Child Language Symposium
2015

The University of Warwick

20th – 21st July 2015

Conference information and scientific programme
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Conference Information
Welcome to CLS 2015

We are delighted to welcome you to CLS 2015, the inaugural Child Language Symposium! Since the first Child Language Seminar in 1977, the meeting has grown considerably and it was agreed following CLS 2013 that the term ‘seminar’ no longer reflected the importance and impact of the event. The name ‘Child Language Symposium’ was chosen to reflect this growth whilst keeping the familiar acronym ‘CLS’.

This year we received over 240 submissions for spoken and poster presentations and we have crammed as much as we can into the two-day schedule. The programme includes 72 spoken presentations across 6 sets of 4 parallel sessions and 104 posters, with presenters coming from nearly 30 different countries worldwide.

The conference is hosted by the University of Warwick’s Language and Learning research group, based in the Department of Psychology, and is supported by Coventry University’s Centre for Research in Psychology, Behaviour and Achievement.

We are very pleased to have four leading academics from across the field of child language to give the keynote speeches: Professor Julie Dockrell (UCL Institute of Education), Professor Susan Goldin-Meadow (University of Chicago), Professor Bob McMurray (University of Iowa) and Professor Marilyn Vihman (University of York).

Further information about the keynote speeches is available within this booklet along with the schedule for the conference, the conference locations and the full conference programme. Abstracts for the spoken presentations and poster presentations are also included. At the back of the book you will find a plan of the conference space and a map of the University of Warwick campus. If you have any further questions or require any assistance, please do not hesitate to stop and ask one of our team, who will be sporting blue badges, or stop at the welcome desk.

Lastly, all delegates are cordially invited to a welcome reception at the end of the first day’s talks – please join us on the concourse for a drink from 5:30pm.

We wish you a very pleasant visit to Warwick and we look forward to a successful and stimulating CLS 2015.

Katherine Messenger, Sotaro Kita and Julia Carroll

Child Language Symposium 2015 Organising Committee
**Abstract Reviewers**

We wish to extend a huge thank you to all our reviewers who read and scored a large number of abstracts in a very short period of time:

<table>
<thead>
<tr>
<th>Stephanie Archer</th>
<th>Suzanne Aussems</th>
<th>Helen Breadmore</th>
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<tbody>
<tr>
<td>Julia Carroll</td>
<td>Hester Duffy</td>
<td>George Dunbar</td>
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<td>Katherine Hall</td>
<td>Thomas Hills</td>
<td>Sotaro Kita</td>
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<td>Kate Messenger</td>
<td>Ian Mundy</td>
<td>Anna Samara</td>
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<tr>
<td>Luisa Tarczynski-Bowles</td>
<td>Janet Vousden</td>
<td>Sam Waldron</td>
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<td>Elizabeth Wonnacott</td>
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**Session Chairs**

We would also like to thank all those who kindly agreed to chair the spoken sessions.

<table>
<thead>
<tr>
<th>Stephanie Archer</th>
<th>Bene Bassetti</th>
<th>Nicola Botting</th>
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<tbody>
<tr>
<td>Helen Breadmore</td>
<td>Julia Carroll</td>
<td>Sarah Critten</td>
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<tr>
<td>Anna Cunningham</td>
<td>Hester Duffy</td>
<td>Lisa Gold</td>
</tr>
<tr>
<td>Debbie Gooch</td>
<td>Yvonne Griffiths</td>
<td>Anne Hesketh</td>
</tr>
<tr>
<td>Thomas Hills</td>
<td>Tamar Keren-Portnoy</td>
<td>Sotaro Kita</td>
</tr>
<tr>
<td>Danielle Matthews</td>
<td>Kate Messenger</td>
<td>Georgia Niolaki</td>
</tr>
<tr>
<td>Alexandra Perovic</td>
<td>Caroline Rowland</td>
<td>Anna Theakston</td>
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**Poster Prize**

We are delighted to announce that two prizes will be offered for the best poster authored by a postgraduate in each of the two poster sessions. Cambridge University Press and Equinox have both kindly donated £50 book vouchers.

A team of judges will choose the best posters and the winners will be announced at the final keynote session on Tuesday.

Poster Judges Monday:  Hester Duffy, Sotaro Kita

Poster Judges Tuesday: Julia Carroll, Sotaro Kita
Welcome to Warwickshire!

The University of Warwick is located in the heart of England, adjacent to the city of Coventry and on the border with Warwickshire.

Coventry is at the very heart of the UK, with excellent transport links to London, Birmingham, England’s second city, and beyond. It is perhaps most well-known as the historic centre of the car industry, for Lady Godiva’s infamous streak through the city and for St Michael’s cathedral – both the ruined shell of the 14th century edifice and the modern replacement built in the 1960s. But did you also know that it was the world’s first twin city, twinned with Stalingrad (now Volgograd) during the Second World War? Or that it was the birthplace of jet pioneer Sir Frank Whittle, founder of modern Australia Sir Henry Parkes, the poet Philip Larkin, pop impresario Pete Waterman, and, legend has it, St. George (slayer of dragons and patron saint of England)?

Coventry provides easy access to Warwickshire’s many historical towns: Warwick, its county town overlooked by the 1000-year-old medieval castle; Stratford-upon-Avon, home and birthplace of William Shakespeare; and Kenilworth, a smaller town built around the imposingly dramatic ruins of its own medieval castle. Nearby Royal Leamington Spa is an elegant regency spa town which also claims close associations to tennis, being the home of the first tennis club where the modern rules of the game were written. Rugby, and its school – one of the oldest independent schools in the UK, was the birthplace of rugby football. Nuneaton was the birthplace of one of Warwickshire’s other more notable residents in addition to the Bard, the novelist George Eliot.

More information is available at: www.visitcoventryandwarwickshire.co.uk

University of Warwick

Like many other UK universities, the University of Warwick is celebrating its 50th anniversary in 2015. In those 50 years, the university has grown substantially from the first cohort of 450 undergraduates admitted in 1965 to a student population of over 23,000. It now has 29 academic departments and over 50 research centres and institutes, in four faculties: Arts, Medicine, Science and Social Sciences. Warwick is consistently ranked in the top ten of British universities and was named the Times’ and Sunday Times’ University of the Year 2014/15. It is one of the UK’s leading research universities being ranked 7th overall in the UK in the 2014 Research Excellence Framework (REF) with 87% of Warwick’s research graded as ‘world-leading’ or ‘internationally excellent’.

Famous alumni of the University of Warwick include: writer and director Stephen Merchant; comedian Frank Skinner; children’s author Anne Fine; founder of Lonely Planet guides Tony Wheeler; broadcaster Simon Mayo and (for one term only) the musician Sting.

1 http://www.visitcoventryandwarwickshire.co.uk/coventrys-story
2 http://www.coventry.gov.uk/25thingsaboutcoventry
Language and Learning Group at the University of Warwick

The psychology department at the University of Warwick is special in its emphasis on language research. Faculty members and their research teams in the department are divided into three thematic groups, and the Language and Learning Group is one of them.

The Language and Learning Group investigates a wide ranging issues: **Visual word recognition** (James Adelman), **development of syntax** (Kate Messenger), **development of phonetics and phonology in infancy** (Stephanie Archer, Hester Duffy), **lexical development** (Sotaro Kita, Thomas Hills), **lexical semantics** (George Dunbar), **sleep and language learning** (Helen Brown), **children's L2 learning** (Helen Brown), **gesture** (Sotaro Kita), and **animal vocal communication and evolution of language** (Simon Townsend, to join the department in Oct. 2015).

The members of Language and Learning have strong links with academics in other departments with philosophical, computational and experimental approaches to language research: **computational modelling of language evolution** (Nicholas Chater), **L2 processing** (Bene Bassetti), **philosophy of socio-cognitive development** (Stephen Butterfill), **statistical learning** (Jennifer Misyak). Thus, the Language and Learning Group serves as an exciting intellectual hub for language research at the University of Warwick.

The Language and Learning group has various state-of-the-art facilities. We have infant testing facilities for looking time experiments, an EyeLink 1000 eye tracker, and a video-recording lab. We also have expertise in the analysis of "big data", computational modelling of cognitive processes, and video-based analysis of gestural behaviours.

More information is available at:
http://www2.warwick.ac.uk/fac/sci/psych/research/language/
Coventry University

Coventry University is the highest ranked modern university in all of the major league tables of UK higher education institutions. The university was awarded the Times and Sunday Times Good University Guide’s ‘Modern University of the Year’ accolade for two years running in 2014 and 2015, as well as being ranked 15th in the Guardian University Guide 2016.

The Literacy Research Group, The Centre for Research in Psychology, Behaviour and Achievement

The Centre for Research in Psychology, Behaviour and Achievement was formed in 2014 as part of Coventry University’s £100m research investment strategy, Excellence with Impact. The Centre focuses on the development and evaluation of theoretically-rooted, evidence-based psychological practice across a range of areas, including children’s literacy and developmental disorders.

Our literacy research intends to build on previous findings in four key ways. First, we continue to carry out research on the predictors of reading and spelling development and difficulties, including language skills such as prosodic awareness, morphological knowledge and broader skills such as visual attention and executive function. This work indicates that the causes of reading difficulties are more complex than previously supposed. Second, we investigate the role of so called ‘soft skills’ in literacy development. Classical cognitive models have ignored the role of personality, self-belief, motivation and engagement in literacy development, but it is likely that these factors are key. Third, we investigate how use of new technologies such as the internet, mobile phones and tablets can affect and be affected by print-based literacy skills. Our final strand is perhaps the most important, and links ideas from the first three strands. This is the development and evaluation of effective reading intervention programmes. This strand ranges from more practically oriented work in collaboration with the Reading Agency and National Literacy Trust to large scale interventions such as the project currently funded by the Educational Endowment Foundation and planned work on providing teachers with action-based research skills.
CLS Locations and Rooms

The conference will take place on the Science and Physics concourses, located in the Chemistry and Physics departments (please see the map at the back of this book). All rooms and locations are on the same level within easy reach of each other.

If you enter the Chemistry building via the pedestrian bridge across Library Road, you will arrive on the correct floor for the conference and the welcome desk will be located just inside this entrance. The pedestrian bridge can be accessed via steps outside of the library. Please follow signs to the library across campus; student volunteers will be waiting nearby to direct you into the building.

All keynote speeches will be given in Lecture Theatre 3 (LT3), which can be found off the Science concourse. Session A is also located in LT3; Sessions B and C are located in Lecture Theatres 4 (LT4) and 5 (LT5) respectively which are situated in front of LT3. Session D will run in the Physics Lecture Theatre (PLT) which can be found on the Physics concourse – continue along the Science concourse and through the doors leading to the Physics concourse and the lecture theatre is on the left.

Poster boards are located along both the Science and Physics concourses and are numbered to help you find specific posters; please see the programme for poster board numbers. The poster session runs concurrently with a buffet lunch which will be served throughout both concourses, as will refreshments during the coffee breaks and drinks during the welcome reception. Some chairs are also available on these concourses.

All delegates are cordially invited to the drinks reception at 5:30pm on Monday. The conference dinner will begin at 7pm on Monday for those who have registered a place. The dinner will take place in the Chancellor’s Suite on the first floor of the Rootes building (see campus map), which is across campus from the main conference location, situated next to the Student’s Union.

The University of Warwick campus offers a variety of outlets for food and drink. Please see the ‘Suggestions for eating and drinking’ sheet in your delegate pack for further information or ask one of the conference team for a recommendation.

The campus is set in 290 hectares of countryside and offers a number of short walks should you desire some fresh air or exercise! Please see the University website (www2.warwick.ac.uk/services/estates/campus/walks) for details of the Sculpture and Energy Trails through campus or the Lakes walk.
Scientific Programme
Keynote Speakers

Monday 20th July

9:00 Susan Goldin-Meadow, University of Chicago

From homesign to sign language: Creating language in the manual modality

Deaf children who cannot learn the spoken language that surrounds them, and have not been exposed to sign language by their hearing parents, nevertheless use their hands to communicate – they gesture. These gestures, called homesigns, take on many of the forms and functions of language. I first consider properties of language that homesigners can, and cannot, develop by comparing their linguistic systems to a newly emerging sign language in Nicaragua. I then take an experimental approach to when gesture does, and does not, take on linguistic properties by examining hearing individuals asked not to speak and instead communicate using only their hands. Although these silent gesturers can create some properties of language on the spot, they do not create all of the properties that homesigners develop over time.

4:30 Julie Dockrell, UCL Institute of Education

The role of oral language skills in supporting written text generation: Evidence from children with Language Learning Difficulties (SLI).

Research on writing has lagged behind research on reading and oral language development. The production of written text draws on the writer’s knowledge and a range of cognitive and linguistic skills. Complex effects are evident at word-, sentence- and text-levels of written language. For English speaking children the majority of research has focused on transcription skills, that is handwriting and spelling. The role of oral language skills in supporting written text generation is underspecified. Yet oral language skills support children’s generation of ideas and the translation of these ideas into words and sentences. Children who experience difficulties with oral language provide a critical test case to examine the ways in which components of the language system impact on written text production. Drawing on a series of studies with children who have language-learning difficulties (SLI) the ways in which oral language skills influence written text production at word, sentence and text level are outlined. These studies raise methodological questions about the assessment of written text production and, importantly, the adequacy of current models to capture the development of written text generation. Implications for evidence-based practice are outlined.
Tuesday 21st July

9.00  Marilyn Vihman, University of York

*Advances in language development: Learning words and learning sounds*

Word learning includes knowledge of form in relation to situational meaning; word production provides a more stable, more reliable, better-established representation than word recognition alone; and expressive vocabulary size is a strong predictor of word learning. Evidence from children learning a range of languages suggests that word forms are initially learned as wholes, with better representation of what is familiar from existing patterns. Furthermore, phonological advance is nonlinear: The child deviates from target word forms as she assimilates challenging items to her own templates. Thus longer-term phonological knowledge of segments likely emerges from larger production units through subsequent implicit analysis.

4:30  Bob McMurray, University of Iowa

*The slow development of real-time language processing: Interactions across timescales in lexical development.*

Every utterance contains substantial ambiguity. The acoustic input is variable; word meanings are context dependent; and the temporal nature of speech creates temporary ambiguities. Skilled listeners deploy complex processes that unfold over milliseconds to solve these problems. However, developmental work often treats these real-time processes as a matter of performance, focusing on how children acquire language knowledge. This talk challenges this in the context of lexical and phonological development. I present work using the visual world paradigm with typically developing children, and atypical populations to show that these real-time processes develop quite late (through adolescence) and that qualitative differences in real-time processing “matter” for functional language outcomes. I investigate several mechanisms for these developmental changes including inhibition and associative pruning, and present computational modeling showing how real-time and developmental processes are deeply intertwined.
# Conference Schedule

## Monday 20th July

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00 – 8.45</td>
<td>Arrival / Tea and coffee</td>
<td><em>Science and Physics concourse</em></td>
</tr>
<tr>
<td>8.45 – 9.00</td>
<td>Welcome and orientation</td>
<td><em>LT3</em></td>
</tr>
<tr>
<td>9.00 – 10.00</td>
<td>Keynote 1 Susan Goldin-Meadow Introduced by: Sotaro Kita</td>
<td><em>LT3</em></td>
</tr>
<tr>
<td>10.15 – 11.30</td>
<td>Parallel Paper Presentation Session 1</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
</tr>
<tr>
<td>11.30 – 12.00</td>
<td>Coffee break</td>
<td><em>Science and Physics concourse</em></td>
</tr>
<tr>
<td>12.00 – 1.15</td>
<td>Parallel Paper Presentation Session 2</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
</tr>
<tr>
<td>1.15 – 2.45</td>
<td>Lunch</td>
<td><em>Science and Physics concourse</em></td>
</tr>
<tr>
<td>1.45 – 2.45</td>
<td>Poster Session 1</td>
<td><em>Science and Physics concourse</em></td>
</tr>
<tr>
<td>2.45 – 4.00</td>
<td>Parallel Paper Presentation Session 3</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
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<tr>
<td>4.00 – 4.30</td>
<td>Coffee break</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>4.30 – 5.30</td>
<td>Keynote 2 Julie Dockrell Introduced by: Julia Carroll</td>
<td><em>LT3</em></td>
</tr>
<tr>
<td>5.30 – 6.30</td>
<td>Drinks reception</td>
<td><em>Science and Physics concourse</em></td>
</tr>
<tr>
<td>7.00</td>
<td>Conference dinner</td>
<td><em>Chancellor’s Suite, Rootes</em></td>
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<tr>
<td>Time</td>
<td>Activity</td>
<td>Location</td>
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<tr>
<td>8.30 – 9.00</td>
<td>Arrival / Tea and coffee</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>9.00 – 10.00</td>
<td>Keynote 3 Marilyn Vihman Introduced by: Stephanie Archer</td>
<td><em>LT3</em></td>
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<tr>
<td>10.15 – 11.30</td>
<td>Parallel Paper Presentation Session 4</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
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<tr>
<td>11.30 – 12.00</td>
<td>Coffee break</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>12.00 – 1.15</td>
<td>Parallel Paper Presentation Session 5</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
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<tr>
<td>1.15 – 2.45</td>
<td>Lunch</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>1.45 – 2.45</td>
<td>Poster Session 2</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>2.45 – 4.00</td>
<td>Parallel Paper Presentation Session 6</td>
<td><em>LT3, LT4, LT5, PLT</em></td>
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<tr>
<td>4.00 – 4.30</td>
<td>Coffee break</td>
<td><em>Science and Physics concourse</em></td>
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<tr>
<td>4.30 – 5.30</td>
<td>Keynote 4 Bob McMurray Introduced by: Kate Messenger</td>
<td><em>LT3</em></td>
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<tr>
<td>5.30 – 5:45</td>
<td>Closing remarks and poster award Sotaro Kita</td>
<td><em>Science and Physics concourse</em></td>
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## Scientific Programme: Monday 20th July

