Child Development and Learning Difficulties Unit

This edition's spotlight
Accommodating children with additional needs

We have had a busy few months with hosting the Young Scientist Days, attending conferences around the UK and in Italy, running new research projects and writing up papers from existing projects. This newsletter's 'spotlight on' feature is related to carrying out research in children with neurodevelopmental disorders and discusses the changes we need to make as researchers and professionals to make them feel at ease. We also have some new training sessions for next year that you may be interested in.

Thank you for your continued support.

Best wishes,

Dr Elisa Back
(Co-ordinator for CDLD, Spring/Summer 2018)

Kingston University London

We need your help!!

All our research is reliant on children, parents and practitioners contributing to our studies. We are currently recruiting for the following studies and would really appreciate any help. Equally, if you have any ideas for future studies, please contact us on

CDLDKingston@gmail.com

NEW

What support do children with DS, WS and ASD really need?

Please send us a personal message via twitter, Facebook or email (in order to reduce the risk of unintended disclosure) about how your child's neurodevelopmental disorder has impacted on him/her or your family: and to send us an example from the past week. We would ask that you include your child's age and diagnosis in your message but not their name. For more info click here

MATHAUTISM

We need children with **ASD aged between 5 to 16** to help us understand how children with ASD learn maths.

To find out more go to: https://mathautism.wordpress.com

Kingston University London

Child Development and Learning Difficulties Unit

Emotion Understanding in Children with Autism

Aim of study
To examine whether children with Autism Spectrum Disorder (ASD) are able to understand and infer emotions / intentions in complex and naturalistic everyday situations.

Why is this important?
Previous studies have shown that some children with ASD are able to infer mental states and emotions of other people. However, further research is required into whether they understand the reasons behind how other people feel in more real-life social situations.

Who can take part in this study?
Typically developing children and children diagnosed with Autism Spectrum Disorder (ASD) between the ages of 6 to 11 years old.

What does taking part entail?
Participants will view videos that represent everyday life situations and will be asked comprehension questions related to the videos. Also, children will take part in verbal and nonverbal IQ tasks.

Who to contact?
For further information please contact:
Dr Elisa Back
e.back@kingston.ac.uk
Angela Barhouch (Researcher):
k1734058@kingston.ac.uk

New Publications

Figurative language comprehension in Autism Spectrum Disorders

A large amount of the language we use on a daily basis is non-literal, especially when we try to explain new or difficult topics. For example, if I want to say that it is raining an exceptional amount I may say that “it is raining cats and dogs”. Individuals with Autism Spectrum Disorders, (ASDs), as well as some other neurodevelopmental groups, find it difficult to understand these figurative expressions and often take them literally.

However, most previous studies have focused on lexicalized expressions and have only examined performance at one particular point in time, without examining how performance changes over development. In our most recent study we examined the comprehension of novel metaphor and metonymy in individuals with ASDs from a large age range, using both a cross-sectional (Experiment 1) and longitudinal design (Experiment 2).

Performance in the ASD group was lower compared to typically developing (TD) controls, across all ages. Importantly, the results from Experiments 1 and 2 showed that, although chronological age was not a good predictor for performance of either novel metaphor or metonymy in the cross-sectional design, performance improved when longitudinal data was considered. In addition, whilst performance in the adults with ASD correlated with verbal abilities for novel metonymy and with visuo-spatial abilities for novel metaphor comprehension, none of the cognitive abilities related positively to overall performance in the young participants with ASD.

These findings have positive implications for education and intervention studies as they suggest that performance can be improved. However, further studies about the cognitive mechanisms that drive this development are required before proper intervention studies can be put into place.

We would like to thank all of the adults and children who have taken part in this research project.

Reference Van Herwegen, J. & Rundblad, G. (2018). A cross-sectional and longitudinal study of novel metaphor and metonymy comprehension in children, adolescents, and adults with Autism Spectrum Disorder. *Frontiers in Psychology*, 9, 945.

You can read the full research article for free here

Other new publications from CDLD

- **Van Herwegen, J.,** Ashworth, A., & Palikara, O. (2018). Parental views on special educational needs provision: cross-syndrome comparisons in Williams Syndrome, Down Syndrome, and Autism Spectrum Disorders. *Research in Developmental Disability, 80,* 102-111.
- Booth, P., Clenton, J & **Van Herwegen, J.** (in press). Semantic and syntactic judgements: investigating the extent to which L1 learner choices influence the L2. *Systems.*
- Palikara, O., M. Ashworth & **Van Herwegen, J.** (2018). Educational outcomes of children with Williams syndrome: another neglected area of research? *Journal of Autism and Developmental Disabilities*.

