter to be (a) more *differentially susceptible* to both positive and negative parental influences, (b) more *vulnerable* to only negative influences, or (c) more *vantage-sensitive* to only positive influences, resulting in respectively more or less externalizing problems compared to adolescents with other genetic variants.

The present study uses first-wave data from the STRATEGIES-sample ($n = 1116$). Saliva samples were extracted for 1,103 seventh to ninth grade adolescents (51% boys; M age = 13.79, $SD = .93$) and genotyped for the dopamine transporter and receptor D4. Adolescents, mothers, and fathers filled out questionnaires with respect to (a) parental behavior, including parental support, proactive control, punitive control, harsh punitive control, and psychological control, and (b) adolescent externalizing problems.

Using linear regression analyses, three GxE interactions remained significant after excluding siblings and controlling for adolescent's gender, age and mother's level of education. First, adolescents with the risk variant of the dopamine transporter who reported less parental support showed more aggressive behavior than adolescents without the risk variant. Second, adolescents with the risk variant of the dopamine receptor D4 whose parents reported less proactive control showed more externalizing problems than adolescents without the risk variant. The third interaction was in the opposite direction than expected, namely less externalizing problems in adolescents with the risk variant of the dopamine receptor D4 who report less parental support.

The first two interactions are in line with the vulnerability hypothesis, whereas the final interaction might be understood in light of the mismatch hypothesis as adolescent carrying the risk variant of the dopamine receptor D4 might function better with a combination of less support and more proactive control by parents. These results underscore the fact that genotypic differences are not straightforward 'bad' or 'good' and that optimal parenting is different for each adolescent due to underlying genetic differences.

Presentation 2:

Dopamine genes moderate the effect of teachers on adolescent behavioral engagement and rule breaking behavior

S. de Laet

University of Leuven

The current study is the first to examine whether the dopamine transporter and receptor D4 moderate the effect of teacher-child affiliation and dissatisfaction on adolescent rule-breaking behavior and behavioral school engagement.

Methods. Data were taken from a prospective longitudinal study on problem behaviors in early adolescence, the STRATEGIES project (Studying Transactions in Adolescence: Genes, Environments, and their Interactions). 1058 adolescents (ages 11 to 17) (50% boys) participated in the study. Adolescents completed the Affiliation ($\alpha = .90$) and Dissatisfaction subscale ($\alpha = .85$) of the PIML. Parents completed the Rule-breaking behavior subscale ($\alpha =$

.70) of the CBCL and the Behavioral engagement ($\alpha = .85$) subscale of the P-SLAQ. To measure adolescents' genetic variability, saliva-samples were collected (Oragene kits). Genotyping was done by the Center for Human Genetics – KU Leuven. Two groups of adolescents were created for the dopamine transporter: adolescents carrying two copies of the risk variant (N = 572) versus one or two copies of the nonrisk variant (N = 474), and two groups for the dopamine receptor D4: carriers (N = 377) versus non-carriers of the risk variant (N = 705). Regression analyses were applied (Mplus), using appropriate corrections for nested data and non-normality, and the FIML algorithm to address missingness.

Results. Controlling for multiple testing, two significant interaction effects were found. The dopamine transporter moderated the effect of teacher-child affiliation on behavioral engagement. Adolescents carrying two copies of the risk variant were less behaviorally engaged in case of low teacher affiliation and more behaviorally engaged in case of high teacher affiliation. The dopamine receptor D4 moderated the effect of teacher-child dissatisfaction on rule-breaking behavior. Non-risk carriers displayed more rule-breaking behavior in case of high teacher disaffection and less rule-breaking behavior in case of low teacher disaffection compared to risk carriers.

Conclusion. This multi-method study showed that adolescents carrying two copies of the risk variant of the dopamine transporter gene were more susceptible to effects of teacher-child affiliation on behavioral engagement. Non-risk carriers of dopamine receptor D4 were more susceptible to effects of teacher-child dissatisfaction on rule-breaking behavior compared to risk carriers.

Presentation 3:

Interactions between dopamine, serotonin, and oxytocin genes, and environmental factors on the development of loneliness in adolescence.

M. Verhagen

Radboud University Nijmegen

Loneliness is a common experience that is specifically prevalent in adolescence. Based on the evolutionary theory, one could assume that loneliness has a heritable component. However, molecular genetic studies to loneliness are scarce. To fill this gap, we examined multiple genetic markers within the dopamine, serotonin, and oxytocin system in relation to loneliness in adolescents. In line with the notion of the importance of examining genetic effects in interplay with environmental factors, we also examined parental support and positive and negative perceptions of company. To be able to examine the development of loneliness over time in adolescence, we used a longitudinal design. These studies are amongst the first to examine the genetic background of loneliness in relation to environmental sensitivity in adolescents. The findings of our different G x E studies will be discussed.

Pecha Kucha

May 21st

11.15-12.30

Jagerskampzaal

Education & Learning

Chair: Wieke Dalenberg

Presentation 1:

The Role of Classroom Interaction in Students' Scientific Reasoning Process

S. van Vondel

University of Groningen

An important goal of science and technology education is preparing students to engage in the process of scientific reasoning. Characteristics such as enthusiasm, curiosity and astonishment together with cognitive skills contribute to student's display of scientific reasoning skills during S&T-lessons. Teachers play an essential role in stimulating students' scientific reasoning skills. Asking thought provoking questions stimulate children to think about the world around them. Next to questioning, other aspects of the classroom interaction are important for the development of scientific reasoning skills as well, e.g. providing feedback and information and giving and taking turns. In addition, follow-up questions are an excellent way of stimulating students to think about their answers and reflect on their thoughts (Oliveira, 2010). During a Video Feedback Coaching program for teachers (VFC-t), upper-grade teachers are encouraged to stimulate the students' scientific reasoning skills (Van Vondel & Steenbeek, 2013). The goal of this study to find patterns of interactions that show how teachers elicit a high level of scientific reasoning in students and see whether there is a change observed during the VFC-t. When more understanding is gained about interaction patterns, intervention programs can be specifically attuned to supporting interaction patterns in the classroom in which all children are equally stimulated to fully display their scientific reasoning skills.

6 upper-grade elementary teachers participated in the pilot study of the VFC-t. The method consists of a minimum of five videotaped observations during science and technology lessons in a naturalistic classroom setting, in which both teachers' and students' utterances are coded. At the teacher level the focus was on the type of utterance and the student utterances focused on the level of scientific reasoning.

Preliminary results point to different interaction patterns in the beginning of the trajectory compared to the end. Students seem to have more opportunities to talk because teachers respond more often with thought evoking higher order (follow-up) questions, instead of filling in the answer themselves. Furthermore, preliminary analysis of the data shows that classroom interaction patterns emerge in which boys have one times as much utterances during S&T-activities compared to girls.

Presentation 2:

Harder, Better, Faster, Stronger: Understanding the "Pro" and "Active" in Proactive Behaviors during School-to-Work Transitions

P. Baay

Utrecht University

The school-to-work transition constitutes a central developmental task for adolescents. The increased importance of proactive behavior in the workforce has spurred scientific inquiry

into the concept of proactivity, but there are two important gaps in the literature. First, prior research has focused on a proactive mindset, with little research on indicators of acting that help explain the link between this mindset and career-related outcomes. Second, research on the pro – or future – component of proactivity is largely lacking. The current paper examines across three samples the pro and active components of proactivity in the school-to-work transition. Study 1 uses Dutch data on general future plans of vocational training students shortly before graduation ($n = 406$, M age = 19.73). Study 2 uses Dutch in-depth data on the job-search process ($n = 39$, M age = 21.92). Study 3 compares two waves of US data on career plans at age 18 and career outcomes at age 28 ($n = 468$).

Our results indicate that proactivity is related to working harder (i.e., more effort in long-term goals, Study 1; applying more frequently, Study 2) and faring better (i.e., more goal achievement, Study 1; receiving more job offers, Study 2; lower unemployment chances, higher salary, and more job satisfaction, Study 3). Shedding light on the active component, we showed that a proactive personality was related to networking more proactively and to applying for jobs more proactively. In turn, those who networked and applied proactively benefited more from engaging in these activities (Study 2). The pro component of proactivity was examined with two assessments of the future. First, when the future was further away (in terms of graduation date), people put more effort in goal achievement to the extent that they had proactive skills (Study 1). Second, the prototypical obstacle in job-searching, discrimination, led (only) proactive individuals to increase their job-search behavior and to apply more proactively (Study 2), while those with more proactive coping skills were better able to reduce actual discrimination (Study 3). Hence, in addition to working harder and faring better, proactivity is related to acting faster and taking charge more strongly.

Presentation 3:

An investigation of the relation between self-efficacy, experience of success, and the motivation to practice math

B. Jansen

University of Amsterdam

Practicing math is a prerequisite for developing math skills but is inevitably linked to making errors. Making errors and the associated negative feedback may lower motivation and the confidence in one's own capacities. Children may differ in their tolerance for negative feedback (Hofman et al., in preparation). Hence, allowing children to choose their own success rate may increase their motivation to practice math, and their feelings of self-efficacy. Studies on self-adaptive testing show that students' performance is higher when allowed to choose difficulty level themselves (Pitkin & Vispoel, 2001).