### Spoken presentations

#### Session 1  10:15 – 11:30 am

<table>
<thead>
<tr>
<th>Session 1A</th>
<th>Room LT3</th>
<th>Chair: Sotaro Kita</th>
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</thead>
<tbody>
<tr>
<td>Paul Vogt, J. Douglas Mastin</td>
<td>Cultural differences in infants’ non-verbal communication and vocabulary development.</td>
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<tr>
<td>Susanne Vogt, Christina Kauschke</td>
<td>Impact of iconic gestures on word learning in children with specific language impairment.</td>
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<tr>
<td>Elena Lieven, Sabine Stoll</td>
<td>What does speech add to points and vice versa? Preschoolers and their surrounding environment in three cultures.</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Session 1B</th>
<th>Room LT4</th>
<th>Chair: Danielle Matthews</th>
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</thead>
<tbody>
<tr>
<td>Wendy Best, Lucy Hughes, Anna Kapikian, Kate Shobbrook, Michael Thomas, Silvia Roncoli, Anna Fedor, Jackie Masterson</td>
<td>Intervention for children with word-finding difficulties: a Randomised Control Trial and case series study.</td>
<td></td>
</tr>
<tr>
<td>Michelle McGillion, Jane Herbert, Julian Pine, Danielle Matthews</td>
<td>An RCT to test the causal role of caregiver contingent talk in the language learning of high and low SES infants.</td>
<td></td>
</tr>
<tr>
<td>Susan Ebbels, Catherine Baker, Lily Bell, Sally Brockbank, Caroline Heine, Nataša Marić, Amy Morrison, Hilary Nicoll, Lucy Nicoll, Alexandra Perovic, Victoria Roberts, Jackie Scott</td>
<td>Intervention on comprehension and production of complex language for adolescents with developmental language impairments.</td>
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<table>
<thead>
<tr>
<th>Session 1C</th>
<th>Room LT5</th>
<th>Chair: Julia Carroll</th>
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</thead>
<tbody>
<tr>
<td>Karin Keller</td>
<td>Are second language trajectories modulated by temperamental characteristics?</td>
<td></td>
</tr>
<tr>
<td>Eirini Sanoudaki, Anna Bodini</td>
<td>Dysfluency in multilingual acquisition.</td>
<td></td>
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</tbody>
</table>

#### Session 2  12:00 – 1:15 pm

<table>
<thead>
<tr>
<th>Session 2A</th>
<th>Room LT3</th>
<th>Chair: Anna Cunningham</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eliana Mastrantuono, David Saldaña Sage, Isabel Rodríguez Ortiz</td>
<td>Eye movements during sign-supported speech comprehension by deaf adolescents.</td>
<td></td>
</tr>
<tr>
<td>Mairead MacSweeney, Fiona Kyle, Margaret Harris, Charles Hulme, Hannah Pimperton</td>
<td>The relationship between speechreading, phonological awareness and reading proficiency in deaf children.</td>
<td></td>
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</tbody>
</table>
### Session 2B Room LT4 Chair: Bene Bassetti

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Julia Carroll, Helen Breadmore</td>
<td>Predicting reading comprehension: the roles of phonological and morphological knowledge in typical and atypical readers.</td>
</tr>
<tr>
<td>Kamila Polišenská, Shula Chiat</td>
<td>Is nonword repetition the answer to bilingual assessment?</td>
</tr>
<tr>
<td>Anja Starke</td>
<td>Selective mutism in bilingual children: Effects of anxiety, language skills and parental cultural adaptation.</td>
</tr>
</tbody>
</table>

### Session 2C Room LT5 Chair: Thomas Hills

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>Nina Niggemann, Christina Kauschke, Ulrike Domahs</td>
<td>Lexical processing during the third year of life – an ERP study.</td>
</tr>
<tr>
<td>Simon Snape, Andrea Krott</td>
<td>The role of inhibition in structural alignment.</td>
</tr>
<tr>
<td>Tomas Engelthaler, Thomas T. Hills</td>
<td>Shape bias in early word learning: Feature distinctiveness predicts age of acquisition.</td>
</tr>
</tbody>
</table>

### Session 2D Room PLT Chair: Caroline Rowland

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Title</th>
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<tbody>
<tr>
<td>Evan Kidd, Joanne Arciuli</td>
<td>A domain-general capacity for statistical learning independently predicts children's comprehension of specific syntactic structures.</td>
</tr>
<tr>
<td>Amy Bidgood, Ben Ambridge, Julian Pine, Caroline Rowland</td>
<td>Innate movement or semantic prototypes? Evidence from production-priming of passives.</td>
</tr>
<tr>
<td>Akiko Okuno, Thea Cameron-Faulkner, Anna Theakston</td>
<td>How does the world look to you?</td>
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### Session 3 2:45 – 4:00 pm

### Session 3A Room LT3 Chair: Helen Breadmore

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Title</th>
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<tbody>
<tr>
<td>Gillian Clark, Jarrad A. G. Lum</td>
<td>Children with specific language impairment can implicitly learn second-order but not first-order sequences.</td>
</tr>
<tr>
<td>Marta Casla, Irene Rujas, Eva Murillo, Sonia Mariscal</td>
<td>Simultaneous influence of linguistic variables, vocabulary levels and experience on early word learning: Fast-mapping in Spanish typically-developing and late-talking children.</td>
</tr>
</tbody>
</table>

### Session 3B Room LT4 Chair: Alexandra Perovic

<table>
<thead>
<tr>
<th>Presenters</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rebecca Kam, Nicole Porter, Lisa Rumney, Kristelle Hudry</td>
<td>The Impact of bilingual exposure on verbal and non-verbal communication skills of children with Autism Spectrum Disorders.</td>
</tr>
<tr>
<td>Rikke Vang Christensen, Elisabeth Engberg-Pedersen</td>
<td>Relevant content and characters’ mental states in narratives told by Danish children with autism, language impairment, or typical development.</td>
</tr>
</tbody>
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### Session 3C Room LT5 Chair: Tamar Keren-Portnoy

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<td>Sharon Armon-Lotem, Sarit H. Ben-Oved</td>
<td>Lexical knowledge and ethnolinguistic identity among Hebrew-speaking children from Amharic-speaking families.</td>
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<td>Karolina Mieszkowska, Joanna Kołak, Magdalena Łuniewska, Ewa Haman, Zofia Wodniecka</td>
<td>Vocabulary size of Polish migrant children living in the UK.</td>
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Krupa M, Prakash Boominathan, Swapna Sebastian, Padmasani Venkat Ramanan
Caregiver-child interaction in typically developing children and children with autism: A study from south India.

**Session 3D  Room PLT  Chair: Anna Theakston**

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<td>Michelle Davis, Thea Cameron-Faulkner, Anna Theakston</td>
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<td>Virve Vihman, Elena Lieven, Anna Theakston</td>
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<td>Wenchun Yang, Angel Chan, Evan Kidd</td>
<td>Revisiting the acquisition of relative clauses in Mandarin-speaking children: Universal versus typological perspectives.</td>
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### Poster presentations

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<td>Andrew Holliman, Sarah Critten, David Hughes, Clare Wood</td>
<td>Modelling the relationship between prosodic sensitivity and emergent literacy</td>
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<td>Lydia Venclova, Svetlana Kapalkova, Kamila Polisenska</td>
<td>Efficacy of a reading and language intervention on comprehension and spelling skills: A randomized controlled trial with children learning to read</td>
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<td>Heather Payne, Mairead MacSweeney, Bencie Woll</td>
<td>Assessing language lateralisation in preschoolers using functional transcranial Doppler sonography</td>
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<td>Darinka Andelković, Maša Popović, Maja Savić</td>
<td>Naming of the human body parts in Serbian: A developmental perspective</td>
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<td>Zoe M Flack, Jessica S Horst</td>
<td>The role of attention in word learning from shared storybooks: Contextual repetition aids word learning.</td>
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<td>Mengru Han, Nivja de Jong, René Kager,</td>
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<td>Orthographic facilitation for oral vocabulary acquisition: The effect of instructions and spelling-sound consistency</td>
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## Scientific Programme: Tuesday 21\textsuperscript{st} July

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<td>Reading strategies in children with ASD while reading texts and answering questions that do, or do not, require an inference to be generated: An eye movement study.</td>
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<td>Conor McNeilly, Yvonne Griffiths, Harry Purser, Jo Van Herwegen</td>
<td>Which cognitive abilities influence the development of reading abilities in Williams Syndrome and Down Syndrome?</td>
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<td>Jenny Freed, Catherine Adams, Elaine Lockton</td>
<td>Predictors of reading comprehension ability in primary school-aged children who have pragmatic language impairment.</td>
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<td>Paula Cronin, Rebecca Reeve, Stephen Goodall, Patricia McCabe</td>
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<td>Ha N. D. Le, Lisa Gold, Fiona Mensah, Patricia Eadie, Edith L. Bavin, Margot Prior, Lesley Bretherton, Melissa Wake, Sheena Reilly</td>
<td>Service utilization and costs of low language in children between 5-7 years: Australian population-based study.</td>
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<td>Katharina Salgert, Silke Fricke, Joy Stackhouse, Annette Fox-Boyer</td>
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<td>Sophie Kern, Florence Chenu, Ludvine Glas</td>
<td>Role of frequency and phonetic complexity on first words order of acquisition.</td>
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<td>Tamar Keren-Portnoy, Rory DePaolis, Marilyn Vihman</td>
<td>A dynamic systems approach to understanding the role of babble, word recognition and segmentation in the emergence of a lexicon.</td>
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<tr>
<td>Lynne Duncan, Cornelia Gollek, Douglas Potter</td>
<td>Executive functions and theory of mind in relation to language development among 3-year-olds from low socio-economic backgrounds.</td>
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<tr>
<td>Alexandra Perovic, Chris Donlan, Sarah Becket, Jacqueline O’Donovan</td>
<td>Comprehension of quantifiers and numerals in ASD: Evidence for a degree of pragmatic competence.</td>
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<tr>
<td>Yani Malai, Gabriella Rundblad</td>
<td>Too much or too little? The comprehension of overstatements and understatements in typically developing (TD) individuals and those with Autism Spectrum Disorders (ASD).</td>
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<td>Martina Penke, Eva Wimmer, Bernadette Witecy</td>
<td>Morphosyntactic development in German children with Down's syndrome.</td>
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<td>Nelli Kalnak, Myriam Peyrard-Janvid, Hans Forssberg, Birgitta Sahlén</td>
<td>Reading skills in relation to family history of literacy problems in children with Specific Language Impairment.</td>
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<td>Helen Cain, Nicola Botting, Natalie Hasson</td>
<td>Using dynamic assessment to explore early risk markers for communication difficulties.</td>
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<td>Jean Quigley, Sinead McNally</td>
<td>Resilience in early child language development.</td>
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<td>Annette Scheper, Wendy Boelhouwer</td>
<td>The relationship between narrative abilities and executive functions in Dutch children with SLI.</td>
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<td>Hester Duffy, Stephanie Archer, Sotaro Kita</td>
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<td>Alaa Almohammadi, Gabriella Rundblad</td>
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**2:45 – 4:00 pm**

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<td>Stephanie Ainsworth, Stephen Welbourne, Anna Woollams, Anne Hesketh</td>
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<td>English language proficiency at school entry and attainment over the first two years of school: A population study of children learning English as an additional language.</td>
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Laura Conway, Sheena Reilly, Melissa Wake, Patricia Eadie, Fiona Mensah, Angela Pezic  Language outcomes and comorbidities at 7 years in the Early Language in Victoria Study.


**Session 6C  Room LT5  Chair: Hester Duffy**

Sebastian Suggate  Is lexical processing for embodied vocabulary items linked to preschoolers’ fine motor skills?

Filip Smolik  Imageability, frequency and form class in lexical acquisition.

Katalin Tamasi, Cristina McKean, Adamantios Gafos, Barbara Hoehle  Using pupillometry to study early lexical representations: Mispronunciation detection in onsets.

**Session 6D  Room PLT  Chair: Kate Messenger**

Sarah Schimke, Saveria Colonna, Maya Hickmann  The development of discourse cohesion in French and German: General and language-specific determinants.

Friederike Voß, Mila Vulchanova, Pia Knoeferle, Hendrik Eshuis  Depicted actions and information structure affect pronoun resolution in German children.

Insa Gülzow, Victoria Bartlitz  Beginning to use German ABER and English BUT.

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<td>Is children’s referential informativity associated with their visual, linguistic, or cognitive abilities?</td>
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<td>Ed Donnellan, Richard Moore, Elena Hoicka, Katie E. Slocombe, Danielle Matthews</td>
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<td>Linguistic markers of ADHD: Measuring organization through storytelling</td>
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<td>Camilla Hellum Foyin, Mila Vulchanova, Hendrik Eshuis</td>
<td>The influence of visual context and grammar factors on ambiguous pronoun processing in Norwegian children</td>
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<td>Kirsten Abbot-Smith, Franklin Chang, Caroline Rowland, Heather Ferguson, Julian Pine</td>
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<td>Developmental differences in grammar learning from multiple cues: Is there a role for memory consolidation?</td>
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<td>Repetitions in child-directed speech - a longitudinal study of parents' vocal interaction with children aged 3-12 months</td>
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Abstracts

Spoken presentation abstracts: Monday 20th July

Session: 1A   Room: LT3   Chair: Sotaro Kita

Cultural differences in infants’ non-verbal communication and vocabulary development

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Infants’ gesture production is a good predictor for later vocabulary development, and relates to the socio-economic status of their families (Rowe & Goldin-Meadow, 2009). However, little is known about cross-cultural differences in infants’ non-verbal communication, which include physical actions outside of individual gestures, and how these relate to vocabulary development.

We observed the natural interactions of 40 infants in their home environment in three cultures: The Netherlands, urban Mozambique and rural Mozambique. Infants were observed for 30-minutes when approximately 1;1 and 1;6 years old. We coded a variety of non-verbal gestures (e.g., pointing, reaching, attention-getters and conventionals) as well as actions (e.g., ritual play, demonstration and embodied action). In addition, we measured infants' expressive vocabulary size at 1;1, 1;6 and 2;1, as reported by their caregivers, using parental checklists adapted from the MacArthur-Bates CDI.

Findings show that the total number of non-verbal cues infants produced in the three communities did not differ significantly (even though there are substantial differences in the input, Vogt & Mastin, 2013). However, the three communities differ significantly regarding some particular cues: more conventional gestures and pointing in the Netherlands, more attention-getters in Mozambique, and more demonstrations and reaches in rural Mozambique. Relating to vocabulary development, we found positive correlations between reported expressive vocabulary and: (1) conventionals in the Netherlands; (2) conventionals, ritual play, pointing, demonstration, and offering in urban Mozambique; (3) ritual play and embodied action in rural Mozambique.

We argue that these differences fit with Keller's (2012) characterization of such typical learning environments. According to this characterization, Dutch caregivers foster individual psychological autonomy exemplified by non-verbal (symbolic) gestures; rural Mozambicans foster communal action autonomy exemplified by non-verbal actions; and urban Mozambicans foster communal psychological autonomy exemplified by both non-verbal gestures and actions.

Impact of iconic gestures on word learning in children with specific language impairment

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Gesture’s facilitatory role in language acquisition is widely acknowledged. Iconic gestures have been suggested to aid children's word learning (e.g. Capone & McGregor, 2005; Lüke & Ritterfeld, in press). This rests on the idea that such gestures capture properties of a referent and thus serve as semantic enrichment cues. Thus, the gesture causes a deeper semantic understanding of the new word and enhances comprehension and retrieval. Previous research has shown that gestural cues particularly profit children for whom a task is complex (McNeil et al., 2000). We address this issue by investigating whether children with specific language
impairment (SLI) benefit from iconic gesture for word learning.

A training study (3 sessions) was conducted teaching new words to 20 children with SLI (age 4), 20 age-matched typically developing children (TD) and 20 language-matched TD (within-subjects design). At each session, children heard the same nouns and verbs coupled with a gesture. Half of these words were presented with iconic gestures illustrating a property of the particular referent, whereas the other half were presented with an attention-directing, however semantically meaningless gesture. Word learning was assessed through naming and comprehension tasks immediately after the first training session (T1) and two days after completion of the training (T2). Accuracy was analyzed between conditions.