Do you want to read more research articles about a certain topic?

If you are interested in more research about a certain topic, you can find published articles by searching "google scholar" for certain topics. Instead of paying in order to read an article, try googling the main author to see if they have a personal website where they publish their research or alternatively email them as they are allowed to send their work to you for free. See for example: www.jovanherwegen.co.uk.

CPD and training workshops 2018-2019

We are planning the following twilight workshops this year. If you would like to receive more information about these or wish to sign up, please email j.vanherwegen@Kingston.ac.uk

- ASD in the classroom (13/11/2018, 16-18h)
- Supporting mathematical development at home and in the classroom (26/02/2019, 16-18h)
- Identifying language difficulties in children (18/03/2019 16-18h)
- Reading development and dyslexia (June 2019 date to be confirmed)
- ASD and girls (June 2019 date TBC)
- Psychology Workshops for Year 6s (June/July, 2019)

Making an impact: research and governmental policies

Your or your child's contribution not only allows us to know more about children's development, it also allows us to collect evidence to help shape government policies. Members of the CDLD team interact with policy makers in a number of ways:

- Dr Jo Van Herwegen visited parliament in December 2017 to learn about how research can change policies.
- In December 2017, Dr Van Herwegen submitted evidence about early mathematical abilities and the effectiveness of the PLUS and newly developed DIGIT games intervention programmes to raise mathematical abilities in pre-schoolers to the House of Commons Science and Technology Select Committee, as a contribution to its inquiry into evidence-based early years intervention.
- In January 2018 Dr Jo Van Herwegen and Dr Olympia Palikara wrote to the Education Select Committee with evidence from the RASE project which showed that many parents of children with neurodevelopmental disorders experience difficulties with obtaining a good quality EHCP and that an evaluation of the SEND code of practice introduced in 2014 would be required. As a result the education select committee opened an enquiry in June 2018 into the SEND code of practice and further evidence from the RASE project was submitted.
- Dr Elisa Back is a committee member of the British Psychology Society (BPS) Developmental section which can involve advising policy makers. She is also a member of a specialist BPS autism group and is currently writing documentation for service providers across the UK.

Research and Neurodevelopmental Disorders: Rewards and Challenges

By Hayley Hunt

As part of my PhD research, I have been working with children and adolescents between the ages of 7 and 18 years of age. My research includes an eye tracking study that explores the understanding of complex mental states and basic emotions in dynamic scenes from the silent film The Artist. Half of the group I worked with had a formal diagnosis of Autism Spectrum Disorders (ASD), which is a lifelong condition that affects a person's ability to communicate with and understand others. Many of the children with ASD who I have worked with have repetitive behaviours, fixed interests, and heightened sensory systems that can cause anxiety when experiencing new situations.

So how do we account for the needs of children with additional needs, here at Kingston? It all starts at the very beginning of our research with an application to our Ethics Committee. Children and people with additional needs are deemed vulnerable populations so the committee ensures that the necessary steps are followed throughout the research study to protect the participants' rights and data.

People with ASD often have comorbid sensory processing needs causing their sensory system to be on high alert at all times; particularly when tired, overwhelmed or experiencing something new. Imagine feeling like this and then being asked to take part in a study, away from your sources of routine and familiarity; into the unknown? At Kingston we therefore create environments for our participants that allow them to access the research comfortably, working around and supporting their needs; we do this in varying ways:

"When you study the science of a disorder and then meet the people who experience it, you really do unleash a level of understanding beyond just books."

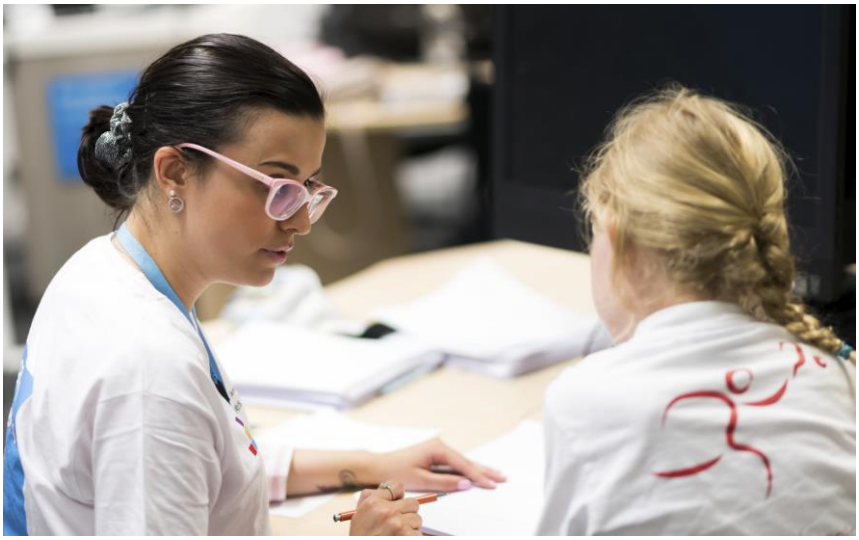
I usually try to make modifications to my set-up so that sessions remain consistent, yet flexible. I try to work on calming and relaxing a participant when I meet them, so it helps me to know a little bit about the child when I first meet them. I usually talk to a parent or teacher before meeting my participant and ask if there are any special provisions that need to be in place for them. It's a good opportunity to understand the level of needs of my participant: access to rooms, claustrophobia, fear of lifts, colours etc. Also I use this as an opportunity to know my participant better. Are they a football fan, a gamer, a horse rider? Having something to say when I meet my participant that instantly relaxes them is good; "Oh I hear you like…".