Math Garden is a web-based system for practicing math (Klinkenberg et al., 2010). The system is computer-adaptive, which means that the level of problems is adapted to the individual participant. Within this adaptive environment, children can also choose between an easy or a difficult level, tailored to their own level, thereby manipulating the rate of errors. In this study, children from grades 2 to 6 ($N = 232$; ages: 8-12 yrs) were assigned to one of four conditions: 1) Self-selecting success rate; 2) Easy condition; 3) Medium condition; 4) Difficult condition. Children practiced math problems for a period of nine weeks. Before and after this period, self-efficacy and math skills were measured.

Level of success rate nor the possibility to self-select the difficulty level affected change of math skills, self-efficacy or level of practice. The results are surprising, given earlier results with Math Garden and will be discussed in relation to these previous results. Further, children who were good at math practiced more than children who were less good at math. The relation between practice and skills may be mutual, and might suggest that

increasing math skills of less able students will be more difficult than increasing the skills of students who are already good at math. However, children who were confident of their capacities (regardless of their actual skills) also practiced more. Future studies might focus on increasing self-efficacy of children less able at math in order to increase their level of practice and thereby indirectly improving their math skills.

Presentation 4:

Distributional learning of visual information in 10-month-old infants

C. Junge

University of Amsterdam

Distributional learning – infants’ ability to track token frequency - is hypothesized to be a key mechanism for category learning. Crucially, distributional learning has been demonstrated in studies familiarizing infants with all exemplars from a given continuum: Depending on how often each token is presented, infants either carve up the continuum into one broad category (unimodal distribution) or into two not-overlapping categories (bimodal distribution). However, while distributional learning has been successfully demonstrated for auditory categorization (e.g., phoneme categorization; Maye et al., 2002; 2008), it is less clear whether this mechanism also applies to visual categorization. Although studies on visual categorization suggest that distributional learning is domain-general, these studies never used the whole range of possible configurations, with test-phase comprising infants’ looking preference for novel exemplars compared to familiar exemplars (Plunkett et al., 2008; Younger, 1985). Therefore, we adapted the Maye et al., 2002 paradigm for visual categorization. Fifteen 10-month-olds were familiarized with a unimodal distribution and fifteen other 10-month-olds with a bimodal distribution of an 8-step continuum of two green stuffed puppets (from the ‘giant microbes’ collection). Infants from both conditions saw all tokens, but some tokens more than others, and some tokens equally often (i.e. token 1, 3, 6, and 8). Categorization was assessed through an alternating/non-alternating paradigm (Best & Jones, 1998). During non-alternating trials the same token was presented repeatedly (either token 3 or 6), and during alternating trials token 1 and 8 alternated. Critically, the two tokens should be perceived as the same category for the unimodal condition but as two different categories for the bimodal condition. This was followed by a 5-minute delayed preferential looking paradigm for a mid-point versus end-point exemplar. Infants in the unimodal condition did not initially distinguish between alternating and non-alternating trials, which indicates their formation of one large category. In contrast, infants in the bimodal condition show an alternating preference, which indicates their formation of two distinct categories. Thus, results suggest that 10-month-old infants apply distributional learning for visual categorization. However, results of the delayed preferential looking phase did not show preferences in either group, which suggests that effects are short-lived.

Presentation 5:

The limited value of standardized tests to predict learning trajectories in science and technology.

S. van der Steen

University of Groningen (and Open University)

Testing is an integral part of schooling nowadays and strongly supported by public policy. However, do standardized tests of academic performance measure what they claim? This presentation focuses on two studies conducted in the domain of science and technology. We

start with a cross-sectional study to examine whether young special needs students with emotional/behavioral difficulties (age 3-5, $n = 14$) reach lower understanding levels than regular students (age 3-5, $n = 17$) while working individually on scientific tasks under a condition of scaffolding (e.g., follow-up questions depending on students' levels of understanding). Understanding was measured per utterance, using a scale based on skill theory (Fischer, 1980). The results do not point to substantial differences in scientific understanding between special needs and regular students. This is remarkable, as the regular students performed significantly better than the special needs students on two standardized tests of academic performance ($p < .05$).

Secondly, we use longitudinal data on children's understanding of scientific concepts to compare the relative importance of general (e.g., standardized test scores) and microgenetic measures (real-time interaction patterns) to characterize the development of scientific understanding over 1.5 years. A researcher worked five times with 31 children (3-5 years old, from regular and special primary schools) on scientific tasks about air pressure and gravity. The researcher's scaffolding behavior and the child's understanding were coded per utterance. Furthermore, children's standardized test scores (math and language) and information on their home environment were obtained. A cluster analysis distinguished three distinct developmental trajectories, which could best be predicted by interactions between the child and his or her proximal environment, but not by general standardized measures. Standardized tests do not indicate the bandwidth of possible scores students show, whereas a gap exists between student's task performance under conditions of individual performance and under a condition of support. If we want to eliminate the disadvantages of standardized tests as much as possible, we might be better served with adaptive, universally designed testing methods.

Presentation 6:

Experiences and commitment development on a time scale of weeks

M. van der Gaag

University of Groningen

In Erikson's (1963) psychosocial theory of development, identity development is described as a main developmental task for adolescents. Marcia (1966) operationalized Erikson's theory by introducing commitment and exploration as central concepts in identity development. Marcia (1980) stated that identity is not static, but dynamic and is formed by everyday decisions and events. Although there has been a lot of recent empirical research concerning identity and its correlates (Meeus 2010), little research concerns the mechanisms of identity development on a micro-level (Bosma & Kunnen, 2001). An exception is the work of Klimstra et al (2010), who measured commitment and reconsideration using a single item each day over a period of five days. They reported that commitment strength and amount of reconsideration fluctuated daily. In addition, Kunnen (2006) found that commitment decreased after a lot of negative experiences. She followed students over a period of 26 weeks, and every week they reported an experience and accompanying emotions. Commitment was measured twice, at the beginning and end of the 26 weeks, using an extensive identity interview (GIDS; Bosma, 1985). In the present study we have combined the studies of Kunnen (2006) and Klimstra et al. (2010) and investigate whether weekly experiences are immediately followed by changes in commitment. We have followed 37 students over a period of 30 weeks. Each week, they reported an important experience and accompanying emotions. In addition, commitment in the domain of education is measured each week with two items. Using a Monte Carlo analysis, we test the hypothesis that commitment increases after a positive experience and decreases after a negative experience, as compared to neutral experiences. Also, we

investigate what happens to commitment if the experience is ‘mixed’ (i.e. an experience accompanied by strong co-occurring positive and negative emotions). In addition, we will analyze if positive, negative, and mixed experiences within the domain of education have a similar effect on educational commitment as experiences outside of the domain of education. Results, implications and future directions for research will be discussed.

Presentation 7:

A Good Grade Makes my Day: Grades, Adolescents’ Daily Levels of School Engagement, and the Role of Peer Context

A. Poorthuis

University of Amsterdam

Receiving a grade is a psychologically salient event for students, which may have immediate effects on their engagement in school. Low grades are often meant to signal that students should increase their effort in subsequent tasks (OECD, 2012). However, Feedback Intervention Theory (Kluger & DeNisi, 1996) posits that students may also cope with negative feedback by disengaging from the learning situation. Indeed, there is some empirical evidence that low grades predict decreased engagement over time (You & Sharkey, 2009). Whereas previous studies have focused on performance evaluations at a global level (e.g., GPA), it may in fact be daily evaluations that have an immediate impact on school engagement. Therefore, in this study grades and school engagement were measured on a daily basis.

Students do not receive their grades in a social vacuum. Especially in early adolescence, they are prone to adapt to peer academic norms (Masten, Juvonen, & Spatzier, 2009). According to achievement goal theory (Ames, 1992), classrooms differ in their emphasis on different achievement goals. In performance oriented classrooms the norm is to demonstrate competence—to show to others that one has performed well. In this context, grades may be more salient and have larger effects on students’ school engagement.

A 10-day diary study was conducted among 622 students in 49 classrooms (Mage=13.1, SD=0.48). Students reported on the grades they received and their daily levels of school engagement (Skinner et al., 2008). Students’ perceptions of classroom performance orientation (Midgley et al., 2000) were measured prior to the diary period.

Three-level multilevel analyses showed that students who received lower grades on average during the diary period reported lower daily levels of engagement. More important, the daily discrepancy from students’ average grade was an additional predictor of engagement. On days students received relatively low grades (compared to their own average grade) they reported lower levels of engagement than on days they received relatively high grades. Interestingly, classroom performance orientation did not moderate the link between grades and school engagement. Thus, the effect of grades on students’ engagement is independent of whether demonstrating competence is emphasized in students’ peer context or not.

Symposium

May 21st

15.00-16.15

Kleine veerzaal

Can a Pat on the Back Feel Like a Slap in the Face? Well- Intended Socialization Practices Can Undermine Children's Well-Being, Motivation, and Interpersonal Relationships

Discussant: J. Denissen

In current Western society, there is a strong emphasis on raising children's self-esteem. Children are often praised for doing well, they are told that they are special, and they are continuously reminded that they are loved and cared about. Contrary to common belief, however, such well-intended words sometimes paradoxically backfire, and can undermine children's motivation, well-being, and interpersonal relationships. In the present symposium, we present theory-driven experimental research showing that well-intended socialization practices can have unintended consequences. We studied children aged 8 to 13, a developmental phase when children are especially sensitive to social feedback.