We found a learning effect over time for both naming and comprehension. Children showed better performance on the tasks when words were paired with iconic gestures. Findings concerning children’s naming and comprehension of trained words and the role of iconic gesture in word learning will be discussed.


What does speech add to points and vice versa? Preschoolers and their surrounding environment in three cultures

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Research on pointing has focused on preverbal points and the mental states they express. Less is known about the pointing that accompanies early language development. We compare points and their accompanying speech acts in longitudinal data of 2-and-3-year-old children learning Russian, German and Chintang (Sino-Tibetan, Nepal) and their surrounding adults. Results show: (1) children and adults of all three cultures point frequently. However, there are significant differences in the amount of pointing for the children: Chintang children point least - approximately 12 times per hour; German children point most with around 30 points per hour. Adults in all three cultures pointed at similar rates. (2) In all three cultures a variety of points (using finger, hand or head) were used. Finger points were most frequent in all adults and children. The children of the three cultures behave significantly differently, with Chintang children using significantly fewer finger points than the children of the other two cultures.

Adults show similar distributions of point types. (3) Relative frequencies of speech acts accompanying points do not differ across cultures. Both children and adults use points most with declaratives followed by imperatives and questions. However, children and adults differ across cultures with children using hardly any imperatives with their points. In contrast to adults, children also use a considerable number of points without any utterance, i.e. points substitute for language.

Thus there are culture- and language-specific differences in the frequency and type of points used by children but less for adults. However, there are also striking similarities in the use of points and accompanying speech acts in languages and cultures, which differ as widely as Chintang, Russian and German.
Intervention for children with word-finding difficulties: a Randomised Control Trial and Case Series study

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Word-finding difficulties (WFD) occur in around a quarter of children in language services (Messer & Dockrell, 2013). While there is evidence that interventions can improve word retrieval i) there are no RCTs with primary-age children and ii) consensus has not been reached on whether phonological (e.g. McGregor, 1997) or semantic (e.g. Ebbels et al., 2012) therapy is the optimal approach.

Method: 20 children, age 6 - 8, with WFD were included in an intervention study which employed word-webs to develop children's knowledge of target words and word-finding strategies. i) In the RCT phase children were randomly assigned to wait or 6 weeks of intervention. ii) In the case series phase children participated in semantic and in phonological intervention. Word-finding was assessed at baseline, after each type of therapy, after wash-out between interventions and at follow-up. Outcome was considered in relation to performance on semantic (picture-judgement) and phonological (non-word repetition) psycholinguistic tasks.

Results: i) RCT. After therapy the intervention group demonstrated significantly greater change on word-finding than the waiting control group (Cohen’s D = 1.10). There was no difference between the groups in change on a non-verbal control task. ii) Case series. 17 of the 20 children showed significantly greater change for treated items over the intervention phases of the study than non-intervention phases (baseline, wash-out and follow up). The three children who had most difficulty with the psycholinguistic tasks did not benefit from either therapy approach. Those with relatively strong semantic processing showed a mixed pattern. The remaining children with relatively poor performance on the semantic task, benefitted from the semantic but not the phonological intervention.

Conclusions: The RCT provides evidence for the effectiveness of intervention for word-finding difficulties with children of primary school age. The case series suggests that the optimum approach may be linked with children’s psycholinguistic profiles.


An RCT to test the causal role of caregiver contingent talk in the language learning of high and low SES infants.

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Children from low SES families tend to have limited language skills compared to higher SES peers and this has important consequences for later life (Fernald, Marchman, & Weisleder, 2012). Recent studies suggest parenting interventions have the most potential to change this picture (Belsky et al., 2007). At the same time, research has shown that parental contingent talk
is strongly correlated with vocabulary learning (e.g., Carpenter, Nagell, & Tomasello, 1998) and suggests that increasing contingent talk would promote language development specifically for those at risk due to social disadvantage (Hoff, 2003). Contingent talk refers to a style of communication whereby caregivers talk about what is in their infant’s focus of attention (semantically contingent) and/or respond promptly to infant communication (temporally contingent). However, based on correlational research, it is difficult to establish whether contingent talk is a cause of better language outcomes and whether it is possible to intervene to promote language growth.

We address these issues with an ongoing RCT (N=137; 50% low SES). Half of the families were randomized to a language training condition where parents were shown a video describing contingent talk and asked to practice it daily for a month. Semantically and temporally contingent talk was measured at baseline (when infants were 11 months) and after training (12 months), by coding videos and LENA audio-recordings. Language outcomes are being measured at 15, 18 and 24 months. Preliminary analyses (n=49) reveal that: 1) At baseline, SES is correlated with semantic and temporally contingent talk; 2) At post-test, parents in the training condition significantly increased their use of semantically contingent talk. This effect does not interact with SES; 3) MCDI vocabulary scores at 15 months are significantly higher in the intervention condition. We will report these analyses for the full dataset alongside additional language outcomes at 18 and 24 months.

**Intervention on comprehension and production of complex language for adolescents with developmental language impairments**

Susan Ebbels, Catherine Baker, Lily Bell, Sally Brockbank, Caroline Heine, Nataša Marić, Amy Morrison, Hilary Nicoll, Lucy Nicoll, Alexandra Perovic, Victoria Roberts, Jackie Scott

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Many children with developmental language impairments (DLI) have difficulties understanding and using sentences where the word order is crucial to comprehension. This can affect simple sentences such as “the boy pushes the girl”, “the ball is on the box” or “the girl is taller than the boy” or more complex sentences e.g., passives “the girl is pushed by the boy”, relative clauses “the boy who is sleeping”, “the boy who the girl is waking” and subordinate clauses involving conjunctions (e.g., because, after, unless). Difficulties understanding such structures impair understanding of classroom instructions, texts and general conversation, and difficulties using them limits the ability to express complex ideas.

Few studies of intervention for comprehension of syntax have been carried out and only some had significant results (Ebbels & van der Lely, 2001; Ebbels, 2007; Riches, 2013; Ebbels et al., 2014). We are now carrying out three small-scale RCTs covering: 1) single clause reversible sentences, 2) relative clauses and 3) subordinate clauses involving conjunctions. The primary focus is on comprehension, but we are also measuring expression.

**Method:** The project currently involves 52 participants with DLI, aged 7;9-15;2, (M=12;6). Based on their abilities when first tested, 17 were assigned to the single clause reversible sentences, 23 to relative clauses and 12 to the conjunctions. All were tested twice pre-intervention to establish a baseline. Half of each group were randomly selected to receive intervention during the Spring term and the half acting as waiting controls are receiving intervention in the Summer term. Further participants are currently being recruited to increase numbers.

**Results:** We will compare the progress of the initial intervention group with the waiting controls after the first intervention term to investigate the effectiveness of the intervention at a group level (albeit, final analyses will have to wait until after the next stage of the project). We will also compare for each participant, their progress with intervention with their progress during baseline.
The development of determiners in context of French-English bilingualism: A study of cross-linguistic influence

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Previous research has discussed the implications of Hulk & Müller’s (2000) structural overlap hypothesis vs. Chierchia’s (1999) Nominal Mapping Parameter, and of two measures of language dominance, i.e. expressive abilities vs. language exposure, on cross-linguistic influence (CLI) at the determiner level (Kupisch, 2007; Serratrice et al., 2009). The aim of this paper is to assess the role of these variables on a new language pair. Significant cross-linguistic differences exist in the way determiners are used in French and English. While French is the most restrictive language and requires the projection of a determiner in argument position, English allows bare mass nouns and bare plural nouns.

This study is based on the longitudinal corpus of Anne and Sophie, two pre-school French-English bilingual children (2;6-3;7) who were recorded for one hour in French and in English over a year (i.e. 24 hours of recordings per child). Both children received balanced exposure to their languages (English: Sophie: 58%; Anne: 55%) as indicated by Cattani et al.’s (2014) parental questionnaire. But Anne has stronger productive abilities in English and Sophie has balanced competencies in her languages as assessed by Kupisch’s (2007) magnitude of language contrast, i.e. determined in comparing the children’s MLUw, Upper Bound, and increase in the number of nouns and verbs across French and English.

The data displays bi-directional CLI. Both girls show an accelerated development of determiners in English and a minor delay in French when compared to monolingual peers. Moreover, transfers were observed from English to French as evidenced by the production of ungrammatical bare mass nouns and bare plural nouns in French. The bi-directionality of CLI reveals its complexity. While structural overlap accounts for the accelerated development in English, economy considerations account for transfers from English to French and hence delays in French. Finally, the children’s expressive skills in each language would affect the magnitude of CLI.

Are second language trajectories modulated by temperamental characteristics?

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Early language trajectories and language learning processes are characterized by remarkable inter-individual differences. Besides the heterogeneity of children’s literacy environments their individual temperamental characteristics also seem to be a source of variability in early language development. The present study evaluates the effect of Effortful Control as a core dimension of temperament, which describes the ability to focus attention on the task at hand and remain focused without being distracted. In our study we assume that not only first language development but also second language acquisition is influenced by effortful control. It is hypothesized that immigrant kindergarten children with a higher level of effortful control have better local language competences and a more favorable language trajectory compared to their peers exhibiting lower effortful control.

The sample consisted of N = 351 bilingual children with an immigrant background and N = 71 monolingual children (49.0% girls, 51.0% boys). Language competences were measured with a standardized language test at age 4.8 years and at age 6.2 years (Grimm, 2000; Petermann, 2010), and effortful control is captured with the very short version of the child behaviour questionnaire (Putnam & Rothbart, 2006) completed by teachers.
Results of regression analyses revealed a significant effect of effortful control on second language development. Immigrant children with lower effortful control were found to have not only lower language competences at the beginning and the end of kindergarten but also a less favourable language trajectory. Comparison between the effect of effortful control on first and second language learning showed some evidence that the second language of immigrant children is more affected. These results are of particular relevance as they undermine the crucial role of effortful control for second language learning. The results will be discussed within a framework of possible interventions.

Dysfluency in multilingual acquisition

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Background: Although there is a large body of research examining dysfluency in young children (Ambrose & Yairi, 1999; Natke et al., 2006), little is known about the relationship of multilingualism to this behaviour (Coalson, et al., 2013; Van Borsel et al., 2001). Specifically, the relationship of switching languages to dysfluent events has largely been ignored. It is widely accepted in psycholinguistic and neurolinguistic research that switching languages incurs cognitive costs (Costa & Santesteban, 2004), which may have an effect on dysfluent behaviour.

Method: To explore these issues, we examine data acquired as part of a longitudinal study (weekly recordings) of language development in a child acquiring Greek, Lombard, English and Welsh. We focus on the child’s two home languages (Greek and Lombard in a one-parent-one-language home), using recordings of naturalistic data acquired just before the child started attending speech and language therapy, around the child’s fifth birthday. Recordings were transcribed and annotated, and the dysfluency profiles of the two languages were examined. In addition to this overview of dysfluency types (stuttering like and non-stuttering like dysfluencies), dysfluencies in the child’s utterances were compared for switches and non-switches.

Results and analysis: Preliminary analyses reveal similar dysfluency profiles in the two languages, showing high levels of stuttering-like dysfluencies. Moreover, analysis shows increased dysfluencies in switches compared to non-switches. These results link language switching to dysfluent behaviour for the first time (to our knowledge). In the light of these findings, we explore the way in which the switch cost may create favourable conditions for increased dysfluency.

Conclusion: This study offers one of the first dysfluency profiles in multilingual development. At the same time it enhances our understanding of dysfluent behaviour in multilingual acquisition by exploring the relationship between language switching and dysfluency.
**Session: 1D**  **Room: PLT**  **Chair: Kate Messenger**

**Children’s bidirectional defaulting in the acquisition of Japanese verb inflection**

Tomoko Tatsumi, Julian Pine, Ben Ambridge

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Young children sometimes make “defaulting” errors in which they produce certain basic forms in place of target forms that are difficult to access. This study addressed the mechanism of this phenomenon by comparing generativist accounts, under which a certain inflectional form constitutes a verb-general default that can be used regardless of the verb’s probabilistic properties, and constructivist accounts under which such errors reflect the input: children produce higher frequency forms in place of low frequency targets. The constructivist assumption for Japanese, a language which shows a considerable by-verb variation in the frequency distribution of inflectional verb forms, is that children’s linguistic representation of inflectional forms varies across verbs and they will sometimes produce defaulting errors in different directions depending on the relative strengths of those forms.

These hypotheses were tested using an elicitation study investigating the relationship between young children’s use of past and non-past tensed verbs in Japanese and the frequency distribution of these forms in the input language. 22 participants between the ages of 3;2-5;8 were tested on their ability to produce past and non-past verb forms (i.e., each verb was elicited in one past and one non-past context). 20 verbs were used in the experiment, 10 of which were biased toward past form and another 10 toward nonpast form in terms of input frequency in child-directed speech (using MiiPro corpus in CHILDES database). Mixed effect models revealed that the likelihood of children producing a past-tense form for a given verb is related to the proportion of past vs non-past forms of that verb in the input (across both past and non-past target contexts, and for both past-biased and non-past-biased verbs). This pattern supports the constructivist claim of a frequency-sensitive learning mechanism over the generativist claim of a morphosyntactic default.

**Imageability affects the acquisition of noun and verb inflections in English and Czech**

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Imageability is the ability of words to elicit mental sensory images of their referents. High imageability facilitates the acquisition of words, and the processing of inflected forms (Morrison, Chappell, & Ellis, 1997; Prado & Ullman, 2009). This suggests that acquisition of inflections could be affected by imageability of their stems. Smolik (2014) examined a longitudinal corpus of children acquiring English from CHILDES (Manchester corpus; Theakston, Lieven, Pine, & Rowland, 2004) and found that plurals were acquired earlier for highly imageable words, even after accounting for differences in input frequency. The present paper reports on two studies that extend these findings.

The first study complements Smolik (2014) by examining the acquisition of past past tense and third person singular of verbs in the Manchester corpus. Overall, 1181 verbs were examined, with 294 past tense forms and 104 third person singular forms acquired. Significant interaction between input frequency and imageability was found; the inflected forms were more likely in highly imageable words with high frequency.

The second study used a different method and different language. Parents of 317 children acquiring Czech responded to questionnaires asking about children’s use of nominative singular plural forms of 62 nouns, and the third person singular and the past participle of 43 verbs. Binomial mixed models were used to estimate the effect of imageability on the likelihood of
reporting the inflected form (plural or past tense), with frequency and the production of the baseline forms as control predictors. The effect of imageability was significant in both verbs and nouns.

The studies provide converging evidence that imageability of words affects the acquisition of inflections: if two uninflected words are acquired at the same age, and their inflected form is equally frequent, the more imageable of the two will show in the inflected form earlier.

Case contextualized: Kindergarteners integrate formal and contextual cues to comprehend object-first clauses

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When developing strategies for comprehending transitive clauses, children have crosslinguistically been found to overgeneralize word-order strategies and misinterpret object-first clauses. This is especially remarkable in languages where case is a more valid cue to semantic-role assignment in CDS than argument ordering (Boeg Thomsen & Poulsen 2015, Dittmar et al. 2008). However, the object-first clauses employed experimentally to pit case against word order are typically context-sensitive structures, so presentation in isolation may count as a cue against object-first interpretation. Indeed, Danish five-to-six-year-olds’ and German five-year-olds’ comprehension of object-first clauses is facilitated by contrastive contexts (Boeg Thomsen & Poulsen 2015, Grünloh et al. 2011).

The present investigation examines Danish kindergarteners’ mastery of object-first clauses in context across three age stages. First, a spontaneous-speech analysis of 37 children’s peer conversations (age range: 1;10-6;3 years, 90 hours) shows that children themselves produce object-first clauses in felicitous contexts from their third year, with greatly increasing diversity and frequency.

Secondly, in an act-out study with 24 subjects, three-year-olds, four-year-olds and five-year-olds were significantly better at comprehending case-marked object-first clauses in discourse contexts with appropriate topicality and contrast structures. This indicates that contextual requirements form part of Danish children’s early knowledge of the object-first construction, and that testing reliance on competing formal cues only in isolation may entail a risk of underestimating young children’s capacities with case.

Boeg Thomsen, D. & M. Poulsen. 2015. Cue conflicts in context: Interplay between morphosyntax and discourse context in Danish preschoolers’ semantic role assignment. Journal of Child Language. DOI: 10.1017/S0305000914000786.


Eye movements during sign-supported speech comprehension by deaf adolescents

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Introduction: Sign-supported speech (SSS) has been widely used in the education of deaf children. However, not many studies have explored the efficiency of SSS as an augmentative communication system.

Purpose: In this study we investigate if the use of SSS is a predictor of success in oral language comprehension among deaf adolescents. We also collect data about the area that deaf people look at while they are perceiving language in whatever modality, in order to clarify if there is any relationship between visual perception and comprehension.

Method: Two groups of 30 participants were recruited: deaf adolescents using or not technological advances such as hearing aids or cochlear-implanted and a chronological age-matched hearing group.