The amount of time I need for a participant with additional needs will greatly depend upon their needs. I plan a minimum of double the length of time compared to a typically developing participant. This allows me to offer more breaks, more time for questions, more time explaining, more time checking in with participants to ensure that they understand what they are doing, to check that they feel comfortable and that they are happy to carry on. Participants with ASD sometimes need more thinking time to process instructions. So, I always chat through instructions and then ask the child to tell me what they need to do, to check their understanding. They may need more rest breaks too, as many simply can't sit for as long as a typically developing child. In addition, our eye-tracking room and family room are sparsely decorated and there are no visual display boards on the wall to limit distractions. The rooms are located on a quiet corridor, where participants usually feel more able to concentrate because of reduced noise and few interruptions.

Making modifications for participants to access the study allows me to retain most of the data that I collect. However, sometimes it is necessary to stop a session and not continue with the research. I always ask if participants are happy to continue but sometimes the decision to stop the session is also my call especially when I feel the child is not comfortable enough.

Therefore, I watch participants' non-verbal behaviour: increased fidgetiness, a change in eye contact, repetitive requests and also increases in echolalia (verbal repetition), the use of finger flicking, repetitive noises, and body rocking. When I see any of these I either modify the protocol (For example in my eye -tracking study I could conduct my definitions assessment on the move and then I made a game of moving in between eye-tracking sessions for the children to move their bodies and get a well-earned break) or I stop the session

Some participants on the spectrum have trouble understanding hierarchy; so they can fail to understand the most appropriate way to socialise with a new adult. This means that all the work I put into making my session accessible to my participants, makes them feel so comfortable, that they may begin to blur the boundaries between researcher and participant. Frequently I have been asked to be friends; I have been invited to join on line gaming and social media groups. It's imperative here that I sensitively redefine the boundaries for my participant. I usually say that because I am a researcher, I'm working and I'm not allowed to make friends with people I work with, however much I would like to. I must make sure that my participant knows that I cannot be a friend. I always thank them for such a compliment stating that they must really be enjoying my session. After all sessions with all of my participants, I check in with parents or teachers, to let them know how the session went and feedback anything that may have come up during the session.



At Kingston we want to understand as much as possible about children with additional needs so that we can continue to contribute to the research and further our understanding for the future benefit of people with these disorders. Although making modifications to our research can be time consuming, it is vital that we do it in order to keep encouraging participants to take part. Working around peoples' needs with simple changes make big differences to the access to our studies. We couldn't do our work without your support. It just remains for me to say a very big thank you on behalf of the CDLD team at Kingston, for the time and effort you and your children have given to help support our research.

What are we working on?

This is an overview of current studies that are running within the unit. If you would like more information, please contact the lead researcher (in brackets),

Social and Cognitive development

Emotion understanding in ASD (Elisa Back)

Micro-facial expression recognition in autism spectrum disorders (Rashma Hirani and Elisa Back)

Social and academic inclusion of visually impaired children (Fiona Barlow-Brown and Ifigeneia Manitsa)

Language development

Early language development in Williams syndrome: a longitudinal study (Jo Van Herwegen)

Mathematical development

Mathematical development in visually impaired children (Jo Van Herwegen and Fiona Barlow Brown)

Mathematical development in children with Autism spectrum disorders (Erica Ranzato)

Mathemetical development in Sotos syndrome (Jo Van Herwegen, funded by Baily Thomas)

Gesture and mathematical concepts (Jo Van Herwegen and Wendy Ross)

Reading development

Large scale research project into letter reversals in typically and atypically developing children (Fiona Barlow-Brown)

Intervention Studies

Improving cognitive abilities and educational outcomes in children with Down syndrome through mediated learning (Jo Van Herwegen, Funded by Jerome Lejeune).