Presentation 1 (Eddie Brummelman) shows that adults often direct overly positive, inflated praise at children who seem to need such praise the most—children with low self-esteem. However, such praise backfires in the very same children, causing them to become wary of challenges. Presentation 2 (Reine C. van der Wal) shows that telling children that they are special can make them more narcissistic and, in parallel, less forgiving towards offending classmates. Presentation 3 (Sander Thomaes) shows that reminding insecure children that they are loved and cared about makes them more emotionally vulnerable to social rejection. Each presentation emphasizes when and why such socialization practices can affect the development of children's social, emotional, or academic competencies.

Although counterintuitive, our findings are consistent with self-comparison theory. Children compare social feedback, such as praise, with their preexisting self-views. When children have negative self-views, positive feedback can cause them to doubt themselves (e.g. "Do others really love me?" "Can I live up to others' high expectations of me?"). As such, our findings underline the importance of understanding person-environment interactions within the socialization context.

Our findings also have broad applied implications. They suggest that common beliefs can lead parents, teachers, and other caretakers astray in their attempts to support children. An important task for researchers and policy makers is to reconsider, and perhaps change, these common beliefs in the general population.

Presentation 1:

“That’s Not Just Beautiful—That’s Incredibly Beautiful!”: The Adverse Impact of Inflated Praise on Children With Low Self-Esteem

E. Brummelman

Utrecht University

“Amazing! You made an incredibly beautiful drawing!” At this moment, parents and teachers all around the Western world are giving such overly positive, inflated praise to children. Inflated praise is often given in an attempt to raise children’s self-esteem. An experiment (Study 1) and naturalistic study (Study 2) found that adults are especially inclined to give inflated praise to children with low self-esteem. This inclination may backfire, however. Inflated praise might convey to children that they should continue to meet very high standards—a message that might discourage children with low self-esteem from taking on challenges. Another experiment (Study 3) found that inflated praise decreases challenge seeking in children with low self-esteem and has the opposite effect on children with high self-esteem. These findings show that inflated praise, although well intended, may cause children with low self-esteem to avoid crucial learning experiences.

Presentation 2:

Too Special to Forgive

R.C. van der Wal

Radboud University Nijmegen

In current Western society, there is a strong emphasis on individual specialness. For example, to boost self-worth, intervention programs and even smartphone apps are aimed at increasing feelings of being special. However, the interpersonal consequences may not be as anticipated. In the current research, we took a practice-based approach, seeking to understand what the interpersonal consequences are when telling or reminding people about their specialness. Specifically, we examined whether reminding people of how special they are may actually undermine forgiveness tendencies towards others, and as such, may sometimes hurt rather than help interpersonal functioning. Two studies demonstrated that instructions to think of how special one is results in less self-reported forgiveness regarding a past offense (Study 1), and less forgiving behavior toward an offending experimenter (Study 2). Finally, a brief specialness intervention among children showed that explicitly telling children that they are special leads to less forgiveness of perceived severe offenses (Study 3). These results provide initial causal evidence for the link between specialness and (un)forgiveness, and suggest that focusing on individual specialness may not always be beneficial for interpersonal functioning - something worth considering when evaluating interventions aimed at boosting feelings of specialness.

Presentation 3:

Reminding Secure Relationships: Source of Sorrow or Solace?

S. Thomaes

University of Southampton

When children face negative social experience such as peer disapproval or rejection, adults are often advised to remind them that many people love and care about them. Do these reminders of interpersonal security help to reduce the sting of negative social experience? In Experiment 1, children (N=202; 9 to 13 years old) were randomly assigned to reflect on and write about their relationships with either responsive, supportive others (security condition) or

mere acquaintances (control condition). Next, they experienced disapproving feedback from peers. The security reminder caused participants who perceived the quality of their social relationships negatively to experience negative mood following peer disapproval. In Experiment 2, children (N=144; 9 to 13 years old) first experienced disapproving feedback from peers and then randomly reflected on and wrote about either responsive, supportive others or mere acquaintances. The security reminder interfered with internalized negative mood repair (i.e., the downregulation of negative mood following peer disapproval), again especially among participants who perceived the quality of their social relationships negatively. Thus, security reminders may backfire among those children who would seem to need emotional support the most. Although counterintuitive, these findings are consistent with self-comparison theory.

Symposium

May 21st

15.00-16.15

Pomonazaal 1&2

Working memory development and its underlying factors

Discussant: F. Donkers

This symposium brings together researchers who, in different ways, investigate how working memory develops across the life span and which factors underlie this development. Working memory, which is defined as the ability to simultaneously store and process information (Baddeley, 1992), has been shown to be an important contributor to many skills acquired during childhood, including reading and mathematics (e.g. Pickering, 2006). What remains not well understood and controversial, is which specific factors underlie developmental improvements in our ability to hold and process material in memory. Such information is however important, given the key role working memory plays in many daily life and academic abilities. This symposium is comprised of several studies investigating which cognitive mechanisms underlie working memory development or improve working memory capacity in individuals of different ages. In this symposium Ilona Friso-van den Bos (Utrecht University) will present results of a study examining the effects of a working memory training on working memory capacity and possible transfer effects to number-sense in preschool 5-6-year-old children. Tamara Schleepen (Maastricht University) will address to what extent the development of using memory (i.e. semantic grouping) strategies in children aged 10-11 years, 12-13 years and young adults (19-22 years) is due to improvements in attentional resources with age. In the final talk, Marlies Vissers (University of Amsterdam) will present a study in which she investigated if the ability to hold information in visuo-spatial short-term memory decreases between healthy young (17-23 years) and older adults (40-60 years) and which neurobiological processes underlie this. The resulting discussion led by Franc Donkers (Tilburg University) will integrate the outcomes of the above studies and will discuss their implications for educational settings.

Presentation 1:

Effects of a working memory training on kindergartners' number sense

I. Friso-van den Bos

Utrecht University

Working memory (WM) is one of the most important predictors of mathematics performance in primary school children. A recent discussion has emerged concerning the possibilities to train WM in order to foster performance in other (related) domains. Some authors have found positive effects of WM training on WM performance, and transfer to other skills such as mathematical skills and reasoning. Other studies have shown that WM training benefits are limited, and that there is only little or no transfer to other skill. In the current study, the effects of a WM training on WM capacity was investigated in preschool children (ages 5 - 6). In addition, it was examined whether there was transfer of the WM training to non-trained number sense tasks, with number sense being an important precursor of later mathematical skills. Kindergartners (N = 117), all performing below-average on number sense measures, were placed in one of three conditions. Children enrolled in a WM training were trained in both verbal and visuospatial WM, while children enrolled in a number sense training received training in age-relevant aspects of number sense. Children in the control group did not receive training. Children were trained in small groups in 25 sessions lasting 30 minutes, and the content of sessions was standardised. Before and after the training, performance was assessed on word recall forward and backward, dotmatrix, odd one out, number lines, number comparison, counting, and addition. Training gains were analysed using hierarchical linear modelling. Children who received the WM training showed greater gains in visuospatial, but not verbal, WM than children in the control group. No transfer effects to the number sense tasks was found. Children in the number sense training, however, showed gains in symbolic number sense and mathematics measures. In addition, this training also led to gains in visuospatial WM. This suggests that number sense training is not only more beneficial to facilitate early numerical performance than WM training, but can also lead to gains in WM performance. This may be the result of activation of WM systems during the training of number sense tasks, leading to increases in performance.

Presentation 2:

Developmental improvements in the use of the semantic grouping strategy: a role for attentional/executive resources?

T. Schleepen

Maastricht University

The ability to group information on semantic category is essential for memory and learning. It is however not until early adolescence that children start to successfully use such strategies. The causes for this late development are not clear, although one of the reasons might be a lack of attentional resources needed for the application of elaborative strategies. Cinan (2003) showed that the process of encoding semantic categories (clusters) demanded high attention resources in adults. In the present study we investigated what effects manipulation of attention resources during the study or the retrieval phase of a free recall memory task had on category retrieval (indexed by clustering scores) and recall performance. To this end, children aged 10-11 and 12-13-years and young adults had to learn 16 pictures for later recall that belonged to either 2 or 4 semantic categories (e.g. fruits, clothes). Attention resources were manipulated by letting subjects perform the memory recall task without or with a concurrent secondary attention (auditory tone monitoring) task that was administered during the study phase or the recall phase of the task. A 3 (attention load) x 2 (number of categories) x 3 (age group)

ANOVA was performed for clustering (indexing strategy use) and recall scores. Analyses of the clustering scores yielded a main effect of Number of Categories, showing that clustering was overall higher in the 4- than the 2- category condition. For recall, Number of Categories interacted with Age; only 12-13-year-olds and adults showed higher recall in the 4- than the 2- category condition whereas younger children's recall was not affected by the number of categories. Manipulations of attentional load, whether administered during study or retrieval, did not affect clustering scores but lowered recall in all groups irrespective of number of categories. Moreover, while manipulation of attentional load during study and retrieval had equal detrimental effects on recall in the older children (12-13 years) and young adults, in 10-11 year-olds recall was lower when attentional load was implemented during retrieval than during study. These results will be discussed regarding the role of attentional resources in the development of semantic grouping strategy use.