Stimuli were a set of short descriptive and narrative texts that described spatial layouts. The texts were videotaped in three versions—with sign language, sign-supported speech or speech only—and presented individually to the participants. Comprehension was assessed with multiple-choice questions. Eye movements were monitored with an SR Research EyeLink 1000 system.

Results: Results stress the potential of SSS in conveying the full meaning of texts to a higher degree than speech for this population. The eye gaze behaviour is expected to be connected to the level of comprehension and influenced by message content, specifically by locative constructions.

Conclusions: The additional resources in speech comprehension offered by the use of SSS address the opportunity to promote a systematic use of SSS within the institutions involved in the care of the deaf person.

The relationship between speechreading, phonological awareness and reading proficiency in deaf children

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Longitudinal studies have provided evidence for the importance of speechreading (lipreading) as a predictor of variance in reading outcomes for deaf children (Kyle and Harris, 2010; 2011). We propose a model in which speechreading provides deaf children with visual information about the sublexical structure of spoken English. On the basis of neuroimaging data we further propose that this information helps deaf children to establish amodal phonological representations which they can bring to the task of learning to read.

The first aim of this study was to test this model in a large sample of 5-7 years old children (N = 63) who were born severely or profoundly deaf. In line with the predictions of the model, there was a significant positive relationship between speechreading skill and word reading accuracy. A mediation analysis further suggested that this relationship was mediated by phonological awareness.

The second aim of the study was to examine whether predictors of variance in reading outcomes differed for children with cochlear implants (N = 31) and those without (N = 32). We found no significant differences between the groups in terms of their overall reading outcomes but they did show differences in the variables that best predicted those outcomes. For the children with cochlear implants, phonological awareness was the most powerful predictor of...
word reading outcomes, as is the case in hearing children. For the children without cochlear implants, English vocabulary knowledge was the best predictor. Possible reasons for the different relationships between these reading-related variables will be discussed.

**Predicting reading comprehension: The roles of phonological and morphological knowledge in typical and atypical readers**

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It is well established that children who struggle with processing speech sounds (phonology) are also likely to have difficulties in reading and writing. This project investigates how much children use information about the internal structure of words (morphology) to compensate for these difficulties. Morphology refers to the parts of words that carry meaning, for example, the word 'boys' has two morphemes - 'boy' and 's', which indicates a plural.

Knowledge of a word's morphemes can help us to read and write unusual words such as 'health' (which contains heal) and 'sign' (which shares a morpheme with signal and signature). It is important to know whether children who have phonological difficulties are sensitive to this type of information, and if so, whether this sensitivity helps their progress in reading and writing over time. If it does, then this implies that morphological knowledge can compensate for phonological difficulties.

The study focuses on 36 children with dyslexia and 29 children with a history of transient hearing loss due to glue ear and their chronological age matched and reading age matched controls. The children completed a battery of phonological, morphological and literacy tasks at Time 1 and were retested on reading comprehension 18 months later. At Time 1, both impaired groups showed similar levels of reading comprehension. While both the dyslexic and OM children showed phonological impairments, only the dyslexic group showed additional weaknesses in morphological awareness. Data collection for the follow up is still ongoing, but it is anticipated that both phonological and morphological skills will predict later reading comprehension skills.
Minority language learners with Language Impairments: The case of French and English in Ontario, Canada.

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It is well known that a linguistic minority community makes the development and maintenance of a minority language challenging. In Northern Ontario, Canada, it is difficult to find French monolinguals (FM) who have not been exposed to English. This context, along with a lack of regionally standardized tools, makes it difficult to properly assess children in the French language. The goals of this study were to determine the diagnostic accuracy of cognitive and linguistic tests among 5-year-old children: 26 FM, 49 French-English bilingual (FEB), 31 English-French bilingual (EFB) and 20 children previously identified as having a primary language impairment (PLI) (2 FM, 8 FEB and 9 EFB). The results showed that the following French-language tests correctly identified FM and FEB children with PLI: a narrative task, recalling sentences, following directions and non-word repetition (NWR). For the EFB children, our findings confirmed the diagnosis of PLI for six out of nine children. Five out of six children failed either the following directions subtest, the recalling sentences subtest or both, as well as the word structure and word classes subtests. Surprisingly, four out of six children did not fail NWR in English. Despite the fact that there is extensive evidence supporting the use of NWR as a clinical tool for the identification of English-native children with PLI, our study did not reveal the same findings. We hypothesize that the English-majority context may have provided the EFB children with confirmed PLI with adequate linguistic competencies in their L1 to facilitate the learning of French and that the explicit vocabulary and metalinguistic awareness instruction received in French may have benefitted the emergence of metalinguistic skills. Language processing tasks such as following directions and recalling sentences could be better suited for the identification of EFB children learning a minority language in an English majority context.

Is nonword repetition the answer to bilingual assessment?

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Background: Nonword repetition would appear to have unique potential for diagnosing language impairment in bilingual children, distinguishing impairment from language difficulties due to children’s limited experience and knowledge of the language. However, we would expect this potential to vary depending on the structure of the nonwords: on the one hand, the extent to which they are independent of language-specific lexical phonology making them less amenable to support from language-specific knowledge, and on the other, the extent to which they discriminate between intact and impaired language abilities. This paper will present a new nonword repetition framework (developed within COST Action IS0804) aiming to identify tests that maximise the gap between children with and without LI while minimising the gap between monolingual and bilingual children.

Method: This Crosslinguistic Nonword Repetition framework comprises three tests: quasi-universal with quasi-neutral prosody, quasi-universal with language-specific prosody, and language-specific. The English version of these tests has been administered to groups of 4-7-year-old monolingual and bilingual children with Polish, Spanish or Turkish as home language, together with a test of receptive vocabulary.
Results: We will present preliminary results of comparisons between group performance on the vocabulary and three nonword repetition tests, and on variables manipulated within the nonword repetition tests: length and prosody (all tests), and syllable complexity and phonotactic probability (language-specific test).

Conclusion: Results demonstrate the advantage of nonword repetition over vocabulary for assessment of bilingual children, and the influence of language-independent and language-specific phonological factors on performance of monolingual and bilingual children. Conclusions will be drawn about the contribution of these systematically constructed nonword repetition tests to clinical assessment, as well as their limitations, and the need for other relatively language-independent assessments which can expose impairments in language that nonword repetition does not reach..

Selective mutism in bilingual children: effects of anxiety, language skills and parental cultural adaptation

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Selective mutism (SM) is a rare disorder characterized by not talking in specific social situations despite speaking in others. Bilingual children are considered to have a risk four times higher than monolingual children (Elizur & Perednik, 2003). Although a relatively high proportion of children with immigrant or bilingual backgrounds and SM is discussed in previous studies, there is little known about the association between bilingualism or migration status and the development of SM.

In this study eighteen mute mono- and bilingual children and twelve control children (age 3;0 - 5;8) were assessed longitudinally over a nine months period. Language, anxiety, parental cultural adaptation, interactional and speaking behavior were evaluated through a multi-method approach.

Anxiety best predicted the development of speaking behavior for both mono- and bilingual children. Those, who remained silent, showed the highest level of anxiety. Additional effects of socioeconomic background and language competencies were found for the preschool setting. Results also indicate some influence of parental cultural adaptation on the development of SM. Children of parents with a high orientation to the culture of origin tend to remain silent at the end of the study.

High levels of anxiety may serve as an early risk factor, especially in bilingual children. The association of acculturation styles in the child’s parents and the development of SM need to be determined in future studies.

Lexical processing during the third year of life – an ERP study

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In the present ERP study, age-related changes in lexical processing of monolingual German-speaking children were investigated during the third year of life, a central period for lexical development. It is assumed that the underlying representation of lexical entries becomes more and more differentiated within this period, depending on language experience, vocabulary growth, and age-related changes in brain activity. However, little is known about how lexical units are represented in the brain in early childhood, in particular, how phonological, prosodic and semantic information is represented. Therefore, we investigated whether 24, 30 and 36 months old children are sensitive to form and meaning violations. Do they show effects of stable, adult-like representations of words, or do their representations allow for variability in form and meaning? To test this, a longitudinal ERP study was performed. 15 children were tested with a picture-word matching task in semiannual assessments. The children were confronted with pictures of objects and a simultaneous presentation of congruent or incongruent words. In the incongruent conditions, words consisted of either a substitution of the word-initial sound, a violation of word stress or a semantic violation.

Incongruency effects were reflected by N400-like components, which were found for all age groups. Violations of word-initial sounds evoked enhanced N400 effects in all age groups, effects for semantic violations increased from 24 to 30 months, and word-stress violations consistently produced the weakest N400 effects.

The present findings suggest that segmental information seems to be stable and represented in an adult-like manner, while the semantic representation becomes more differentiated between 24 and 30 months. In contrast, word stress information does not seem to contribute to the process of lexical access as much as the other factors in children of this age. The findings are discussed with respect to age-related changes in early word representation and processing.

The role of inhibition in structural alignment

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Gentner (e.g. Gentner and Namy, 2006) has suggested structural alignment, i.e. the comparison of perceptual features of items to gain deeper insights, as a way that young children are able to move beyond a reliance on perceptual features when constructing noun categories. As part of this process, children may need to inhibit a prepotent focus on perceptual similarity. The present study aimed to investigate this possibility by testing 3- to 5-year old children on their usage of structural alignment in a noun extension task alongside a test of their inhibition ability. For the noun extension task, we adapted the experiment by Gentner & Namy (1999), in which children are asked to extend one or two novel names for familiar objects (e.g. apple and / or pear) to either a shape match (balloon) or a category match (banana). For the inhibition task, we administered the Grass/Snow task (Carlson & Moses, 2001), which asks children to point to a green piece of paper when they hear snow and to a white piece of paper when they hear grass. Furthermore, we investigated any developmental change in the effect of structural alignment and its relation to inhibition ability across the preschool years. We found that all age groups made use of structural alignment and it helped 3- and 4-year-olds to overcome chance level performance in their responses. These finding suggest that children can make use of structural
alignment from as young as 3-years of age, but it is still providing benefits at age 5. More importantly, children’s usage of structural alignment correlated with their inhibition ability. Therefore, the process of structural alignment seems to involve inhibition of the tendency to extend noun category membership on the basis of shared perceptual features.


Shape bias in early word learning: Feature distinctiveness predicts age of acquisition

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Do features influence the order of acquisition in early word learning? Combining the principles of mutual exclusivity and shape bias, the present work takes a network analysis approach to understanding how feature distinctiveness predicts the order of early word learning. Distance networks were built from nouns with edge lengths computed using various distance measures. Distinctiveness predicted order of acquisition across all measures; words that were further away from other words in the network space were learned earlier. The best distance measures also did not take into account shared features, indicating that shared features may play less of a role in distinctiveness than non-shared features, and further suggesting a potential separation from the kinds of biases that lead to inductive generalizations. In addition, the strongest effects were found for visual form and surface features. Cluster analysis further revealed that this effect is a local effect in the object feature space, where objects’ distances from their cluster centroid were inversely correlated with their age of acquisition. These results have interesting implications for the field of shape bias research - namely that shape bias may be a complex process that not only focuses on objects’ contours, but also takes into account material and size. Our feature network approach explores the traditional concept of shape bias from a new angle, aiming to stimulate further research using this fresh perspective.
A domain-general capacity for statistical learning independently predicts children's comprehension of specific syntactic structures.

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A substantial body of research shows that statistical learning (SL) supports speech segmentation and word learning. By contrast, evidence implicating SL in the acquisition of syntax, where its role is more controversial, is scarce. We investigated whether SL independently predicted 6-8-year-old's syntactic knowledge. Sixty-eight typically-developing (N = 68, mean age = 7;1) children completed a test of comprehension of four syntactic structures manipulated for frequency of occurrence and therefore age of acquisition (actives, passives, subject relative clauses, object relative clauses), a test of visual SL utilising non-linguistic stimuli (Arciuli & Simpson, 2011), and standardised tests of verbal working memory (Listening Span, Gathercole & Pickering), vocabulary (PPVT, Dunn & Dunn, 2007), and non-verbal ability (Raven's Coloured Matrices, Raven et al., 1998). The results revealed that SL independently predicted comprehension of two syntactic structures that show considerable variability in this age range: passives and object relative clauses. The relationship held even when controlling for all other covariates. These data provide the most comprehensive demonstration to date that a domain-general capacity for SL is implicated in the acquisition of syntax. Specifically, they provide evidence of a developmental trajectory whereby the link between SL and syntax varies depending on age-related mastery of specific structures.


Innate movement or semantic prototypes? Evidence from production-priming of passives

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Most accounts agree that children have fully abstract knowledge of the passive by the age of 5 years, but what form does this knowledge take? Constructivist accounts posit a semantic construction prototype, such that the passive is associated with events in which the surface subject is prototypically a patient or experiencer of the action (e.g. hugged, scared) rather than a theme (e.g. seen). Accordingly, comprehension studies show lower error rates for passives with agent-patient and theme-experiencer verbs than experiencer-theme verbs (e.g. Maratosos et al., 1985; Pinker et al., 1987). In contrast, movement-based accounts suggest abstract knowledge of a passive rule, predicting equally good passive performance for all three verb types. In support of this approach, a recent priming study (Messener et al., 2012) found that the three verb types were not associated with different rates of passive production, when used as primes.

The present study used a similar production-priming task, with 39 children aged 5-6 years, varying the verb type used as targets: 12 agent-patient verbs (e.g. hug), 12 theme-experiencer verbs (e.g. scare) and 12 experiencer-theme verbs (e.g. see). All primes used agent-patient verbs. Mixed models analysis revealed a main effect of target verb type ($\chi^2=20.22$, p<0.001) for production of passive sentences, such that children produced significantly fewer
passives with experiencer-theme verbs than either agent-patient (p=0.009) or theme-experiencer verbs (p<0.001), as well as fewer passives with agent-patient verbs than theme-experiencer verbs (p=0.009). In contrast, no main effect of target verb type was observed for production of active sentences ($\chi^2=5.51$, p=n.s.).

These results mirror previous findings from comprehension tasks in suggesting that semantic verb type influences children's production of passives, but not actives. They thus support the view that 5- to 6-year-olds' abstract knowledge of the passive consists of a semantic construction prototype, rather than a context-free syntactic movement rule.

How does the world look to you?

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Language enables us to construe and encode experience in a variety of ways. Previous studies have shown that English adults are likely to focus on who does something (and use transitive sentences) whereas Japanese speakers focus on the event itself (and use intransitive sentences). However there are few studies looking at developmental differences in event encoding; specifically in the use of intransitive and transitive forms of individual verbs, and the extent to which the animacy of the patient affects the usage of these constructions. Corpus studies were conducted to investigate which verbs are commonly used in child-directed speech from both English and Japanese caregivers, and their relative frequencies in transitive and intransitive constructions. From the corpus studies, a group of familiar verbs with a range of transitivity bias (a bias toward use in transitive or intransitive constructions) were selected, each permitting animate and inanimate patient, and having an equivalent in Japanese. Using 12 familiar verbs and 4 novel verbs, 3- and 5-year old Japanese and English children and adults are asked to watch short animations and listen to both transitive and intransitive sentences describing the same event. For novel verbs, children first see animations showing the new action and learn the meaning of the verbs (training sessions). They are then asked to choose which sentence (transitive or intransitive) sounds natural for them. Preliminary results (testing English speakers only) suggest that there are differences between 3-year-old English children and adults in their preferred descriptions of the target actions. The English children tended to choose more intransitive sentences, especially when the patient is inanimate. On the other hand, English adults tended to choose transitive sentences regardless of animacy. These findings will be discussed in the context of usage-based approaches to language acquisition.
A cochlear implant (CI) can give children born profoundly deaf access to spoken language. Children who receive a CI later in life tend to perform less well on standardised language assessments than their earlier implanted peers. One possible reason for this poorer performance is that prolonged language deprivation during an early sensitive period leads to permanent deficits in language learning ability. In this study we used a novel word learning task to address the question of whether later implanted deaf children show deficits in their language learning efficiency.

Twenty two 5-10 year old congenitally deaf children with CIs took part in this study, as well as 22 chronological age matched and 22 language age matched hearing children. All children completed the word learning task, as well as standardised assessments of vocabulary and non-verbal ability.

The CI group performed significantly less well than their age-matched hearing peers on the standardised vocabulary assessment (t (42) = 3.52, p = .001), but did not show significant deficits on the novel word learning task compared to the CA or LA groups (F (2, 63) = 1.10, p = .34). Within the CI group there was a significant negative correlation between age at implantation and scores on the standardised vocabulary assessment after partialling out age and non-verbal ability (r (18) = -.48, p = .03 but not between age at implantation and performance on the novel word learning task (r (18) = -.05, p = .82).

The finding that later implantation did not impact on the efficiency of novel word learning suggests that poor performance on standardised language tasks in later implanted deaf children may be driven by quantitative differences in the amount of language learning experience they have had rather than by permanent deficits in their language learning efficiency.