Other Studies

TRANSCEND: Transitions in Williams syndrome, Down syndrome and Autism Spectrum Disorders (Jo Van Herwegen, Olympia Palikara, Maria Ashworth, funded by Baily Thomas Charitable Fund)

Longitudinal development in Williams syndrome: WiSDom study (Jo Van Herwegen, funded by Williams Syndrome Foundation)

Past Events

Young Scientist Days 2018

Thank you to those of you who attended the Young Scientist Days (YSD). 90 children (4-11 year olds) took part in a number of games. These games were part of one or more different studies. The games were carried out by staff, PhD students as well as MSc students and BSc students. In addition to the research projects, we also had a large room where children could take part in various games and crafts, including face painting. Children were given a logbook that told them about the studies they participated in and we hope they enjoyed their goody bag! During the summer we will be analysing the data from the studies and we will provide you with an overview of the findings.

Dr Elisa Back
On behalf of the YSD team

Conference Presentations

Summer is academic conference season and we are proud to have had the opportunity to showcase some of the research being carried out in CDLD

Neurodevelopmental Disorders Annual Conference, Coventry, 21st of June 2018

Dr Elisa Back: Social cognitive profiles in children and adolescents with ASD

Rashma Hirani: The recognition of microexpressions: a comparison between children with ASD & TD children

Hayley Hunt: Real time language production and Theory of Mind assessment in ASD

Social Communication Across the Lifespan Canterbury, 27th - 29th June 2018

Dr Elisa Back: Cognitive and affective theory of Mind in children and adolescents with and without ASD

Rashma Hirani: Recognising microexpressions of mental states across the lifespan

Hayley Hunt: Real time language production & Theory of Mind assessment in ASD

World Down Syndrome Congress Glasgow, 25th-27th of July 2018

Maria Ashworth & Dr Jo Van Herwegen: Education provision for children with Downs' syndrome

ECID, June 2018, Padua, Italy

Erica Ranzato: Counting and subitizing abilities in Williams syndrome and Down syndrome: Evidence from eye tracking

"Listen to me" Multi-sensory Impairment Conference, Seashell trust Organisation, Manchester

Ifigenia Manitsa: The importance of social relationships with sighted peers to the self-concept of adolescents with visual impairment and the differences between both groups.

Who are we?

Founded in 2014, the CDLD unit is a research group consisting of academics, PhD students and researchers with a broad range of interests and expertise in how children learn and develop.

Principle Investigators
Dr Jo Van Herwegen (co-Ordinator CDLD)
Dr Elisa Back
Dr Fiona Barlow-Brown

PhD-students
Hayley Hunt
Rashma Hirani
Ifigeneia Manista
Erica Ranzato

Researchers
Maria Ashworth
Wendy Ross
Paulien Eijckeler

Administrator
Sheila Parmer

We welcome applications from volunteer researchers looking to gain valuable experience.

Welcome to our newest member

Sarah Ioannou

Sarah is an MSc student on the Psychology conversion course and is helping us out with some projects over the summer. Sara has spent over ten years working for the House of Commons advising and organising Members of Parliament in various capacities, mostly in international affairs policy areas.

Her academic background includes a degree in English (Cambridge, 2000) and an MA in International Studies (SOAS, 2006. She always enjoyed engaging with other cultures, living and working in Pakistan (1998) and Ghana (2003). During the past seven years she had three children and became interested in psychology and children's development.

Meet the researcher

Erica Ranzato

My name is Erica, I research mathematical abilities in children with neurodevelopmental disorders - such as Autism Spectrum Disorders, Down syndrome and Williams syndrome. We use techniques such as eye tracking, behavioural methods and surveys in order to better understand how to support the development of these fundamental skills.

We are currently developing a questionnaire to better understand how the Home Numeracy Environment influences the development of mathematical knowledge of children with neurodevelopmental disorders. We want to understand how important numeracy is for parents of children with neurodevelopmental disorders and investigate learning experiences at home.

Sometimes parents directly and intentionally teach their children about numbers, quantity or arithmetic. Some other times, enhancing their children numeracy knowledge is not the purpose of the shared activity, but it may occur incidentally - e.g., when they play board games. Our final goal is to support parents in providing a positive and effective learning environment for their children.

We are recruiting parents of children with ASD, DS, WS aged 4 to 16 years old! Please send an email to E.Ranzato@kingston.ac.uk if you are interested in taking part in this study.