Presentation 3:

Distractor suppression in service of short-term memory: underlying mechanisms, and changes throughout adulthood

M. Vissers

University of Amsterdam

The ability to filter out distracting information is essential for goal-directed behavior. In everyday life, for example, being able to drive a car safely through crowded traffic requires the ability to suppress intensive processing of irrelevant events on the sidewalk. From previous research we know that the better one is able to ignore or filter out irrelevant information, the better one encodes relevant information. In the first part of my talk, I will address whether this relationship remains constant throughout different stages of adulthood. We investigated visuo-spatial short-term memory capacity and filtering ability using a change detection task with distractors in healthy young (17-23 years) and older adults (40-60 years). As hypothesized, our findings show that short-term memory capacity decreases with age. Notably, distractor suppression was also affected by age, but only when people need to process larger amounts of information. In the second part of my talk, I will discuss how the brain realizes suppression of irrelevant information when also encoding relevant information by presenting data on the electrophysiological correlates of short-term memory encoding and distractor suppression. In an EEG study we used a similar change-detection task with distractors to investigate event-related potentials and applied time-frequency analysis of the data. Large differences between individuals were found in the extent to which distracting information could be filtered out, as reflected in the amplitude of the contralateral delay activity. Furthermore, we found that different aspects of parieto-occipital alpha oscillations (power as well as phase) contributed to the ability to filter out irrelevant information. In sum, our findings reveal large inter-individual differences in short-term memory capacity and the ability to suppress irrelevant information, which are related to differences in oscillatory brain activity. They also show profound negative effects of age on short-term memory capacity and filtering ability, particularly under high information loads. This suggests that the relationship between working memory capacity and filtering ability is not identical across different stages of adulthood, and indicates that core cognitive functions such as the ability to selectively attend and encode goal-relevant information may already start to deteriorate after the age of 40.

Symposium

May 21st

15.00-16.15

Jagerskampzaal

Sexual minority youth and new directions in the minority stress model

Discussant: H. Bos

Previous studies showed that people with feelings of same-sex sexual attraction (SSA) or who identify as lesbian, gay or bisexual (LGB), are more vulnerable to psychological problems (e.g., Williams & Champman, 2011). This might be especially the case in a vulnerable developmental stage of life, such as during adolescence and young adulthood. An explanatory framework for the processes underlying the disparities between SSA and non-SSA and LGB and heterosexual adolescents/young adults is the minority stress model (Meyer, 1995, 2003). It is stated that sexual minorities may experience specific stressors such as experiences of (peer) victimization related to their feelings for someone of the same-sex or being gay or lesbian. In turn, these stressors may result in comparatively poorer mental health for sexual minorities.

Recently new directions in the minority stress model are described (e.g., Meyer, 2013; Hartzenduehler, 2013; Rieger & Savin-Williams, 2012), such as paying attention on: (1) interpersonal aspects as protective factors, (2) coping strategies, and (3) gender nonconformity.

In the present symposium we will address in three contributions new directions of the minority stress model. The first contribution – presented by Baams – is about whether having a same-sex romantic relationship (a specific interpersonal aspect) buffers the association between minority stressors and mental health on SSA adolescents and young adults. The second contribution – presented by Van Bergen – describes several different patterns of coping strategies that LGB youth use as a reaction on stigmatization. The third contribution – presented by Van Beusekom – is focusing on the relation between gender nonconformity and mental health and whether a possible association between these aspects is mediated by experiences with homophobic peer victimization and whether such a mediation would be different for SSA and non SSA adolescents and what the role of biological sex might be in such a mediation model.

These three contributions will add new knowledge in emerging directions and novel applications of minority stress theory on SSA and LGB adolescents and young adults.

Presenter 1:

A “same-sex” relationship: How a romantic relationship can protect same-sex attracted youth from the impact of minority stress

L. Baams

Utrecht University

Minority stressors (e.g., internalized homophobia, expected rejection, victimization) have been shown to negatively impact same-sex attracted (SSA) youth’s health and well-being (Meyer, 2003). In the past decades scholars have investigated potential protective and supportive factors, ranging from friends and family to teachers and gay-straight alliances. Many youth engage in their first romantic relationships during adolescence (Diamond, Savin-Williams, & Dubé, 1999; Furman & Shaffer, 2003), however the protective function of being involved in a romantic relationship has not been investigated.

Being involved in a romantic relationship may offer a unique form of social support for adolescents. Relations increase the development of a positive self-concept, and at the same time may support one’s sexual identity formation (Leary, 1999; Meyer, 2003). Keeping this in mind, we hypothesized that a romantic relationship would buffer (moderate) the link between minority stress and psychological well-being among SSA youth and young adults. Our sample comprised 308 SSA youth and young adults aged 16-24 years old. With an online survey we assessed minority stress components (expected rejection, meta-stereotyping, internalized homophobia, in-group blame), psychological well-being, and romantic relationship status.

The negative relation between the minority stress component “expected rejection” and psychological well-being was moderated by romantic relationship status, and thus suggests a protective role of romantic relationships among SSA youth. No such buffer effects were found for the other minority stress components.

The finding that being involved in a romantic relationship only protects against the impact of expected rejection underlines that buffering minority stress is a multi-faceted endeavor. It is highly relevant to consider this complexity in attempts to improve SSA youth and young adult’s lives. Multiple sources of support are needed to protect against all of the components of minority stress. The current study showed, for the first time, that being involved in a romantic relationship can protect SSA youth and young adults from the negative effects of expected rejection on psychological well-being.

Presentation 2:

‘Their Words Cut me Like a Knife’: Coping Responses of Dutch Lesbian, Gay and Bisexual Youth to Stigma

D. van Bergen

Groningen University

Stigmatization experienced by lesbian, gay and bisexual youth (LGB) is associated with reduced psychological well-being and suggests that coping is an important mediator. The study investigates the coping with stigma of Dutch LGB youth, and examines the social and individual mechanisms that influenced coping with stigmatization in relation to several contexts (family, school, religion, public sphere), as well as it analyzes changes in LGB youths’ coping over time.

Qualitative interviews were held with 30 LGB youth aged 16 to 25, who had regularly encountered homophobic responses. Through systematically comparing their self-acceptance and well-being with their emotional and behavioral responses to stigma and experiences with stigmatization, as well as the changes within these aspects over time, four coping with stigma

patterns were identified and elaborated.

The first two patterns were linked to avoidant coping, e.g. denial, repressing, concealing, lying about their same sex sexuality as well as applying gender conformity. Some LGB youth combined these responses with deconstructive emotional coping, e.g. depression, suicidal ideation, suicidal behavior, violence, alcohol abuse. Pattern one concerned participants who used such avoidant approach at the time of the interview, while pattern two consisted of interviewees who were in the process of moving on to more beneficial coping styles after they initially had relied on avoidant responses. In addition, two patterns of coping were identified in which LGB youth demonstrated resiliency and had established a positive stance toward their sexual orientation early on. Participants who fell under pattern three predominantly applied problem solving as a coping response, e.g. discussion, explaining, verbal retort, pro-active and deliberate coming out, seeking out affirmative environments, expressing emotions and communicating boundaries. Interviewees of pattern four mostly used constructive emotional coping i.e. comprehension, humor, a human rights discourse, social support of parents, relatives and friends.

Youths' coping patterns with stigma varied along the ability to critique a 'heteronormative habitus' (in Bourdieusian sense), as well as due to their access to social capital. Social capital emerged from within the interplay of family support, institutional and peer support, LGB organizations, a change in environment as well as personal strengths.

Presentation 3:

Gender Nonconformity, Homophobic Peer Victimization, & Mental Health among Young Dutch Adolescents

G. van Beusekom

University of Amsterdam

Homophobic peer victimization has been identified as a mediator of the relation between gender nonconformity and mental health in samples of same-sex attracted (SSA) youth and adult participants (e.g., Baams, Beek, Hille, Zevenbergen, & Bos, 2012). It remains unclear whether this mediation is the same for SSA and non-SSA youth. In this presentation, we investigate whether homophobic peer victimization mediates the relation between gender nonconformity and mental health among adolescents in general. We also examine whether this hypothesized mediation is moderated by feelings of SSA (SSA versus non- SSA) and (biological) sex.

Data were collected at five different secondary schools from urban areas in the Netherlands. Students filled in a questionnaire during regular class time. In total 1,027 secondary school students (boys: n = 517; Mage= 13.36; aged 12-16) participated in this study. Standardized instruments were used to assess adolescents' gender nonconformity, SSA, experiences with peer victimization and mental health (i.e., social anxiety and psychological problems). We carried out bootstrapped mediation analyses, separately for each studied mental health variable to assess the indirect effects of gender nonconformity on the mental health variables through homophobic peer victimization. Bootstrapped moderated-mediation analyses were carried out to examine whether the mediating role of homophobic peer victimization in the relations of gender nonconformity with mental health, were moderated by SSA and biological sex.