Children with specific language impairment can implicitly learn second-order but not first-order sequences

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Procedural memory has been proposed to be impaired in specific language impairment (SLI) (Ullman & Pierpont, 2005). However, not all studies have found that children with SLI perform poorly on tasks that are supported by the procedural memory system. This is especially the case for the Serial Reaction Time Task (SRTT). On the SRTT, participants implicitly learn a visuospatial sequence. This study investigates whether the type of sequence used may account for differences in findings.

In this study, 28 children with SLI and 28 age-matched, typically developing (TD) children were presented with two SRTTs that assessed the implicit learning of first-order conditional (FOC) and second-order conditional (SOC) sequences. In FOC sequences, a single position within the sequence predicts the next above chance levels. Processing FOC sequences is dependent on the neural structures that support procedural memory, such as the basal ganglia (e.g., Rauch et al., 1997), which is thought to be impaired in SLI. For SOC sequences, transitions between individual positions are at chance levels. These sequences are thought to be processed by the declarative memory system (see Robertson, 2007). The hypothesis tested in this study was that children with SLI would be impaired at processing FOC sequences, but not SOC sequences. In this study, performance on the SRTT was measured using manual reaction times as well as eye-
movements and pupil size. In line with our prediction, children with SLI did not learn the FOC sequence, but did learn the SOC sequence. TD children learned both sequences. This provides evidence that children with SLI have an impaired procedural system and intact declarative system, and suggests that differences in previous SRTT study findings may be due to the type of sequence used.


Simultaneous influence of linguistic variables, vocabulary levels and experience on early word learning: fast-mapping in Spanish typically developing and late-talking children.

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Research on early language acquisition has shown simultaneous influence of multiple variables on early word learning, suggesting that vocabulary development is a gradual and complex process. Previous studies with fast-mapping tasks have stated the influence of variables such as age, vocabulary level, time-lapses, number of repetitions, linguistic categories, language and so on.

The aim of this study is to examine the role that different linguistic variables play on word learning. Specifically, we studied the level of productive vocabulary, linguistic category, morpheme and number of repetition. In addition, longitudinal effects were examined.

Thirty-eight children participated in a fast-mapping task at the age of 2;06, 3;00 and 3;06 years old as part of a longitudinal study. All of them were monolingual Spanish speaking children. Fifteen scored below the 15th percentile in the Spanish version of the MCDI (López-Ornat et al., 2005) and 23 above 20th. The fast mapping task included object labels (nouns) and action labels (verbs), in both singular and plural forms.

Results show main effects of level of vocabulary, time, linguistic category and phase. In addition, interactions between time and level of vocabulary, and time and phase were found. Late-talking children’s (children below percentile 15th) developmental patterns differed from typically developing children. Interaction effects were found between morpheme and time and linguistic category. Results suggest multiple and looping interactions between previous experience, previous lexical knowledge and the learning of new words. These results are also discussed with respect to linguistic variables that may influence rapid associations between new labels and their referents, considering the interaction between conceptual difficulties and frequency.
Semantic alignment in children with autism

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Alignment is the tendency of speakers to copy one another’s language when in conversation. According to unmediated accounts of alignment (c.f. e.g. Pickering & Garrod, 2004), alignment at one linguistic level (e.g. syntactic) promotes alignment at another (e.g. semantic). This makes it possible for speakers to establish common ground in conversation, without explicit negotiation over what each other knows.

It has been shown that children with an autism spectrum disorder (ASD) align syntax with a conversational partner, and to the same extent as typically-developing controls (Allen et al., 2011; Hopkins et al., in press). It is not known, however, whether syntactic alignment percolates to the semantic level in ASD, as unmediated alignment accounts would predict.

Given that semantic impairments are observed across the autism spectrum (Boucher, 2003), it is possible that semantic alignment may not be intact in ASD. We considered this possibility in the present study, which employs an adapted version of Garrod and Anderson’s (1987) computerised maze game. The game requires two players to talk to each other in order to solve a series of joint mazes.

We individually paired 16 ASD children with a typically-developing peer, and recorded their conversations while they played the maze game. All ASD children were individually matched to a typically-developing child on the basis of (1) chronological and (2) verbal mental age, in pairs of control children.

Like Garrod and Clark (1993), we coded conversation transcripts for syntactic and lexical alignment, and for information about the communicative success of the overall exchange. This combination of measures enabled us to assess the extent to which semantic alignment is intact in ASD, relative to typical development.

Results are discussed with reference to semantic language skills in ASD. We also consider the theoretical implications of our findings for unmediated alignment accounts.

The impact of bilingual exposure on verbal and non-verbal communication skills of children with Autism Spectrum Disorders

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Multilingualism is a growing phenomenon worldwide, with research reporting more than half of the world’s population to be bilingual. Recent interviews involving bilingual families who have children with Autism Spectrum Disorders (ASD) have indicated that professionals often discourage dual-language exposure for their children (Kay-Raining Bird et al., 2012) on the grounds that dual-language learning would be ‘confusing’ and detrimental to the child’s development. However, there is very limited evidence to support this. To date, there are eight studies exploring issues relating to bilingualism in children with ASD, and among these, only five assess language related outcomes, doing so mainly using vocabulary counts obtained via parent report. The current study explored language competence in children with ASD using indices of lexical development in addition to vocabulary count, and also explored the communicative function of language and non-verbal communicative components. Twenty monolingual children (exposed to English only) and twenty bilingual children (exposed to two languages) were recruited for this study. Mullen Scales of Early Learning and Autism Diagnostic Observation Schedule-Generic scores were used to characterize the children’s cognitive level and autism
symptom severity. Language competence was measured using MacArthur-Bates Communicative Development Inventory, as well as Receptive and Expressive One Word Picture Vocabulary Tests. Vineland Adaptive Behaviour Scales was also used to indicate the child’s level of adaptive communicative functioning. Functions of verbal communication (e.g., vocalisation, mean length of utterance) and non-verbal communication (e.g., gestures, eye gaze) were also coded from filmed parent-child free play interaction. Preliminary analyses of the language results indicate bilingually-exposed children with ASD to be significantly more delayed in their vocabulary compared to their monolingual peers, but similar in their communicative adaptive functioning. Further analyses are underway to explore whether bilingual-exposed children with ASD may differ to their monolingual peers on other indices of language development and non-verbal communicative components.

Relevant content and characters’ mental states in narratives told by Danish children with autism, language impairment, or typical development

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Sociocognitive problems with understanding others’ mental states and specific problems with language may influence how a narrative is told. We focus on linguistic expressions of perspectives on events of a narrative elicited by means of a picture book from twenty-seven children with autism (ASD), twelve children with language impairment (LI), and thirty typically developing children (TD). The children did not differ significantly on chronological age (10;6-14;0) and nonverbal cognitive ability, the children with ASD and the TD children not on receptive and productive vocabulary and grammar comprehension either.

The groups were compared on a semantic-pragmatic relevance index (Norbury, Gemmell & Paul, 2014) gauging the children’s understanding of the story line and on linguistic expressions of the characters’ mental states. The linguistic expressions were categorized according to different types of perspective: 1a. propositional expressions of public mental states (Communication) vs. 1b. propositional expressions of non-public mental states (Emotions and Thoughts and intentions), and, within the Communication category, 2a. mono-perspectival direct speech vs. 2b. bi-perspectival indirect speech.

The clinical groups produced less relevant content than the TD group, but did not differ from each other. There was no effect of group on the total number of mental-state expressions or the total number of subordinate propositional mental-state expressions. But more children with ASD did not use propositional expressions about mental states, and they talked more about the characters’ mental states as public communication. When children with LI managed to use subordinate propositions about the characters’ mental states, they were not less inclined to talk about the characters’ inner mental states than the TD children. Compared with the TD children, the children with ASD had a preference for direct speech over indirect forms, a result that is interpreted in the light of their problems with grasping mental states.
Session: 3C   Room: LT5   Chair: Tamar Keren-Portnoy

Lexical knowledge and ethnolinguistic identity among Hebrew speaking children from Amharic speaking families

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Children of immigrants, whose home language (HL) is different from the societal language (SL), face a dual challenge in preschool years. First, the transition from home to preschool is accompanied by a transition in identity. Second, they must catch up with the norms of the SL in order to integrate successfully and be able to achieve academic success. This study explores how the lexicon development in the SL is related to social and linguistic identity, as well as demographic variables (e.g., age, length and amount of exposure, family size, parents' education and occupation, and parent's self-reported proficiency in the SL/Hebrew). 80 Hebrew speaking children aged 4;0-6;0 from Amharic speaking families, were tested with two naming tasks, targeting both noun and verb production in SL/Hebrew and sociolinguistic questionnaires designed for bilingual preschool children. Demographic information was obtained from the parents.

Five-years-old children perform significantly better than four-years-old children on the different lexical measures in SL/Hebrew, with lower scores on verbs compared to nouns, as found for bilinguals. The children demonstrate bicultural identity despite their preference for SL/Hebrew and limited abilities in HL/Amharic. Yet linguistic abilities in SL/Hebrew (measured by lexical richness) help to consolidate an Israeli identity. Reported use of SL/Hebrew at home was in accordance with their lexical abilities. Yet, the major variable accounting for over 20% of the variance in lexical ability was chronological age. For the Five-years-old children, family size had a negative impact and maternal literacy in the SL had a positive impact (accounting together for up to 12% more of the variance). The lack of relationship between measures of the HL and identity and linguistic abilities in SL/Hebrew, suggests that preserving the ingroup identity does not harm the integration into the SL, when the latter is supported both by the community and the schooling system.

Vocabulary size of Polish migrant children living in the UK

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About 50 thousand Polish children from migrant families living currently in the UK constitute one of the largest new bilingual populations in Europe (Kulakowska, 2013) but still very little is known about their linguistic and cognitive development.

In this study, we analyse language proficiency in Polish bilingual children in the UK aged 4;5-6;9 (N=100). We assess their receptive and expressive vocabularies in both languages by tests standardized for monolingual populations (BPVSII, Dunn et al., 2009; EVT-2, Williams, 2006; OTSR, Haman et al., 2012; ZNO, Haman & Smoczyńska, 2010). We also use Parental Bilingual Questionnaire covering children's early development, current language skills, language use and richness, and the parents' socioeconomic status (PaBiQ, Tuller, 2015; Polish version: Kuś et al., 2012).

Our analyses aim to: (1) identify simultaneous and sequential bilinguals and examine lexical abilities across the two groups, (2) analyse the relationship between the daily language use patterns and lexical development in both languages, (3) explore the impact of school and environmental language input on the lexical development of migrant children.
We predict to find high lexical skills with simultaneous bilingualism with balanced language use pattern in both languages and rich school and environmental input. However, when input in one language is impoverished, we expect to observe the beginning of language attrition process (in case of Polish) or a lag-behind effect (in case of English, Bialystok et al., 2010).

The preliminary analyses (N=37) found no association between better lexical skills and simultaneous bilingualism, early L2 acquisition or high variety of language contexts in both languages. We now aim to test the hypotheses on a bigger (N=100) sample. The present study is part of a larger project that investigates linguistic and cognitive development of Polish migrant children in the school entrance age living in the UK.

**Caregiver-child interaction in typically developing children and children with autism: A study from south India**

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Over the years research has probed the impacts of caregivers’ language input on communication skills in children with autism. Phenotypic similarities in social use of language among children with autism and their parents have been reported. This study profiled the type of sentences used and the pragmatic acts during the caregiver-child interaction between native Tamil speaking children with autism and typically developing (TD) children in south India. Caregiver-child dyads of 2-4 year old children with autism (n=5) and TD children (n=5) participated. Twenty minutes interaction between the caregiver and child was video recorded in home and clinical environments. The samples were transcribed verbatim and the frequency of occurrence of 4 sentence types and 35 pragmatic acts (initiations and responses) were analysed. The results revealed that caregivers of children with autism used more interrogatives/questions (M:111.4; SD:30.835) compared to caregivers of TD children (M:83.2; SD:21.534). The results indicate that the frequency of initiation was significantly (p=0.009) greater in caregivers of children with autism (M:1002.6; SD:170.290) than that of TD children (M:632.4; SD:57.717). This difference was obvious in pragmatic acts such as seeking and directing attention, request for naming, usage of choices, reaching, playing with objects and description. Further, the response of caregivers with respect to repetition, self repair, negation and reinforcement acts were significantly different (p<0.05) in both the groups. Comparison of the pragmatic acts between the children in both groups indicated difference in both initiations and responses (p<0.05) as evident in literature. The results indicate that the linguistic input received by children with autism is different from that of typically developing children. Thus, it is essential to consider these variables while profiling a child’s communication behaviours. This information will facilitate in formulating appropriate child-centred approach for assessment and intervention.
Exploring patterns in tag question production: A multiple correspondence analysis of form and function

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Children can have difficulty producing tag questions correctly (e.g. She likes cake, doesn’t she?), up until adolescence (Dennis, Sugar & Whitaker, 1982). Children make a variety of errors in tags in spontaneous speech, over a long developmental period (Mills, 1988; Richards, 1994), for example mismatching the pronoun, auxiliary, or polarity between the main clause and the tag, e.g. She likes cake, doesn’t he, can’t she, does she. Tags can be used to convey a range of different pragmatic functions: requesting information, indicating agreement/disagreement or uncertainty, or facilitating conversation. It has thus been suggested that children’s difficulties in acquiring this system are due to the complex relationships between form and function. However, few studies have investigated what these relationships might be and how this might affect children’s acquisition of tags. Corpus studies analysing tag questions produced in the media and literature (Holmes, 1981) and in adult-adult speech (Tottie & Hoffman, 2006; Kimps, 2007), suggest that there are systematic links between the polarity and function of tag questions. Yet we know little about the tag questions children hear and produce. The aim of this study was to determine if there are systematic relationships between the forms and functions of tags in children’s input, and to consider how this might impact on their acquisition. Multiple Correspondence Analysis was used to determine patterns in the co-occurrence of tag forms, functions and polarity in 1773 tag questions extracted from a naturalistic corpus of twelve mother-child dyads. Each tag was coded for the auxiliary form, the polarity of the matrix and tag, and its pragmatic function. Preliminary analyses indicate that the distributional patterning of tag polarity, function and auxiliary shows some systematicity, demonstrating associations between particular functions and syntactic features. This will be discussed in relation to children’s acquisition of tag questions.

Something from nothing: What do children learn from omitted arguments in the input?

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Argument omission provides a challenge to children acquiring language and to explanations of language development. Subjects are omitted more frequently than objects cross-linguistically, by adults and children (Allen et al. 2008; Graf et al. 2014). We examined patterns of S and O ellipsis in naturalistic data from one mother-child pair speaking Estonian, which allows optional omission of both S and O.

Our data consists of 3462 utterances (1731 per speaker) with the most frequent transitive verbs used by the child, extracted from dense recordings (2:0.01-2:1.12; MLU 1.99-2.94). Overall, subjects are omitted in half of CDS and 43% of child utterances; excluding imperatives (with grammatically conditioned S omission), 34% of CDS and 26% of child utterances have null S. The CDS also omits 34% of O arguments: 42% of transitives in the input have only one overt argument, while 23% have none, leading to potential ambiguity (Narasimhan et al. 2005).

Subject, but not object, agreement is marked on verbs in Estonian: hence, while verb inflection makes first- and second-person null subjects uniquely identifiable, null O arguments are only recoverable through context. Subjects are frequently omitted in spoken Estonian, but O omission is rarer, making the high rates of O omission in CDS particularly striking.
A closer look reveals that animacy and person account for much of argument omission, and a more nuanced analysis shows that principles of Preferred Argument Structure (Du Bois 1987) are in operation. Pronouns and proper names account for nearly 90% of subjects in clauses with two overt arguments, whereas overt O are realised equally as lexical NPs, interrogative pronouns and other pronouns. Asymmetries between S and O expression present children with a subtler task than the high proportion of ellipsis suggests, with implications for children's early sensitivity to discourse cohesion aiding the learning of syntax.

**Revisiting the acquisition of relative clauses in Mandarin-speaking children: Universal versus Typological Perspectives**

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Noun Phrase Accessibility Hierarchy (NPAH; Keenan & Comrie 1977), a putative linguistic universal, has a long history in accounting for why certain RC types are easier to acquire than the others in acquisition (Keenan 1975). More recently, child language researchers have questioned how far NPAH could account for the acquisition patterns observed especially in Asian languages. For instance, based on the typology of "Relative Clause languages" versus "Attributive Clause (AC) languages" in Comrie (1996, 1998, 2002), Chen & Shirai (2014) hypothesized that in Attributive Clause languages such as Mandarin, multiple factors including input frequency and similarity to simple canonical sentences, rather than formal complexity underlying NPAH, jointly determine the learning trajectory.

We used a sentence repetition task (Diessel & Tomasello 2005; Kidd et al 2007) to assess the production of RCs (Subject(S), Agent(A), Patient(P), Indirect Object(IO), Oblique(OBL) & Genitive(GEN)) in Mandarin-speaking children (aged 4;3-4;9, N=31). First findings indicate that the order of processing difficulty does not accord with the developmental predictions derived from NPAH. For instance, unlike their English and German age peers (Diessel & Tomasello 2005), Mandarin four-year-olds did not exhibit a robust A- over- P RC advantage. In addition, OBL-RCs were as easy to process and imitate as A-RCs, although OBL and A occupy different positions in the hierarchy. Non-target repetitions frequently involved conversions to main clauses or conversions to a syntactically simpler RC structure.