Homophobic peer victimization was found to be a partial mediator of the relations of gender nonconformity with social anxiety and psychological problems. The mediation effects were in the expected direction. Higher levels of gender nonconformity predicted more exposure to homophobic peer victimization, and a higher exposure to homophobic peer victimization predicted more social anxiety and psychological problems. Furthermore, the mediating role of

homophobic peer victimization in the relations of gender nonconformity with social anxiety and psychological problems were found to be stronger for SSA youth and stronger for boys. The findings indicated that among young Dutch adolescents high levels of gender nonconformity are related to higher levels of social anxiety and psychological problems, partly due to experiences with homophobic peer victimization, and that this especially the case for SSA youth and for boys.

Poster session

Individual differences in children's perceptions of classroom peer relations

H. Klip

Radboud Univeristy Nijmegen

The quality and structure of classroom peer relations are usually examined by peer nominations or observations. Although these techniques provide valuable insights in classroom peer relations, they do not tell how individual children experience the overall classroom peer environment. The current study aimed to fill this gap by examining individual differences in children's perceptions of the classroom with the Quality on Classroom Peer Relations scale (QCPR). It was expected that higher levels of peer acceptance, popularity, academic status, and self-concept, and lower levels of victimization were related to more positive perceptions of classroom cooperation, cohesion and affiliation, and less negative perceptions of classroom conflict and exclusion. Participants were 1491 5th Grade children (47.3% girls, M age = 10.6 years SD = 0.49) from 59 classrooms. In a classroom session, children individually completed peer nominations for social and academic status, a questionnaire on self-concept, and the QCPR. Hierarchical regression analyses showed that children's perceptions of the classroom peer relations were mainly predicted by children's self-concept. In addition, academic status negatively predicted perceptions of cooperation. Popularity positively predicted perceptions of conflict and exclusion. Victimization predicted affiliation, but only for girls. Implications for theory and practice will be discussed.

The effect of adult explanation on preschoolers' exploratory behavior in a museum setting

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During the last decade, preschoolers have become a more visible group in science museums. Museums have started offering activities for preschoolers, and have created areas or exhibitions specifically for this age group. In spite of this trend, the preschooler group is still underrepresented in visitor research.

An important question for future research is how adults can optimally guide preschoolers' exploration of exhibits. One possibility is by giving explanations. Few studies have connected parent explanation to children's exploratory behavior in museum settings. Fender and Crowley (2007) investigated the relation between one type of explanation, causal explanations, and preschoolers' exploratory behavior. However, besides causal explanations, several other domain-general types of explanation have been distinguished in visitor research, including open and closed questions, evidence descriptions, and directions (e.g. Crowley, Callanan, Jipson et al., 2001; Szechter & Carey, 2009). In a previous study, we addressed the relations between these types of explanation and preschoolers' exploration in a museum setting (Van Schijndel & Raijmakers, submitted). We found a positive relationship between one type of parent explanation, evidence descriptions, and preschoolers' exploratory behavior. Possibly, parents' evidence descriptions provide structure to children's exploratory process by directing or maintaining children's attention to relevant task aspects or evidence resulting from their manipulations. However, on the basis of this result no causal conclusions can be drawn. Therefore, the present study aims at replicating this result with an experimental paradigm.

In this study, preschoolers explored two exhibits in a science center- or school setting. Trained test-leaders guided children's exploration of exhibits, while either performing the evidence description, open question or minimal coaching style. For all styles, the test-leaders

aimed at positively motivating the child to explore. For the evidence description style, they additionally commented on exhibit features and the results of children's manipulations. For the open question style, they additionally asked open questions. Children's exploratory behavior was assessed with the Exploratory Behavior Scale (e.g. Van Schijndel, Franse & Raijmakers, 2010).

As children's exploration is at the core of their science learning (e.g. Gelman & Brenneman, 2004), this study contributes to uncovering mechanisms through which adults can optimally guide children's science learning.

Empathy & Bullying: A Social Relations Model Approach

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Based on the premise that bullies are deficient in empathy or may even lack it completely, many bullying prevention and intervention programs have incorporated empathy training as an essential element. However, despite the large number of studies, the exact association between empathy and bullying is not always as straightforward as we might think (for a review, see van Noorden, Haselager, Cillessen, & Bukowski, 2013). The two forms of empathy - cognitive and affective - are associated differently with specific bully roles (e.g., bullying, victimization, defending) and forms of bullying (e.g., physical, relational, cyberbullying). So far, research on empathy and bullying has merely focused on cognitive and affective empathy in general, without specifying the target. Therefore, the present study aims to investigate whether bullies differentiate between victims, bully/victims, and noninvolved peers on cognitive and affective empathy and whether they do this differently from those others. In order to test this, 800 children (7-12 years old) from 34 classrooms completed measures on bullying and victimization to identify their bully role (i.e., bully, victim, bully/victim, noninvolved). From each classroom, a boy and girl from each bully role were selected, resulting in 8 children per classroom and thus 272 children in total. These children completed an adapted version of the Basic Empathy Scale (BES; Jolliffe & Farrington, 2006), measuring affective and cognitive empathy towards each of the other seven children individually (e.g., "I become sad when I see other Child X crying"). That is, all participants answered each empathy item seven times. This round-robin design enables the investigation of dyadic relationships in empathy among different bully roles. For example, do bullies have less empathy for all others, or do they only have less empathy for victims? And do victims elicit less empathy from all others, or specifically from bullies? If empathy is indeed dependent on the actor, target, or specific relations, empathy training elements in anti-bullying programs can be adjusted to increase their impact on the decrease of bullying and victimization.

The pace of puberty and adolescent sexuality: the relations between pubertal timing, pubertal tempo and sexual behavior, intention, permissive attitudes

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In addition to an early pubertal timing (Steinberg, 2008), a faster pace (tempo) of pubertal development has been found to be more challenging for adolescents. Previous studies have found that boys who develop with a higher speed show higher rates of depression (Ge et al., 2003; Mendle et al., 2010).

The current study is the first to longitudinally examine both pubertal timing (e.g., how early or late one develops) and pubertal tempo (the speed with which one develops) and relates these concepts to kissing, masturbation, intention to have sex, sexual initiation, and

permissive sexual attitudes. In addition, we consider moderation by gender. Four-wave longitudinal survey data were used from a sample of 1297 Dutch adolescents aged 11-18 years at baseline. Participants were asked to fill out a questionnaire every six months over a period of 18 months.

Results from latent growth multigroup models (Mplus) showed that for boys an earlier pubertal timing (intercept at wave 1, relative to age- and gender-peers) and faster pubertal tempo (slope from wave 1 to wave 4) was related to the onset of kissing, masturbation, a stronger intention to engage in sexual behavior, and more permissive sexual attitudes. Pubertal timing, but not tempo, was related to sexual initiation among boys. For girls the results were somewhat different. Only pubertal timing, and not tempo, was related to the sexual behaviors and intention (see Table 1).

The relation between pubertal timing and sexual behavior and intention confirms previous research (Belsky, 1991; Steinberg, 2008), however the relation between pubertal tempo and sexual behavior and intention was only found for boys.

One theory that may explain the gender differences in puberty effects is the erotic plasticity theory (Baumeister, 2000) which describes how female sexuality is more malleable by context (social and cultural), whereas male sexuality seems more biology-driven and less malleable by context. Perhaps then, females experience an increased sexual drive and interest (like males), but feel more social pressure to inhibit these desires.

In conclusion, we suggest that with age adolescents become more interested in sexuality, and that this sexual development is amplified by a faster pubertal development.

Stability of Peer Victimization in Longitudinal Research: A Meta-analysis

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Although the number of longitudinal studies on peer victimization has increased in the past years, the information on the stability on victimization has not yet been clearly summarized. The current study was a meta-analysis on the stability of peer victimization to quantify the results from multiple longitudinal studies on peer victimization. In addition, the effect of potential moderators age, interval length, and type of informant (self, peer, teacher, other/combined) on the stability of victimization in longitudinal research was also examined. Stability of victimization was operationalized as the Pearson's r of victimization scores across two waves. A total of 77 longitudinal studies, containing one or more correlations (ranging 1 to 36) between peer victimization scores at different time points were included in the study. Multi-level analyses (Level 1 = correlations, Level 2 = publications) were used to control for dependencies within publications. In addition, the method of Maas, Hox and Lensvelt-Mulders (2004) was used to model the known Level 1 error variances.

Using the data from these 77 studies, the estimated stability of self-reported peer victimization at age 10 across an interval of 12 months was $r = .45$ ($p < .05$). The variance of the stability of victimization could be explained by interval length; stability decreased with larger intervals. In addition, there was a significant interaction between type of informant and age; stability of victimization increased as children got older for peer informants, but not for self informants. Despite the moderate stability of victimization over time, a part of the variance remained unexplained. This may be due to some factors that we were not able to examine because they were inconsistently reported across studies, such as type of peer victimization (e.g., physical vs. relational) and school transition or changing contexts within intervals. To facilitate future meta-analyses of predictors of the stability of victimization, more complete reporting of study characteristics in future studies on victimization is recommended.

Determinants of maternal fetal attachment in women from a community-based sample

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Background: Maternal fetal attachment has been found to be an important predictor for the developing relationship between mother and child. During the last decades, research on determinants of maternal fetal attachment has yielded inconclusive and even contradictory results. Until now, a process model in which multiple determinants of maternal fetal attachment are studied concurrently is lacking. The present study evaluates a process model (based on Belsky's model of parenting, 1984) in which the specific contributions of parental, contextual, and expected child characteristics to maternal fetal attachment were examined.

Method: Participants, 351 pregnant women from a community-based sample, completed questionnaires concerning their personality, attachment security, partner support, perceived stress, expected child temperament, and maternal fetal attachment at 26 weeks gestational age. Based on Belsky's model, a set of competing structural equation models were formulated and evaluated with path analysis.

Results: Maternal fetal attachment was found to be multiply determined by parental, contextual, and expected child characteristics. These factors explained 19% of the variance in maternal fetal attachment. Pregnant women who were more extrovert, conscientious, and agreeable, reported having higher levels of maternal fetal attachment. In contrast, those women who perceived more stress and expected having an infant with a dull temperament, reported lower levels of maternal fetal attachment.

Conclusions: This study demonstrated that the theoretical framework of Belsky's model is applicable for explaining variations in the quality of the mother-fetus relationship in the pregnancy period. More knowledge of the determinants of maternal fetal attachment could help to identify mothers at risk for developing sub-optimal feelings of attachment.

The role of the fronto-basal ganglia network in the development of intentional action and inhibition: a combined fMRI and DTI study

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Currently, most research on the development of response inhibition has focused on externally driven inhibition. The development of intentional action and inhibition has remained largely unstudied, possibly because of a lack of valid paradigms to study intentional inhibition in a developmental sample. In the present study, 19 children (aged 10-12) and 24 adults (aged 18-26) performed the child-friendly marble paradigm as a measure of intentional action and inhibition while lying in the scanner. In the marble paradigm, a marble is rolling down a ramp and participants are instructed to freely decide between responding and inhibiting responding to the rolling marble. Both children and adults decided to intentionally inhibit responding to the marble on approximately 50 % of the intentional trials. The fronto-basal ganglia network (including inferior frontal gyrus, putamen, caudate, and globus pallidus) was activated for the contrast intentional inhibition vs. intentional action, and this effect was more pronounced for children compared to adults. Furthermore, the subthalamic nucleus was activated during both intentional action and intentional inhibition, independent of age group. Currently, we are analyzing the DTI data to examine the relation between performance, neural activation and structural connectivity in the fronto-basal ganglia network. The findings will be discussed in relation to recent concepts of stimulus-driven and intentional action control.

Features of Fetal Alcohol Spectrum Disorders in children adopted from Poland

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Background. Research concerning adopted children has provided us with ample knowledge on the effects of early life risk factors such as deprivation in institutional care. An important risk factor that received little attention is prenatal exposure to alcohol. Fetal Alcohol Spectrum Disorders (FASD) refers to the range of effects that can occur in an individual as a consequence of prenatal exposure to alcohol. The aim of this study was to evaluate how many children adopted from Poland were diagnosed with FASD, and to what extent features of FASD were present.

Methods. Participants were Dutch families with 121 children (63 boys; response rate 67%) adopted from Poland between 1999 and 2006. On average the children were 3.0 years old (SD=1.6) at adoption, and 10.9 years old (SD=2.7) at assessment. Adoptive parents filled out a questionnaire including questions regarding a FASD diagnosis, prenatal exposure to alcohol, growth and educational attainment. They also answered the Behavior Rating Inventory of Executive Function (Gioia et al., 2000).

Results. Three groups could be distinguished: children with a FASD diagnosis (31%), children whose parents suspected FASD (21%), and children without a diagnosis or suspicion of FASD (49%). Children diagnosed with FASD more often were prenatally exposed to alcohol, showed growth deficiency, attended special education, and had difficulties with executive functioning than children whose parents did not suspect FASD. Children without FASD had fewer features of FASD, but some were also prenatally exposed to alcohol (49%), had growth deficiency (31%), attended special education (22%), or had difficulties with executive functioning (12%). Children whose parents suspected FASD typically scored between the other two groups with regard to the FASD features.

Conclusions. Children adopted from Poland showed a high risk for FASD, and strong indications were found that some children still go undiagnosed. Many adoptees with FASD came from backgrounds where they were exposed to various negative early life experiences, possibly also affecting their development. Considering the high risk for FASD, adoptive parents and professionals working with adoptees need to be aware of possible consequences of prenatal exposure to alcohol.

Briefly Reflecting Upon Unconditional Regard Buffers Children's Selves: A Field Experiment

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When children fail or make mistakes, they often experience painful feelings about the self, such as shame, insecurity, and powerlessness. A randomized field experiment tested whether briefly reflecting upon unconditional regard—the feeling that one is accepted and valued by others without conditions—can buffer the adverse impact of setbacks on self-feelings, even weeks later. Unconditional regard may convey to children that they are valuable without conditions. The experiment was timed in early adolescence, a time when unconditional regard might be especially scarce and needed. Participants (N=247, ages 11-15) were randomly assigned to reflect for 15 minutes on experiences of unconditional regard, conditional regard, or other social experiences. Three weeks later, after receiving their course grades, children reported their feelings. Replicating prior research, children who received lower grades experienced more negative self-feelings. Importantly, this well-established relationship was significantly attenuated among children who had reflected, three weeks previously, on

experiences of unconditional regard. Thus, reflecting upon unconditional regard buffered children's selves against the adverse impact of an academic setback over an extended period of time. Unconditional regard may thus be an important psychological lever for interventions to reduce negative self-feelings in the crucial developmental phase of early adolescence.

The role of sex hormones in feedback learning across development – a longitudinal fMRI study

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Adolescence is an important phase during which various changes occur, in order to successfully adapt to the environment. An important skill to enable this is feedback learning, i.e., the ability to successfully adjust behavior based on performance feedback. Developmental changes in feedback learning have been related to neurodevelopmental changes in (sub)cortical regions. However, sex hormones may influence these neurodevelopmental trajectories. In this longitudinal study we explore the role of testosterone and estrogen in feedback learning across development.

Testosterone has been associated with many social-affective processes, but the relation with cognitive processes is less well known. However, there is evidence that more 'affective' (e.g., monetary rewards) and more 'cognitive' forms of rewards (e.g., a '+' and '-' as performance feedback) rely on similar brain mechanisms (Tricomi, Delgado, McCandliss, McClelland, & Fiez, 2006). Also, testosterone shows a strong relation with affective reward processing in the brain (Van Honk et al., 2004). This may indicate an association between sex hormone levels and cognitive feedback processing, that needs further studying. Associations with estrogen are studied exploratively, given the few studies on estrogen and cognitive-affective processes. In two MRI sessions (two years apart), 254 participants, ages 8 to 25 on time point 1, performed a cognitive feedback-learning task (Peters, Braams, Raijmakers, Koolschijn, & Crone, 2014, under review) during which they received positive and negative performance feedback. Hormone levels were assessed on both time points. We expect individuals with more testosterone to show greater activation in brain areas related to positive feedback (e.g., the caudate nucleus). Furthermore, we expect individuals who show a greater increase in testosterone level over two years to show a greater difference in brain activation over two years. Preliminary analyses show pronounced neural activation in response to feedback in subcortical (caudate) brain regions. The relations over time with sex hormones are currently being analyzed.

The study of sex hormones and cognitive feedback learning will shed light on the complicated relation between hormones and cognition. This large sample combined with a longitudinal approach is unique in disentangling individual and developmental differences in biological mechanisms underlying learning.

Infants' ERP Responses When Perceiving Their Own Versus Others' Faces

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Learning to recognize oneself in a mirror is a developmental milestone. By 18 months, about 50% of infants show mirror self recognition (Amsterdam, 1972). The current study examined whether infants of this age show differences in their ERP response when presented with their own compared to another person's face. Moreover, we explored whether self-recognition during the mirror test was related to the possible differences in the ERPs for own versus other faces.

The 18-month-old participants performed the classic mirror test and an ERP experiment. During the mirror test, a red lipstick spot was surreptitiously applied to their face. The children were then placed in front of a mirror, and their behavior was observed. During the ERP experiment, infants were presented with photographs of their own face, another baby's face, their caregiver's face, and another caregiver's face. The four photographs thus differed on two dimensions, familiarity to the infant (familiar or unfamiliar) and age of the depicted person (adult or baby). The ERP analysis focused on the N290, a face-selective ERP component. The results show that infants show an enhanced response to their own face compared to other faces, that is, the N290 was larger for observation of the own face compared to others' faces. Half of the infants in our sample recognized themselves in the mirror. However, there were no differences in the ERP responses between the infants who did and did not recognize themselves in the mirror.

The current study showed that by the age of 18 months, infants display clear signs of self-recognition in their brain responses, as they reacted differently to their own faces compared to another baby's face as well as to another familiar face. No difference in brain response was found between infants who did and those who did not recognize themselves in the mirror, which is in accord with previous remarks on the possibility of false negative results in the rouge test (Asendorpf et al., 1996): Infants who do not display a reaction to the rouge spot on their mirror image yet might still very well be able to recognize their face.

Curiosity and discovery learning

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Discovery learning is at the core of science education. Several studies have investigated how different factors, such as adult guidance, influence the discovery-learning process (Klahr & Nigam, 2004; Dean & Kuhn, 2006). However, few studies have examined individual differences in discovery learning. In the present study, we investigated how individual differences in curiosity affect the discovery-learning process, and the extent to which children profit from adult guidance during this process. Curiosity was defined as a preference for uncertainty (Jirout & Klahr, 2011). As in discovery learning many variables are unknown, and children are asked to come up with a strategy for investigating these variables themselves, discovery-learning tasks generate a high amount of uncertainty. We therefore expected less curious children to demonstrate less exploration during discovery learning, and to profit more from adult guidance than more curious children.