These new Mandarin acquisition data pose an apparent challenge to the NPAH. On the other hand, if Chinese-type RCs can be considered a subset of attributive clauses that are semantic-pragmatic rather than syntactic based (Comrie 1996, 1998, 2002), this would raise a new set of acquisition issues in the study of Chinese RC processing.

Spoken presentation abstracts: Tuesday 21st July

Session: 4A  Room: LT3  Chair: Yvonne Griffiths

Reading strategies in children with ASD while reading texts and answering questions that do, or do not, require an inference to be generated: An eye movement study

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Several studies show that, in general, in many children with Autism Spectrum Disorder (ASD), the ability to generate inferences from text could be impaired. In order to explore mechanisms behind these difficulties, the current study aimed to analyze the mechanical reading process in ASD by having participants read short texts and answer questions that do, or do not, require the generation of inferences. High functioning children and adolescents with ASD (n = 23), and typically developing children and adolescents (n = 23), matched for mean group IQ and language ability, read five stories, each divided into five paragraphs. Children and adolescents were between 9 and 17 years old. Each paragraph required participants to answer a question that could either be inferential or factual. Accuracy in identifying the correct answer in inferential questions was compared to the factual answering performance. Results showed differences in accuracy rates between the factual and inferential questions, with poorer performance for inferential questions, for both groups. Eye movements during factual and inferential question answering were examined using an eye tracker. Between-group differences in eye-movement reading patterns were found. This study provides some data that will help to identify the strategies involved in real-life reading inferencing in children with ASD. Implications for intervention are discussed.

Which cognitive abilities influence the development of reading abilities in Williams Syndrome and Down Syndrome?

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Williams syndrome (WS) is a neurodevelopmental disorder characterised by moderate learning disability and an uneven cognitive profile with relative strengths in language and social skills, in contrast to visuo-spatial and number ability (Mervis et al., 2003). Individuals with Down syndrome (DS) have similar IQ scores to individuals with WS, but their cognitive profiles include strengths in visuo-spatial skills relative to verbal short term memory and expressive language abilities (Abbeduto, Warren & Conners, 2007).

Those with WS and DS have been found to show great variability in reading ability and impairments have been linked to phonological deficits and oral language weaknesses (Griffiths, 2011). However, phonological awareness scores in WS are often above what is expected for their mental abilities (Menghini, Verucci & Vicari, 2004). Thus, as poor reading ability is present despite strong phonological awareness relative to mental age, phonological awareness alone cannot explain the variability in reading abilities observed in WS and DS.

Using a developmental trajectories approach, this study investigated the relationship between cognitive factors including phonological awareness, rapid automatised naming (RAN), visuo-spatial awareness, working memory, executive function, and reading ability (including letter recognition, single word and reading comprehension). The study examined which of these potential factors are predictive of, and important to the development of reading ability in WS and DS. Furthermore, participants included both child and adult groups in order to determine if the development of reading ability and comprehension is delayed or atypical. Data collection
will continue until May 2015 and thus far testing sessions have been completed with 15 participants with WS, 2 with DS, and 9 TD participants aged between 8 and 16 (child group) and 18 and 40 years old (adult group).

**Predictors of reading comprehension ability in primary school-aged children who have pragmatic language impairment**

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Background: Children who have pragmatic language impairment (CwPLI) have difficulties with the use of language in social contexts and show impairments in above-sentence level language tasks including reading comprehension (RC). Previous studies have found that RC in typically developing children is predicted by reading accuracy and spoken sentence level comprehension (SLC). This study explored the predictive ability of these factors as well as above-sentence level comprehension (ASLC) on RC skills in a group of CwPLI.

Method: Sixty nine CwPLI (aged 6-11) were recruited from speech and language therapy caseloads. They completed a measure of RC along with measures of reading accuracy, spoken SLC and ASLC. Two different ASLC measures were included to allow the exploration of tasks requiring constructive processing with (spoken ASLC) and without (visual ASLC) the influence of linguistic processing.

Results: The results demonstrated that reading accuracy and spoken SLC are independent predictors of reading comprehension in CwPLI, in line with reading theory (the Simple View of Reading), and both typically developing children and children with reading difficulties (dyslexia, poor comprehenders). Regression analyses showed that visual ASLC did not explain unique variance in RC on top of spoken SLC. In contrast, spoken ASLC explained unique variance in RC, independent from that explained by spoken SLC. A regression model with nonverbal intelligence, reading accuracy, spoken SLC and spoken ASLC as predictors explained 74.2% of the variance in RC.

Conclusions: The results suggest that spoken ASLC may measure additional factors that are important for RC success in CwPLI and should be included in routine assessments for language and literacy learning in this group. When assessing CwPLI it is important to look at potential underlying causes for RC difficulties. Intervention to improve RC may need to target a number of different skills including reading accuracy, spoken SLC and ASLC.
Health services use and health care expenditures for children with language impairment: Evidence from the longitudinal study of Australian children

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The study investigates whether health service utilization is greater for children with language impairment (LI) and estimates the degree of financial equality for disadvantaged families. Data from five biennial waves (2002-2012) of the nationally representative (K cohort; 4-13 years) of the Longitudinal Study of Australian Children were used (n=4456). Language impairment was determined using a modified version of the Peabody Picture Vocabulary Test at age 4 to 5 years, with impairment defined as ≤1.25SD below the mean. Medical services and pharmaceutical use was quantified from linked administrative data (Medicare).

Using generalised linear modelling we demonstrated that children with LI used more health services. As a result, children with LI had higher biennial health care expenditure, conditional on age and social advantage. The greatest disparities occur in earlier years. The average biennial health care cost at 4/5 years is $1,901 for LI children compared to $1,173 for non-LI children, a difference of $727. Out-of-pocket expenses are also higher ($1,131 versus $693). Whilst the differences in health care expenditure between LI and non-LI children are less pronounced in older children, there remain differences once family income is considered, with children from better-off families receiving more health care adjusting for need.

Families of children with LI face considerable health care burden, most notably when children first commence school. Our results have important policy implications in terms of protecting high-risk children and families from the financial burden of LI as well as reducing barriers to access for high-risk groups and government funded early interventions services.

Service utilization and costs of low language in children between 5-7 years: Australian population-based study

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Background: Language problems affect a large proportion of children across infancy and pre-school. However, little is known about the costs associated with these problems. We aim (1) to examine the patterns of service use and costs associated with language problems in a community cohort of children from ages 4 to 9 years and (2) to examine the relationship between low language abilities and health service utilisation.

Methods: Participants were 778 children and caregivers in six local government areas in metropolitan Melbourne participating in the community-based Early Language in Victoria Study (ELVS). Health services used were reported by parents. Costs were valued in 2014 Australian dollars, from government and the family perspective. Depending on age, the Clinical Evaluation of Language Fundamentals – Preschool, 2nd Edition (CELF-P2) or the CELF, 4th Edition (CELF4) was used to assess expressive and receptive language scores.

Results: At 5, 7 and 9 years respectively 161/778 (21%), 83/778 (11%) and 64/778 (8%) families reported using services for speech and language concerns. Twelve per cent of parents reportedly consulted a speech pathologist at child aged 5 years, 8% at child aged 7 or 9 years.

For families accessing services, average costs were $612 at child age 4-5 years and $992 at 6-7 years. Children with persistent language impairment had higher service costs (p<0.001) than typical language children. These findings were maintained having adjusted for child gender,
maternal education, maternal mental health, socioeconomic status and family history of language problems (p<0.001).

Conclusions: Language impairment in children between 4-7 years of age was associated with higher health care costs to both families and government than children with typical language. Cost-effective strategies are needed to mitigate the burden of language problems to society.

Developing a computerised English syntactic developmental profiling tool for speech and language therapists and school teachers

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It has been over 40 years since systematic syntactic development investigations were carried out in Britain and the few resulting profiling tools for assessing child language development are still based on paper and manual work. This lack of efficient and up-to-date assessment tools has affected the use of assessments in clinical practice due to the constraints of clinical time for assessment and acute knowledge of language data analysis performed on the spot. This team of researchers funded by De Montfort University intends to fulfil this gap by collecting data from normal children aged 1 to 7 to establish a baseline for their syntactic development following the principles in the Language Assessment Remediation Screening Procedure (LARSP) (Crystal, et al. 1981). Outputs will include a computerised tool which will save time and provide accuracy and consistency in clinical use.

This presentation will demonstrate a pilot result of a prototype we are implementing. It shows the methods of data collection and evaluation of the reliability of the data, measuring the reliability between the target syntactic structures with the actual production by the children and the consistency between the drawings used for eliciting the child utterances and the English syntactic structures produced by the children and considerations in the production of this computerised tool. This prototype of the computerised tool will be shown to illustrate how the design will help users in their language assessment work.

It is hoped that the development of this tool will enhance our understanding of child syntactic development and improve our professional work to help children learn and thus promote their language production.
The acquisition of consonants in Turkish-German bilingual children

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Background: Monolingual and bilingual children have been shown to acquire the sounds of their languages in a similar order, i.e. from simple to complex (e.g. Fabiano-Smith & Barlow, 2010). This pattern is frequently explained by universal principles, such as markedness, which are assumed to influence phonological acquisition (e.g. Yavaş, 1995). Markedness characterises two linguistic oppositions: unmarked (e.g. simple sounds, sounds shared across languages) and marked forms (e.g. complex sounds, language-specific sounds) with the latter being acquired later (Jakobson, 1968). So far markedness has not been studied in the phonological acquisition of Turkish-German bilinguals. Hence, this study aims to explore consonant acquisition in this population.

Method: 84 Turkish-German bilinguals aged 3;0-5;5 years were divided into five age-groups: 3;0-3;5 (N=10); 3;6-3;11 (N=24); 4;0-4;5 (N=18); 4;6-4;11 (N=25); 5;0-5;5 (N=7). Data was collected via a single-word naming task to establish the children's consonant inventories in Turkish and German. A 75% criterion was used to do this, i.e. 75% of children in an age-group had to produce a consonant correctly for it to be considered acquired.

Results: Complex sounds, i.e. fricatives and affricates, were the largest sound classes of missing phonemes in both languages across all age-groups. The majority of sounds common to both German and Turkish were acquired before language-specific (marked) sounds and generally at a similar age in both languages. There were a few exceptions, however, for example the consonants /h, z, s/ were acquired at different ages in both languages.

Conclusion: The early acquisition of consonants shared across languages and the absence of many fricatives/affricates from the children's consonant inventories can be explained by an effect of markedness. However, markedness failed to explain dissimilar rates of acquisition across languages.

The applications of the findings for supporting Turkish-German bilingual children with delayed speech development or specific speech difficulties will be considered.

Role of frequency and phonetic complexity on first words order of acquisition

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Several factors have been show to influence quantitative and qualitative development of first words' production. Frequency of exposition (Hoff & Naigles, 2002; Goodman, Dale & Li, 2008) as well as phonetic and phonological development (Vihman & Croft, 2007) have been proved to play a role with different results according to methods. But, very few studies have evaluated the impact of these two factors simultaneously on the same subjects and never to our knowledge on French longitudinal spontaneous data. The goal of the study is to measure the possible influence of both exposition frequency and phonetic composition of lexical words on their order of acquisition in monolingual French-speaking children at different linguistic developmental stages. Data are composed of video-recorded spontaneous interactions in 4 mother-child French dyads between first word production and a lexicon of 300 words. All data were orthographically and phonetically transcribed in Phon format (Rose et al. 2006). Phonetic complexity of produced and targeted words by children and produced words by mothers were measured via the Index of phonetic complexity created by Jakielski (2000) and adapted to French. In parallel, we established the list of produced words by children and mothers according
to their frequency in types and tokens. Data show an influence of phonetic composition: early produced words are phonetically less complex than later appearing words and than words used in child directed speech. Frequency seems to have a very limited influence on early vocabularies: only some of the really most frequent words in child directed speech are among the first produced words. Several extensions to this study are considered: add more data (for each dyads but also more dyads) and conduct some crosslinguistic study on languages which presents very different phonological and phonetic systems (such as Tunisian Arabic and Berber).

A dynamic systems approach to understanding the role of babble, word recognition and segmentation in the emergence of a lexicon

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This study investigated how productive and perceptual skills in infancy are related to the onset of word use, based on a model inspired by Dynamic Systems Theory (Thelen & Smith, 1994).

Infants (N = 59) were followed from 9 to 18 months. Production skills were based on age at onset of stable and consistent consonant use (Vocal Motor Schemes: VMS). Perception skill was based on a word-form recognition test (WR: 10 months) and a word segmentation test (SEG: 11 months). Productive lexicon was assessed based on monthly recordings. Lexical advance was also assessed using the Oxford CDI.

We ran a two way ANOVA with 2 binary independent variables: Success at WR (yes or no) and Two VMS by age 10 months (yes or no). The dependent variable was Success at SEG (yes or no). There was a main effect of VMS (p=.03) and a significant interaction (p=.04) between WR and VMS. The only infant group with a clear majority who succeeded in SEG is the one that had achieved both Two VMS at 10 months and success at WR. However, only VMS significantly predicted age at first words (regression analysis, p=.001).

We ran a multilevel model to test the difference in lexical growth (using the CDI) between infants who exhibited novelty, familiarity and no preference in WR. The novelty group was significantly different from the other two groups (p=.014), suggesting they were more advanced lexically. No other relationship between perception tasks and productive lexicon was found.

We conclude that word-form recognition, segmentation and consonant production interact in a complex way, consistent with Dynamic Systems Theory. The fact that neither of the perception tasks are predictors of age at first word use is surprising and suggests that there must be additional control parameters facilitating first word use.
Executive functions and theory of mind in relation to language development among three-year-olds from low socio-economic backgrounds

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Blain-Brière, Bouchard and Bigras (2014) demonstrated a relationship between executive functions (EF) and pragmatic skills among pre-schoolers. This relationship was stronger than that between IQ and pragmatic skills; more specifically, working memory was linked to insight into another individual’s perspective and all EF, except flexibility, made contributions to fluidity in expression. The work presented here attempts to extend these findings to a younger age group from a wider range of social backgrounds. In addition, a false-belief task is included to assess the impact of Theory of Mind (TOM).

Participants were 48 monolingual English-speaking three-year-olds (mean age: 42 months; range: 37-47 months) from early years classrooms. Socio-economic status (SES) was assessed using the Scottish Multiple Deprivation Index (low SES: deciles 1-3; middle SES: deciles 4-7). The CELF-Preschool 2 was used to measure pragmatic, receptive and expressive language skills together with BAS II assessments of verbal and non-verbal ability. EF comprised tests of flexibility, inhibition and working memory, and TOM was examined via a false-belief task.

After controls for age and non-verbal ability, SES groups scored similarly on pragmatic skills and receptive language but differed on expressive language. Across SES, all language measures including pragmatic skills correlated with working memory, and receptive language was additionally related to inhibition. For middle SES, receptive and expressive language also associated with flexibility. Pragmatic skills and receptive language correlated with TOM across SES, however, expressive language was only associated with TOM among middle SES children.

Findings are related to previous work concerning the role of EF and TOM in pre-school language development. Here, the influence of working memory extended across language measures, whereas inhibitory control was more specifically related to receptive language. Finally, the study exposed the contribution made by both flexibility and TOM to the higher expressive language skills of pre-schoolers from middle SES backgrounds.

Comprehension of quantifiers and numerals in ASD: Evidence for a degree of pragmatic competence

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Background: Investigating knowledge of linguistic constructs on the syntax/semantics interface seems particularly relevant in autism spectrum disorders (ASD). While pragmatic impairments are a defining characteristic of ASD, grammatical skills can be very heterogeneous: from intact to severely impaired. Quantifiers (e.g. ‘no’, ‘some’, ‘all’) and numerals (e.g. ‘one’, ‘two’, ‘three’) are linguistic phenomena which rely on both syntactic and pragmatic knowledge, along with the general ability to assess small quantities. The meaning of quantifiers is determined by reliance on pragmatic inferencing, while numerals refer to exact quantities, though it has been argued that numerals behave like quantifiers in being able to allow for non-exact interpretations (Carston 1998). Interestingly, pragmatic inferencing has been shown to be relatively unimpaired in Dutch adults with ASD who were able to derive scalar implicature for ‘some’ (Pijnacker et al, 2009), an ability correlated with higher verbal skills.

Method: Using an act-out method adapted from Pouscoulous et al (2007), we tested comprehension of quantifiers and numerals in 15 children with ASD (CA: 5-11; M=9;03) and 28
typical controls (CA: 3;08-9;07; M=6;03) matched in gender, verbal MA and visuo-spatial ability. Additional background measures of basic numeracy skills were administered.