187 7- to 9-year-olds were administered multiple curiosity tasks (Jirout & Klahr, 2011; Kreitler, Zigler & Kreitler, 1975), and a discovery-learning task. The discovery-learning task consisted of a balance scale on which transparent balls, each containing three colored blocks, could be hung. Children were asked to figure out which color block was the heaviest (Red/ Blue/ Green). This could be done by applying the Control of Variables Strategy (Chen & Klahr, 1999), that is, by comparing two balls that are identical except for one color change, such as RBG versus RBB. Only in the guidance condition the CVS principle was explained. After task performance, children's knowledge on the weight of the blocks was assessed. Results showed that high curious children performed better on the discovery-learning task than low curious children. No effect of guidance was found, nor a difference between curiosity groups in the extent to which they profited from guidance. Strikingly, even non-guided children performed well on the discovery-learning task, suggesting children possess intuitive knowledge about using informative comparisons. As discovery-learning is at the core of science education, these findings are of importance to educational practices.

Experimentally Manipulated Peer Influence on Adolescent Risk Taking: The Role of Puberty and Gender

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The Social Re-orientation Theory suggests that pubertal maturation triggers motivational and social (e.g., peer affiliation) tendencies in adolescence, which could lead to adolescent risk-taking, especially in social contexts wherein peer admiration and peer dominance are salient (Crone & Dahl, 2011; Forbes & Dahl, 2010). Hence, we first investigated whether peer presence will increase adolescent risk-taking on a risky driving task. We further hypothesized that pubertal timing will be linked to risk-taking and that this link will be stronger for adolescents who perform the task in a peer condition compared to an alone condition. Finally, since findings on gender moderated peer influence are inconsistent (Gardner & Steinberg, 2005), and differential pubertal timing effects for boys and girls exist (Mendel & Ferrero 2012), we explored gender as a moderator.

In total 373 adolescents (12-16 years; 49% female) were randomly assigned to either the “alone” or “peer” condition (n=76; 40 groups) consisting of three same-sex peers. The proportion of yellow stoplights on the stoplight game (Chein et al., 2011) for which the participant did not brake was operationalized as risk-taking. Pubertal development (Petersen, Crockett, Richards & Boxer, 1988) was self-reported. Structural Equation modeling analyses accounting for dependency within the group triads were conducted in Mplus 7.11. All (multi-group) path analyses controlled for age. The models had a good fit. There was no main effect of peer presence on risk-taking, however gender was a significant moderator, with boys taking more risks than girls, but only in the peer condition (Wald $\chi^2(1)=5.41$; $p=.02$). Furthermore, pubertal timing did not predict risk-taking in the peer- or alone- conditions, and gender did not moderate these findings.

Results lend only partial support to the Social Re-orientation Model, and suggest that while pubertal timing is not a risk-factor, peer presence might heighten sensitivity to the potential reward value of risky decisions, triggering adolescent risk-taking (Chein et al., 2011), especially in boys. Future research should explore why boys’ risk-taking might be more susceptible to peer influence compared to girls’ risk-taking, as findings concerning such gender differences are limited and mixed (e.g., Brown, Clasen & Eicher, 1986; Gardner & Steinberg, 2005).

The validation of the Bayley-III-NL

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Currently, the Bayley-III is used to monitor the cognitive, language, and motor development in Dutch children at risk for a developmental delay. This third version of the Bayley scales, however, is not yet adapted and validated for Dutch children. We recently developed the Bayley-III-NL and performed validation studies in which children were administered the Bayley-III-NL and one of the following measurements: the BSID-II-NL, the WPPSI-NL, the Schlichting language tests or the “Lexilijst” This presentation will show preliminary results of the validation studies.

382 children between 26 days and 42 months plus 14 days were included in this study. All children performed a Bayley-III-NL and one of the validation tests (BSID-II (N=143), the WPPSI-NL (N=59), Schlichting language tests (N=129), or the “Lexilijst”(N=51). Correlations between the scores on the Bayley-III-NL and the scores of the validation test were calculated.

First results show a moderate correlation between the WPPSI and the cognitive scale of the Bayley-III-N (.41). Regarding the language scales moderate to strong correlations (between .33 and .71) were found with the Schlichting language tests and the “Lexilijst”. Regarding the motor scales, a moderate correlation with the motor scale of the BSID-II-NL was found (.41).

The moderate to high correlations between the Bayley-III-NL and the validation tests indicate sufficient validity of the Bayley-III-NL. Therefore the Bayley-III-NL is a valid instrument to measure early child development and it can be used in the Netherlands for Dutch speaking children.

Development of Interpersonal Coordination During a Joint Drumming Task in Young Children

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During social interactions, the behavior of interacting partners becomes coordinated. Most studies exploring the development of coordination abilities have focused on how children coordinate with adults or with external stimuli (such as music). Coordination with peers of the same age has received, by comparison, very little attention. To our knowledge, only one study has investigated peer coordination in preschoolers (see Kleinspehn-Ammerlahn et al., 2011), and no studies have looked at younger children. This gap in our knowledge limits our understanding of how the ability to coordinate, and thus to accommodate to and anticipate the behavior of others develop.

Therefore, we tested 55 28-month-old dyads, 64 36-month-old dyads, and 66 44-month-old dyads in a dyadic drumming task (see Figure 1). When drumming, young children tend to produce short segments of closely related hits separated by long periods with no hits. Therefore, we measured children’s interpersonal drumming success both by cross-correlating the individual drumming hits of the two children as well as the duration of their drumming segments. To test whether a possible drumming relationship between the two children originated from both children mutually adapting to each other’s drumming or form a leader-follower relationship, we studied the initiation of overlapping drumming segments. Both at the level of the hits and the level of drumming segments, older children showed higher cross-correlations with the drumming of their partner, indicating better coordination. Moreover, for all age groups there was a clear leader-follower pattern in the overlapping drumming segments, indicating coordination with respect to the starts of their drumming segments.

The present findings provide evidence for interpersonal coordination abilities from 2 years of age with a clear developmental pattern across age groups. Moreover, these findings show that it is possible to examine interpersonal peer coordination already in young children, but it is important to study their coordination both at the level of the hits and segments.

Family study for profiling psychophysiological endophenotypes in social anxiety disorder

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Social anxiety disorder (SAD) is characterized by an intense fear of social or performance situations due to expected personal scrutiny. SAD is a common anxiety disorder with an early onset, long course and lifetime prevalence rates are estimated between 7-13% (Furmark, 2002). Since 70% of those individuals diagnosed with SAD will develop a comorbid

psychiatric disorder (e.g., depression) in their lifetime (Clauss & Blackford, 2012), it is imperative to identify reliable risk factors that aid in early detection of SAD, as well as the development of prevention/intervention methods.

Here we present a novel approach to investigating endophenotypes (i.e., heritable trait markers) of SAD by employing various electrophysiological paradigms in a multigenerational family design. We present the design and preliminary results of three experiments in which psychophysiological methods (EEG and ECG) will be used to investigate information processing biases related to the core symptomatology of SAD (i.e., pre- and post-event rumination associated with evaluative threat).

The first experiment will focus on anticipating and processing social evaluation ('Do you like me' task, adapted from Gunther Moor, Van Leijenhorst, Rombouts, Crone & Van der Molen, 2010). The second experiment will focus on anticipation of, and recovery from a social performance task, in which participants have to give a speech about themselves (Davidson, Marshall, Tomarken & Henriques, 2000; Westenberg et al., 2009; Miskovic et al., 2010; Rinck et al., 2013). The third experiment is a resting state task.

The impetus of the current endophenotyping is to examine whether the alleged psychophysiological correlates of fear of social evaluation can be found in non-affected relatives of SAD patients at a higher rate than in the general population. Results of this novel study should offer an interesting vantage point to understanding the disorder's pathophysiology and its genetic architecture, ultimately facilitating medical interventions to alleviate symptoms in SAD patients.

Exploring the Dynamics of Gestures' Role in the Construction of Cognitive Understanding

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As children communicate and construct cognitive insights, they use both their speech to express words and their hands to gesture. So far, research examining children's cognitive understanding has been focused on verbal behavior. However, research has shown that children are already able to express cognitive insights in gestures before they are able to put them into words. Gestures thus signal when a child is on the verge of learning something new, or to put it differently, signal a child's Zone of Proximal Development (Goldin-Meadow, 2003). In this way, gestures are an important, yet overlooked hallmark of cognitive development. Up until now, research on gestures' role in learning has focused on gestures as an indication of newly arising insights when children proceed from one task to the next, usually with some time in between. Since gestures are instances that occur in the moment however, patterns displaying gestures' leading role in the construction of cognitive insights are likely to be evident in children's performance during a task (i.e. in real time). This project intends to explore the interplay between these real-time gestures and the child's speech as he or she constructs cognitive understanding while performing a hands-on task within the area of science and technology. To explore this interplay between speech and gestures, new innovative methods are used that specifically emphasize the dynamical processes of how speech and gesture attune over time. A detailed understanding of these interactive processes, gestures' role in (real-time) learning and gestures' potential for providing a window on the forefront of a child's cognitive development, may have important implications for the educational practice. Gestures may give teachers a hand by indicating how real-time teaching practices can match with a child's individual needs.

The Balance-Scale Task Revisited: A Substantive Psychometric Modeling Approach

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We present two models based on a well-developed theory of cognitive development: an extension of the latent class model including item covariates and an implementation of the information integration model proposed by Wilkening and Anderson (1982). These models are used to investigate the knowledge representations of children on the balance-scale task, a seminal task within the field of cognitive development. The two presented substantive motivated psychometric models follow from predictions of a sequential rule-based or an information-integration stance. Both models are applied to a dataset collected with a paper-and-pencil test (N = 779) and a dataset collected with an online learning environment that included direct feedback, time-pressure and a reward system (Math Garden; N = 807).

Results of the paper-and-pencil data showed that children can be clearly assigned to a distinct set of classes representing qualitative different rules, matching the predictions following from a symbolic perspective. Whereas children tested with the Math Garden form much more implicit rules based on quantitative item characteristics, matching the prediction of a connectionist perspective. This application of substantive motivated psychometric models demonstrates that children form different knowledge representations on the balance-scale task when tested under a different set of task demands, what sheds new light on the discussion between symbolic and connectionist approaches on cognitive development.

Cross-situational word learning from natural utterances

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Infants start mapping meaning to words from six months onwards (Bergelson & Swingley, 2012; Shukla, White & Aslin, 2011). One possible mechanism that aids early word learning is cross-situational learning (L. Smith, 2010): infants keep track of the co-occurrences between words and objects to resolve the initial ambiguity between word – object relationships. Indeed, one-year-olds can learn words taught in a visually richer (i.e. more ambiguous) environment than typically used in a word-learning situation in the lab (Smith & Yu, 2008; Yu & Smith, 2010). By viewing different configurations of two objects out of six possible objects with their matching labels, these infants gradually learned the correct word-to-world mappings within 30 trials. However, the auditory context was still simplified: target words were only presented in isolation, whereas parents are more likely to teach their children novel words by framing them in utterances (Aslin, 1993). Therefore the present study tested 18-month-olds in a cross-situational word learning study, with target words presented in typical child-directed utterances (e.g., “Look, there are the foenie and the gemer again”; “There is the kaven, together with the gemer”).

It is unclear whether infants can benefit from or are hampered by words presented in a more natural speech setting. On the one hand, presenting words in utterances might prove more difficult, since infants need to additionally segment words from speech. On the other hand, these utterances contain several cues that point to the learning situation. We tested 16 Dutch 18-month-olds (planned: 24). Preliminary results suggest that infants learned the words: compared to a pre-naming phase, they increased their looks to named object by 7.4% ($T_{15} = 1.59$; $p = .06$). We plan to compare these results with another sample of 18-month-olds presented with only isolated target words. Together, results will inform us both whether infants can make mappings in a visually- as well as auditory-complex situation, and whether natural speech facilitates word learning.

Parent-adolescent conversations about love and sex in relation to adolescents' romantic and sexual experiences: a qualitative diary study

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Parents have the possibility to serve as a protecting factor with respect to the challenges that a maturing adolescent face in relation to sexual and romantic development. One way of influencing their adolescent child is by communicating about love and sex (DiIorio, et.al., 2003). However, results on how communication is related to adolescent sexuality have been inconsistent (Fisher, 1993). The aim of the current study was to extend existing research on parent-adolescent conversations about love and sex by focusing on the difference in personal meaning of these L&S conversations in comparison to other conversations, and relate this to romantic and sexual experiences. With the use of a diary study, adolescents reported during one year 1) their main thoughts and experienced events and 2) naturally occurring conversations with their parents. The 77 adolescents who participated at all three diary-waves averaged 15,2 years of age at W1. The reports about thoughts and experienced events were coded into two dimensions: 1. Topic; 2. Romantic and sexual experiences (Connolly & MCIsaac, 2011). In addition, the parent-child conversations were coded into three dimensions: 1. Topic; 2. Conversation Orientation; 3. Confirmation Orientation (Baxter & Akkoor, 2011). Sixteen percent of the sample reported at least one conversation about love and sex during one year and these conversations were mainly about being in love and romantic relationships. With the use of State Space Grids, the one-year conversation patterns of every adolescent were explored (Lewis, Lamey & Douglas, 1999). The results showed that some adolescents were consistently attracted to approach the parents to talk about love and sex and this did not differ from conversations about other topics. Other adolescents showed that they consistently avoid conversations about love and sex in comparison to other topics. This poster presentation will show in what way these adolescents differ from each other with respect to their romantic and sexual experiences.

Is attention-directing behavior of mothers in a play-situation related to toddler's attention skills during eye tracking tasks

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Background: Attention skills are needed for learning and development. Maternal behavior might facilitate or reinforce attention development in young children. Preterm children are at risk for attention difficulties. In the current study will be investigated how maternal attention-directing behavior is related to attention capacities in 18-month-old toddlers.

Method: Participants were 102 moderately preterm and 95 term born children. At 18 months of age the children and their mothers visited our lab for an eye tracking procedure and observation of mother-child interaction. The Utrecht Tasks of Attention in Toddlers using Eye tracking [UTATE], a test battery consisting of four eye tracking tasks was used to assess attention capacities. Maternal attention-directing behaviors were observed during 5 minutes of free play, 5 minutes reading a book, and 5 minutes making a puzzle.

Preliminary results: Moderately preterm children scored below term born peers on orienting ($F(1,195) = 12.54, p < .001, \text{partial } \eta^2 = .06$) and alerting ($F(1,195) = 17.03, p < .001, \text{partial } \eta^2 = .08$), but not on executive attention. Next to that, mothers of moderately preterm toddlers showed more redirecting behavior than mothers of term born toddlers ($F(1,212) = 9.85, p = .002, \text{partial } \eta^2 = .04$), but no difference was found for maintaining behavior. Regression analyses showed that, after controlling for

prematurity, less maternal redirecting behavior during interaction was related to higher scores on orienting ($\beta = -.15$, $p = .03$), on alerting ($\beta = -.22$, $p = .002$), and somewhat on executive attention ($\beta = -.14$, $p = .06$) as measured with the eye-tracking tasks. Maternal behavior reflecting attempts to maintain attention was not related to their children's outcomes regarding attention capacities.

Conclusion: Moderately preterm toddlers show less orienting and alerting attention skills than term born peers. Mothers of moderately preterm toddlers showed more redirecting behavior than mothers of term born toddlers. More redirection of attention of toddlers by mothers was found to be related to lower orienting and alerting attention capacities of their toddlers. Further study concerning maternal redirecting behavior in relation to attention capacities of the children is needed.

Language in science and technology lessons

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The current study aims at gaining insight into the relation between the language use of the teacher and his pupils during science and technology lessons. This explorative study is based on video-recorded natural interactions of Kindergarten and first grade elementary school teachers and pupils. This research is based on data originating from a previous intervention study, based on video feedback coaching (Wetzels, Steenbeek & Van Geert, 2012), which focused on general teacher skills such as improving the questioning skills of the teacher. In the current project, repeated video-recordings ($m=8$) of six teachers with a small teaching group were analyzed. Preliminary results of the intervention study show that the children reach a higher level of reasoning during the teacher training directed at the cognitive development of children (Wetzels, Steenbeek & Van Geert, in prep.). In the intervention, no specific attention was paid to language use. Under the assumption that language and cognition are to some extent related, it is expected that when the reasoning skills of the pupils increase because of a teacher training, the language skills of the pupils should increase as well. The results of the current study show a lot of variability between and within teacher-pupils interactions regarding the linguistic variables (lexical diversity, lexical sophistication, utterance length and turn length). Only one of the variables, lexical sophistication, increased during the intervention; teachers and pupils used more complex low-frequent words in the course of the intervention. Thus, the teacher training directed at more general teacher skills elicited higher skill levels and more complex words. One possible explanation can be that teaching science and technology automatically involves more complex vocabulary. However, the other linguistic variables showed no significant increases. The results are partially in line with the literature that states that children do not automatically acquire a more complex form language (Vygotsky, 1987; Lemke, 1990). The present findings provide support for developing a coaching module to optimize the language use in science and technology lessons additional to the existing training, which mainly focuses on the cognitive development of children.

Does using your environment aid the development of proportional reasoning?

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Embodied cognition theory states that cognition arises in an interaction between body, mind, and environment whereas cognitive research focusses mainly on the mind. If one accepts that cognition is embodied in the sense that it emerges in the interaction between the child (mind and body) and the environment, it does provide a useful framework for an account of how

children solve problems in the here and now. More specifically, it raises the question what resources (in the mind, body and environment) children use to solve a problem at hand. To study this, we presented 80 typically developing children with ‘traditional’ balance scale problems and a balance scale they could use if they chose to do so. Results showed large between subject variability in the readiness to use the balance scale. The level of explanation seemed to increase when children were confronted with concrete situations to explain, which only happened for those children that used the balance scale. Also, the pilot results indicate that children who explore more and deeper progressed more and provided better verbal explanations. Together, this suggests that cognition is not restricted to the child but that the environment is very important for showing understanding of proportional reasoning.