Results: Children with ASD did not differ significantly to their matched counterparts on either quantifier or numeral task, reaching between 60% and 90% correct on all experimental conditions. The most common error concerned the quantifier ‘some’: both groups often failed to compute the scalar implicature, treating ‘some’ as compatible with ‘all’ – a pattern widely reported in literature on typical development (e.g. Pouscoulous et al, 2007). In support of the results of Pijnacker et al, the performance of our group with ASD was predicted by verbal but not visuospatial ability, suggesting a degree of pragmatic competence in children with ASD who show no obvious language impairment.

Too much or too little? The comprehension of overstatements and understatements in typically developing (TD) individuals and those with Autism Spectrum Disorders (ASD).

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Figurative language, such as metaphor (e.g. You’re a star! When giving someone praise), overstatements (e.g. It’s stormy out there! Referring to a drizzle), and understatements (e.g. It’s just a scratch! Referring to a very deep cut), are ubiquitous in everyday language and play a significant role in how we conceptualise thought and the world around us. It is an aspect of language that individuals with Autism Spectrum Disorders (ASD) are known to have difficulties with, for which current research is yet to determine a singular cause. Much of the available research into figurative language comprehension, whether for ASD or typically developing (TD) individuals, focus primarily on metaphor, and/or adopt varying methodologies, leading to incomparable results. Hence, very little is known about comprehension of overstatements and understatements in ASD as well as in TD individuals. Similarly, we do not know how comprehension in these two populations compares, nor what abilities may be a precursor for understanding these devices. The current study aimed to investigate these questions by assessing the comprehension of metaphors, overstatements and understatements in TD (n=30) and ASD (n=18) participants aged between 7 and 15 years old, using a novel computerised story-completion task. Nonverbal Abilities, Receptive Vocabulary, Semantic Knowledge (i.e. opposites and synonyms) and first-order Theory of Mind (ToM) were also assessed. Analysis revealed that ASD participants performed markedly worse at the figurative comprehension task compared to TD participants, suggesting impaired understanding; however, similarities between populations were also found as both groups performed worse on overstatements and understatements compared to metaphors. Results also suggested that both Receptive Vocabulary and Semantic Knowledge predict level of comprehension of overstatements and understatements. ToM did not consistently impact performance in the ASD group, while Nonverbal Abilities was negatively correlated with comprehension of figurative language in the ASD group.
Morphosyntactic development in German children with Down’s syndrome

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Children with Down’s syndrome (DS), a genetic developmental disorder that leads to mild to moderate mental retardation, achieve developmental milestones in language acquisition only with a considerable delay and display noticeable problems in the acquisition of phonology, inflectional morphology and syntactic structures (cf. overview in Roberts et al. 2008). A critical issue is whether these observed language problems are due to the general limitation of cognitive capacities in individuals with DS or whether they are indicative of a developmental language deficit, as has been suggested by recent studies (cf. e.g. Ring & Clahsen 2005). So far, however, our knowledge on language impairments in DS is still rather limited and mostly confined to English-speaking individuals. We will present data on morphosyntactic deficits in German-speaking children with DS which were collected with an extensive morphosyntactic test battery. The results indicate that in spite of nonverbal mental ages at or above 4 years of age, a subgroup of the children with DS has not yet acquired subject-verb-agreement morphology. This is in clear contrast to typically developing German children who have acquired these phenomena by age three to four. Thus, for these children with DS language impairments cannot simply be attributed to their general cognitive delay, but indicate a deficit in language development. We will moreover discuss (i) whether the observed deficit is specific to DS or is similar to the deficits observed in German-speaking children with Specific Language Impairment (SLI), and (ii) whether it can be attributed to hearing deficits or limitations in verbal short-term memory.


Reading skills in relation to family history of literacy problems in children with Specific Language Impairment

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This study explores reading skills in children with SLI attending school language units. The associations between family history (FH) of literacy problems, the participants’ reading skills and nonword repetition (NWR) are investigated. The ‘simple view of reading’ model was used to investigate the link between decoding skills, oral language comprehension and reading comprehension.

Sixty-one children with SLI (8-12 years), attending school language units in Sweden, were assessed with measures of two aspects of reading skills – reading comprehension and decoding of words and nonwords, as well as NWR and oral language comprehension. FH of literacy problems was based on interviews with the parents.

We found that 97% of the sample showed poor outcomes (≤10th percentile) in decoding and/or reading comprehension: the majority performed poorly on both measures. This finding is discussed in relation to the fact that only 5% (3 of 61) of the sample was previously clinically diagnosed with reading impairment. Co-occurrence of poor reading comprehension and poor oral sentence comprehension was 90%. FH of literacy problems was reported in 64% of the participants and was associated with lower performance on decoding of nonwords. Based on a regression analysis, we found that decoding is a better predictor of reading comprehension in
the lower (1st-2nd) as compared to the upper (3rd-5th) school years. We further found that oral language comprehension was a significant predictor for reading comprehension in the upper school years, though not in the lower years.

The findings have important implications for prevention and intervention, emphasising the necessity of assessment of literacy skills in children involved in school language units. A family approach, such as would involve counselling and support to families, is recommended considering the high prevalence of literacy problems in the parents and the association between a positive FH and poor decoding skills in the children with SLI.

Using dynamic assessment to explore early risk markers for communication difficulties

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Background: Recent work has established that dynamic assessment (DA) is a useful tool for language research and therapy (e.g. Hasson, Camilleri, Jones, Smith and Dodd, 2012). This methodology has been cited as particularly useful for client groups who are harder to assess using standardised procedures, such as bilingual children or those with Autism Spectrum Disorders. It may also provide a useful means of assessing infant communication development in a naturalistic manner, as adults typically scaffold their interactions with infants and encourage learning by providing activities within the Zone of Proximal Development and support to complete these. However, the role of DA in investigating infant communication development remains to be established through research.

Methodology: The present study is using a prospective longitudinal design to explore early communication development in infant siblings of children with Autism Spectrum Disorder and/or language impairment (n=20), as compared to control children (n=40). DA of imitation, receptive language, turn taking and joint attention is being conducted at 9-15 months of age, and the ability of this procedure to predict language and social communication outcomes at age 2 is being investigated.

Results: Results will be presented based on analysis of the Time One assessment data. Preliminary results indicate that using DA adds to the ability of standardised measures to predict concurrent receptive language development. Motor imitation ability in infancy, as assessed by DA, appears to have a particularly strong relationship to language skills, both as reported by parents using the UKCDI (r=0.586 p=0.028) and as assessed using the Pre-School Language Scales-4 (r=0.796, p=0.001).

Conclusions: Dynamic assessment appears to be a useful emerging tool for investigating infant communication development. Replication in further studies will be needed in the future.
Exploring duration and isochrony in nursery rhyme reciting for children with language impairments and typically developing children

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Previous research shows that children with language impairments (LI) are significantly less rhythmic during motor rhythm tasks than typically developing children who are chronologically and linguistically age-matched.

This study aims to explore the rhythmic processing deficit hypothesis proposed by Corriveau & Goswami (2009) and to shed new light on the rhythmic abilities of children with LI. An aspect of rhythm that has not yet been examined as it relates to children with LI is speech rhythm. The authors investigate speech rhythm production in a nursery rhyme task, namely Humpty Dumpty. Durational isochrony and average duration between mid-vowels were measured in four conditions: a) internally-generated rhythm, b) rhythm copying, c) rhythm-paced entrainment, and d) rhythm unpaced entrainment. It was expected that children with LI would show difficulties in these tasks. This hypothesis is based on previous findings indicating that children with LI are impaired in motor rhythmic skills.

Fifty one children aged 7;8 to 11;2 years participated in this study. Seventeen children (14 male, 3 female; mean age 8;9, SD, 12 months) had a statement of language impairment (LI group) from their local education authority, seventeen children (4 male, 13 female; mean age 8;8, SD, 11 months) were chronologically age-matched (TD-CM group) controls, and seventeen children (7 male, 10 female; mean age 6;5, SD 1;6) were linguistically age-matched (TD-LM group) controls.

Results show that children with LI are indeed found to be rhythmically impaired in reciting Humpty Dumpty during the internally-generated rhythm and the rhythm copying conditions, however, they perform equally well with chronologically and linguistically age-matched controls during nursery rhyme entrainment tasks. Results are discussed as they relate to possible clinical implications for children with LI. Finally, a new rhythmic model for a comprehensive analysis of the rhythmic abilities of children with LI is introduced.

Resilience in early child language development

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This longitudinal study identified protective factors in infancy and early childhood associated with expressive language development at three years of age for children typically at greater risk of poorer cognitive outcomes. Resilience in early language development was defined as scoring in the highest quartile on a standardised measure of vocabulary at 3 years, despite the presence of well-known risk factors (i.e. low levels of maternal education and low levels of family income).

Methods: A secondary analysis of two waves of the Growing Up in Ireland infant cohort data, collected at nine months old and three years of age, was conducted. The data were stratified based on risk status for adverse outcomes (lower maternal education and income versus higher maternal education and income). Two separate groups were created for analysis using regression modelling: (1) high-risk children performing well at 3 years; and (2) low-risk children performing well at 3 years.
Multiple regression was used to identify proximal (e.g. reading to the child, parental stress, childcare) and distal (e.g. age, ethnicity) environmental predictors of early language development, controlling for child variables.

Results: Predictors of language outcomes were similar for each stratified sample and included maternal age, early child care experiences, ethnicity and early child ability. Parental input through reading to the child and availability of books were particularly strong protective factor in language development for high-risk children.

Conclusions: Environment matters for language development for all children and is especially protective for high-risk children. Literacy in the home, engaged parenting, and child characteristics are important protective factors for child language development.

The relationship between narrative abilities and executive functions in Dutch children with SLI

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It is well-known that children with SLI experience problems in different domains of language and to varying degrees. However, in the past decades several studies have shown that these children also experience problems outside the language domain, namely in the area of central executive processes. In order to become good narrators children need to develop specific phonological, morphological, syntactic, semantic and pragmatic skills. Moreover, the events and episodes of a story need to be ordered in a hierarchical way. In order to do this, children need to develop their executive functions (EF). EF is the common term to denote a set of neurocognitive processes that control and regulate thought and action, i.e. working memory, inhibition, cognitive flexibility, attentional control, switching and auditory and visual attention. To narrate a story events need to be related in a logical, temporal and causal way. Therefore, both language and EF skills are closely-linked to telling a coherent story.

In the current research, the relationship between narrative abilities and core EF (i.e. working memory, inhibition, cognitive flexibility) was examined in order to search for different profiles on the basis of specific narrative and EF skills. A group of 60 Dutch children with SLI of 9 - 11 years of age and 50 age-matched typically developing children were investigated. For narrative ability, both a story retelling task (bus story) and a story generation task (frog story) were administered. EF skills were measured using subtests of the TEA-Ch and the BADS-C, WISC digit recall test, nonword repetition test and WMTB-C block test. Results show that narrative skills are related to specific aspects of all core EF. These results and the consequences for diagnostics and language intervention of children with SLI will be discussed.
Session: 5C  Room: LT5  Chair: Sotaro Kita

Child-directed speech in the BabyExp corpus

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The BabyExp corpus provides video-recordings of a child's experience from 0;3-3;0, collected by one of the authors, who recorded his (almost entirely English-speaking) child's environment from 10/2008 to 07/2011. The rooms where the infant spent most of his time (his room, living room, kitchen) were equipped with non-invasive ceiling-mounted cameras (LJD LJDNV15-101 FMC, 420 TVL resolution, infrared, CCD Sony SuperHAD) with a powerful environmental microphone attached to one of the cameras. The recording equipment was turned on when the child woke up, and turned off when the family went out or the child went to sleep. The videos cover around 160 days/year, 1-8 hours/day (ca. 3TB), providing a high-density record of the child's experience in the years in which conceptual knowledge is formed to the point in which basic grammatical competence was acquired.

Transcription and annotation of the entire corpus can only be done automatically, but this requires the transcription of a sub-corpus to train automatic speech annotators. We present BabyExp 1.0, a 10-hour subset of the corpus, with reliability-checked video-linked transcriptions, using the CHAT conventions of the ChildLanguageDataExchangeSystem (http://childes.psy.cmu.edu/; MacWhinney 2000) and the multi-media annotator ELAN (http://www.lat-mpi.eu/tools/elan/). We will discuss ethical and methodological problems and analyse child-directed speech.

Studies with nursery-age children have found that parents produce sequences of utterances with a constant communicative intention, but variation in form; e.g. lexical substitution, rephrasing, or the addition, deletion or reordering of constituents, see e.g. (Slobin et al. 2011):

(1) you put it right in
(2;1) you put it in there

Such "variation sets" have been attributed to the need to convey a message to a non-comprehending/compliant listener, but we will show that they already occur in speech to pre-linguistic infants, who are unable to show comprehension or comply with requests. We will discuss implications for theories of child-directed speech.

Cross-dialectal differences in English infant-directed speech

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Research has found that certain universal modifications are made to speech directed towards infants rather than adults. This includes a slower speech rate, higher mean pitch and exaggerated pitch contours, and increased emphasis on stressed words (Kitamura & Burnham, 2003; Pegg, Werker, & McLeod, 1992). This style of speech both attracts infants' attention (Pegg et al., 1992) and assists the processing of speech (Thiessen, Hill & Saffran, 2005).

While some researchers acknowledge that there may be differences in infant-directed speech (IDS) across languages (Ratner & Pye, 1984), it has been assumed that within a single language, adult-directed speech (ADS) and IDS represent two distinct and monolithic styles of speech. However, recent research revealing cultural differences in early language abilities (Nazzi et al., 2014, Depaolis et al., 2012) suggests that IDS may differ within a single language but
across dialects, to an extent that it affects early language development. These findings might help to explain the well-established vocabulary advantages shown by American infants over British infants (Hamilton, Plunkett, & Schafer, 2000).

This study investigates these cultural differences by performing acoustic analyses on samples of IDS and ADS from five North American and five British English female speakers. Preliminary analyses using six utterances each from two NA and two British speakers, shows NA speakers have a higher mean pitch for passages (M = 231.31 Hz) than UK speakers (M = 197.4 p <.05). NA passages were louder (M = 73.93) and greater variation in loudness (M =42.87) than British passages (M intensity = 64.7, M variation = 34.06, ps < .01). It is predicted that analysis of a larger sample will reveal not only greater stress but also more extreme pitch contours in the NA than the British passages, suggesting that NA IDS might be more salient than British IDS.

Interaction and onomatopoeia in early language development

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Despite their marginal status in the adult language, onomatopoeia constitute a disproportionately large quantity of many infants’ early outputs. Kern (2010) noted that these forms accounted for over one third of the French lexicon between the ages of 8 and 16 months, while Tardiff and colleagues (2008) found similar results in American English and Cantonese data. It has been suggested that there might be a facilitative role for these forms in early lexical acquisition (Imai & Kita, 2014), owing to their sound-meaning correspondences making them easier for infants to learn. However, despite their abundance in early lexical development, limited research can be found which addresses the question of onomatopoeia in early language learning.

This study considers the production of onomatopoeia in infant-caregiver interactions in order to understand how early perception and production shape infants’ acquisition of these forms. Data from eight infants (English: n = 4, French: n = 4) interacting with their caregivers were analysed longitudinally for the changing use of onomatopoeic words (OWs) in caregiver and infant speech. Use of OWs, including the context of production (e.g. book-reading) and the interaction type (e.g. repetition, caregiver prompting) were recorded.

Strong correspondences were found between the caregivers’ use of OWs and their infants’ production of these forms, in terms of both quantity and context of production. Furthermore, OW use in interactions changed strikingly over time, as caregivers adapted to the infants’ linguistic development. This corresponds to Taumoepeau and Ruffman’s (2008) ‘zone of proximal development’, as caregivers prompted infants towards more adult-like production, away from OW forms, over time.

Results from this analysis show a highly functional role for OWs in early interactions, which leave space for language development on a general level. Strong evidence towards the role of input and experience in early language development is established.


Does language affect memory of motion? Evidence from English and French children

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Recent research indicates that language-specific properties affect first language acquisition from early on. For example, typological differences in the lexicalisation patterns of verb- and satellite-framed languages (Talmy 2000) impact the development of motion expression. This paper addresses the still controversial question of whether such crosslinguistic variation also influences children's developing cognition, thereby contributing to the debate regarding the role of language-specific and general cognitive factors in acquisition (Slobin 2004).

Two groups (7 and 10 years) of English and French children (N = 107) and two control groups of English and French adults (N = 88) were randomly assigned to one of two conditions of a memory task: (i) in the non-verbal condition, they saw ten short video clips showing motion (Phase 1) whilst repeating syllables (interference task) to prevent internal verbalisation, then saw two variants of each, one correct and one incorrect (wrong Manner or Path), and had to decide as fast as possible which one they had seen before (Phase 2); (ii) a verbal condition aimed to test the impact of production on memory in Phase 2, by asking subjects to verbalise the clips during Phase 1.

Irrespective of language and condition, all participants made more errors with Path than with Manner, and more errors overall in the non-verbal than in the verbal condition. In the non-verbal condition, age and language also affected error types: With increasing age, English speakers made fewer errors with Manner and more with Path, suggesting a gradual tuning in to language-specific memory performance patterns. Although French children showed similar tendencies, the reverse pattern occurred among adults, who produced more Manner-errors than English adults.

The findings indicate that language aids memorisation in both languages, but that crosslinguistic differences gradually affect children's linguistic acquisition as well as aspects of their cognitive development.

Mental state language and vocabulary size in Polish-English bilingual children

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Bilingual children are reported to have smaller vocabularies in each language, compared to monolingual peers (Bialystok, et al., 2010). Yet not much is known about the mental state language of bilingual children. Here, we explore the relation between lexical knowledge of a bilingual child and their use of mental state terms (e.g. ‘think’, ‘know’, ‘want’) which are – as a rule – acquired even later than other lower-frequency words (Shatz et al., 1983).

In order to have insight into children’s own inclination to describe mental states spontaneously, we use child-made narratives based on a set of pictures (Gagarina et al., 2012). We examine narratives by Polish immigrant children living in the UK (aged 3;8-6;5), told in Polish (n=40) and in English (n=40). The bilingual’s narratives in Polish are compared to 40 narratives of Polish monolinguals, matched for age and SES. We analyse children’s lexical choices of mental terms, Theory of Mind development (Białecka-Pikul, 2012) and their receptive and productive vocabulary measured in both their languages with the use of standardized tests (e.g. BPVSII, Dunn et al., 2009; EVT-2, Williams, 2006).

The results show that when telling a story in Polish, bilingual and monolingual children use the same number of mental state terms, even though bilinguals score significantly lower on
vocabulary tests. Furthermore, bilinguals use an equal number of mental terms in their Polish and English narratives, regardless of high or low vocabulary knowledge in those languages. We suggest that the mental language competence (Antonietti et al., 2006) in L1 develops together with ToM and other cognitive abilities and may be transferrable to L2; thus, mental terms may appear in bilingual’s L2 even earlier than low-frequency words.

The study is part of a larger project that investigates linguistic and cognitive development of Polish immigrant preschool children living in the UK.


The development of metaphor comprehension in Arabic-speaking children

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This study explores the emergence of metaphorical understanding in typically developing Arabic-speaking children, an area of research very much still in its infancy. Few studies that have investigated metaphor development have sufficiently distinguished different types of metaphors; here, we explore whether some types of metaphors that are claimed to be rooted in human cognition and learned early on as the child starts to experience the world (i.e. primary conceptual metaphors) differ from other types of metaphors that are based on perceived similarities (i.e., perceptual metaphors). In addition, the study examines the role of metaphor conventionality (i.e. lexicalized versus novel metaphors) on metaphor development. While evidence suggests that metaphor development starts when the child is four years, the same onset age should not be automatically assumed for different types of metaphors, nor for all languages.

To establish the development of comprehension of metaphors in Arabic, this study tested 80 typically developing children between three and six years of age, and 20 typically developing adults between 18 and 30 on a new metaphor story comprehension task. The task consisted of 20 short stories that contained five conventional primary conceptual metaphors, five novel primary conceptual metaphors, five conventional perceptual metaphors, and five novel perceptual metaphors. Participants were also tested on non-verbal and verbal abilities.

Results from the adult participants confirm the suitability of the metaphor story task. Child results confirm the role of verbal ability in metaphor comprehension, as well as overall superior performance on conventional metaphors. In terms of primary versus perceptual metaphors, however, we found a smaller than expected difference in performance, which we will discuss in light of studies on English and Conceptual Metaphor Theory.
The influence of phoneme awareness on word-level reading is well established, but the reciprocal influence of orthography on phoneme awareness is less well understood. Orthographic influences could act longitudinally at the letter-level (learning letters stimulates an awareness of phonemes by making the sounds in words explicit), or word-level (learning to read words leads to phonemically organized phonological representations). We tested 707 children at three time points across the first two years of school. Structural equation models showed that phoneme awareness predicted letter-sound, and letter knowledge predicted phoneme awareness from the beginning to the end of the first year. In contrast, while phoneme awareness predicted word reading, word reading did not predict phoneme awareness in the second year. Therefore, there appears to be an early reciprocal relationship between letter-sound knowledge and phoneme awareness, but this reciprocity does not extend to the second year of school once children have progressed from learning letters to reading whole words. In conclusion, we suggest that learning letters precipitates early phoneme deletion ability, but that once children have acquired the alphabetic principle, further gains in orthographic knowledge do not appear to be causally related to the development of phoneme awareness.

Predicting reading comprehension: The roles of phonological and morphological knowledge in typical and atypical readers

It is well established that children who struggle with processing speech sounds (phonology) are also likely to have difficulties in reading and writing. This project investigates how much children use information about the internal structure of words (morphology) to compensate for these difficulties. Morphology refers to the parts of words that carry meaning, for example, the word ‘boys’ has two morphemes - ‘boy’ and ‘s’, which indicates a plural.

Knowledge of a word’s morphemes can help us to read and write unusual words such as ‘health’ (which contains heal) and ‘sign’ (which shares a morpheme with signal and signature). It is important to know whether children who have phonological difficulties are sensitive to this type of information, and if so, whether this sensitivity helps their progress in reading and writing over time. If it does, then this implies that morphological knowledge can compensate for phonological difficulties.

The study focuses on 36 children with dyslexia and 29 children with a history of transient hearing loss due to glue ear and their chronological age matched and reading age matched controls. The children completed a battery of phonological, morphological and literacy tasks at Time 1 and were retested on reading comprehension 18 months later. At Time 1, both impaired groups showed similar levels of reading comprehension. While both the dyslexic and OM children showed phonological impairments, only the dyslexic group showed additional weaknesses in morphological awareness. Data collection for the follow up is still ongoing, but it is anticipated that both phonological and morphological skills will predict later reading comprehension skills.
The development of global and phonemic sensitivity in young children

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Background: There is long standing debate about the extent to which children represent words in terms of global properties or phonological segments. Some authors propose qualitative differences between the phonological representations of adults and children, yet few studies have investigated how children’s sensitivity to phonemic versus global similarity changes over time. The current study explores concurrent developmental trajectories of both global and phonemic sensitivity in nursery- and reception-age typically-developing children.

Method: Participants comprised a cross sectional (N=90, age range: 3;2 to 5;7) and a longitudinal sample (N=24, age range 3;2 to 5;1). Children’s performance was measured at four timepoints on a mispronunciation reconstruction task where they identified the most likely target word from a mispronounced input. Response choices were controlled for number of phonemes in common and global similarity, allowing us to separate these two potential influences.

Results: Children aged 3;2 to 3;10 already showed significant levels of sensitivity to the number of shared phonemes between words, over and above their global similarity. Children’s sensitivity to phonemes was found to increase over the first two years of school but did not reach adult levels. Children’s sensitivity to global similarity increased during the nursery year, reaching adult levels by the beginning of reception (aged 4;0 to 4;8).

Conclusion: The fact that global sensitivity increased, rather than dropped, over time suggests that there is no trade off associated with the rise in phoneme sensitivity as we might expect within the lexical restructuring model (Metsala & Walley, 1998). The findings indicate that global similarity relations remain important throughout development and are more consistent with PRIMIR’s model of simultaneous levels of representation (Werker & Curtin, 2005).
Session: 6B  Room: LT4  Chair: Debbie Gooch

English language proficiency at school entry and attainment over the first two years of school: A population study of children learning English as an additional language

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Introduction: Having English as an additional language (EAL) is associated with poor attainment over the early school years. This study explored the relationship between English language proficiency at school entry and behaviour and attainment over the first two years of school in children learning EAL and monolingual peers.

Method: Teachers completed a questionnaire for 782 children with EAL, and 6485 English-speaking monolingual children, who were at the end of reception year (age 4-5). For each child, teachers provided ratings of English language proficiency and behaviour, and completed the Early Years Foundation Stage Profile (EYFSP). This study also incorporated data from Key Stage 1 (KS1) assessments, completed at the end of year 2 (age 6-7), for 648 children with EAL and 5749 monolingual children.

Results: After controlling for demographic variables, low language proficiency (LLP) in children with EAL, and especially in monolingual children, was associated with a greater likelihood of displaying behavioural difficulties and poor development on the EYFSP in reception year and a greater likelihood of performing below target in KS1 assessments in year 2. Compared to monolingual children with typical language proficiency (TLP), children with EAL and TLP were slightly more likely to show poor development on the EYFSP, but were no more likely to display behavioural difficulties in reception year. Children with EAL and TLP were less likely to perform below target in KS1 assessments in year 2 than monolingual children with TLP.

Discussion: These results suggest that English language proficiency at school entry is important in determining behaviour and attainment over the first two years of school in children with EAL.

Language outcomes and comorbidities at 7 years in the Early Language in Victoria Study

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The Early Language in Victoria Study is a prospective, longitudinal study of a community cohort of children growing up in Melbourne, Australia. Concurrent measures of communication skill, vocabulary and language development were obtained across the first 7 years of life to investigate how Language Impairment (LI) evolved. The aims of this study were to determine at 7 years (i) the proportion of children with low language (LL) (ii) how many children also had LL at 2 and 4 years of age and (iii) the presence of co-existing conditions.

1900, 8-10 month old infants were recruited at baseline, 1600 completed face to face assessment of language skills at 4 years and 1300 at 7 years of age. The primary outcome measure was receptive and expressive language measured by the Clinical Evaluation of Language Fundamentals 4th Edition (CELF-4). Other measures included a behavioural screening questionnaire (the Strengths and Difficulties Questionnaire; SDQ) and a health-related quality of life measure (the Pediatric Quality of Life Inventory Parent-Proxy Report: PedsQL).

At 7 years of age 18.9% of children (227/1204) had low language (≥ 1.25 SD below the mean on expressive and/or receptive language; CELF-4). Of these, 54% (111/206) also had low language at 4 years (≥ 1.25 SD below the mean on expressive or receptive language as measured by the CELF-P2) and 39% (82/210) were classified as late talkers at 2 years (≤ 10th centile on the Communicative Developmental Inventory vocabulary production). Children with
LL were more likely to score in the abnormal range on the total difficulties scale of the SDQ than their peers with typical language (20.1% vs 8.9%) and more likely to score more poorly on the PedsQL (24.2% vs 8.2%).

The rates of LL remain high across childhood in this community sample. The implications of the research and considerations for policy and programs will be discussed.

**Utility-based quality of life of children with language difficulties: A population-based longitudinal study**

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Objectives: The link between language difficulties and adverse social, emotional and educational outcomes is well-established. However, little is known about how preschool language difficulties impact on children’s quality of life (QoL), in particular in the early years of primary school. We aim to examine the relationship between preschool language difficulties and QoL of children up to 6 years of age in a large community-based cohort.

Methods: We conducted a longitudinal survey nested within a population-based randomised controlled trial which aims to improve preschool language delay in the community. Participants were 1055 4-year-old children from 7 of 31 local government areas in greater Melbourne, Australia. The Clinical Evaluation of Language Fundamentals- Preschool, 2nd Edition (CELF-P2) was used to assess expressive and/or receptive language scores. Children with expressive and/or receptive language scores more than 1.25 SD below the mean at age 4 years were considered to have language difficulties. QoL was measured using the generic, preference-based Health Utility Index (HUI) 3.

Results: 200/1055 children had language difficulties. The mean (SD) of overall HUI QoL scores of children at 4 years was .90 (.13). There was significant difference in the mean overall QoL scores of children with and without language difficulties (mean difference = .06, 95% CI .04 to .09, p<.001). The difference is considered clinical meaningful. These findings held after adjusting for child gender, parental education, household income, SEIFA scores and study group status (mean difference = .05, 95% CI .02 to .08, p<.001).

Conclusions: Preschool language difficulties (both receptive and expressive) were associated with lower overall QoL in 4 year-old children. Interventions for preschool language difficulties should take into account factors associated with quality of life and be designed to improve both children’s language difficulties and well-being.
Is lexical processing for embodied vocabulary items linked to preschoolers’ fine motor skills?

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Previous research investigating links between movement and language development has often focused either on links between gesture and speech or the increased opportunities for language development provided through emerging motor skill. A third perspective builds on theories of embodied cognition and predicts that past and present experiences with movement facilitate language processing. In a previous study, we found that children’s fine motor skills (FMS) related to their lexical development for words that were more “embodied”. Specifically, words whose referents could be more easily manipulated with the hand (e.g., “belt” vs. “wall”) were processed more accurately by children with greater FMS - even though there was no inherent or immediate link between the FMS and embodied vocabulary items.

Two studies further explore this surprising finding. In the first, we tested whether FMS related to speed of embodied-vocabulary processing. Preschool children (n=90, age=5;1) were administered measures of high-embodiment and low-embodiment vocabulary, FMS, general vocabulary, and reasoning. Consistent with hypotheses, high-embodiment words were processed more quickly and children with greater FMS showed more rapid response times to these words. Findings indicate that FMS link to lexical development for embodied words, even when no explicit commonality exists (e.g., the FMS task of coin-slotting bears no inherent link with the high-embodiment word “belt”). In the second study, additional data are presented using a second type of embodied vocabulary, namely sensory adjectives from four modalities (sight, touch, smell, and hearing). If engaging in motor interactions with real objects is the mechanism by which processing of high-embodiment items predict greater FMS, then high-embodiment and touch-sense words should link more strongly to one another than to the other sensory modalities. Findings are expected to shed light on the role that motor interactions play in language development.

Imageability, frequency and form class in lexical acquisition

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The age of acquisition of a word depends on its frequency, length, as well as semantics. One semantic property that has been studied with increasing interest is imageability, which reflects how easily a word elicits sensory images of its referents. Number of studies reported a positive relationship between word imageability and the age of acquisition (e.g. Morrison, Chappell, & Ellis, 1997). However, only few studies used actual child data to examine this relationship (e.g. McDonough, Song, Hirsh-Pasek, Golinkoff, and Lannon, 2011). It is also possible that differences in mean imageability are responsible for the fact that nouns predominate in early vocabularies (Ma, Golinkoff, Hirsh-Pasek, McDonough, Tardiff, 2009). Two studies addressed the role of imageability in acquisition using different types of data and different languages.

Study 1 used the Manchester corpus of 12 children acquiring English, aged 2 to 3 (Theakston, Lieven, Pine, & Rowland, 2004). The analysis examined whether the age of first, third, or fifth usage of a word is related to its imageability. Maternal word frequency and form class (noun vs. verb) were statistically controlled. Results revealed facilitative effects of
imageability. For the relation between form class and imageability, the analyses suggested interaction between form class and imageability, with weaker imageability effect in verbs.

Study 2 used the data from the Czech adaptation of MacArthur-Bates CDI. Ratings of imageability were collected from Czech adults. Binomial mixed model examined the effects of age, lexical score, word imageability, word frequency and form class on the likelihood of using a particular word. Significant effects of imageability, frequency, and form class were found, with no interactions

The findings confirm, using two distinct types of child data, that imageability facilitates word acquisition. Imageability also accounts at least for some of the difference in acquisition timing of verbs and nouns.

Using pupillometry to study early lexical representations: Mispronunciation detection in onsets

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Recent findings indicate that early lexical representations contain sub-phonemic information (Mani and Plunkett, 2011; White and Morgan, 2008). However, due to the methodological challenges in child language research, the level of detail and the factors that influence detailedness in early words have not yet been fully explored. This work introduces a novel method for investigating early lexical representations: pupillometry. Previous research has shown that children’s pupil dilation is associated with cognitive load in general (Jackson and Sirois, 2009), and incongruency detection in particular (Hochmann and Papeo, 2014). Building on those findings, we used pupil dilation to study the level of detail encoded in early lexical representations. We employed pupillometry with 30-month-old German children. In each trial, we presented an image followed by either a correct auditory label or a mispronounced version thereof. By systematically manipulating the number of feature changes in the onset (e.g., baby ~ paby ~ taby ~ shaby, respectively), we tested whether featural distance predicted the degree of pupil dilation. Our results support the existence of a relationship between featural distance and pupil dilation: Words that deviate more from the correct form (e.g., differing by two and three features) were associated with a larger degree of pupil dilation than words that deviate less (e.g., differing by one feature) and correct word forms. This result indicates that children are sensitive to featural distance and, as such, it corroborates previous work that found early words to contain sub-phonemic detail. Thus, we establish the potential use of pupillometry in child language research. We furthermore discuss two lexical factors that modulate the size and time-course of pupil dilation: degree of familiarity with the word and neighborhood density. We consider the implications of our results for language acquisition models, including the PRIMIR framework (Werker and Curtin, 2005).
The development of discourse cohesion in French and German: General and language-specific determinants

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It is still debated when children reach mastery in referential cohesion, i.e. during very early (de Cat, 2002) vs. much later phases (Hickmann, 2003). Diverging findings in the literature might partly be due to differences in elicitation materials which do not always allow the systematic study of how the relative transparency of referential systems in interaction with language-specific grammatical constraints might impact acquisition.

The current study compared retellings of 5-, 7- and 10-year-old children as well as adults in German and French (N=16 per group), obtained with 16 short video clips, each showing three scenes: In scene 1, two animals appeared one after the other; in scene 2, one animal acted on the other; in scene 3, one animal (target) disappeared and then re-appeared holding an object. We varied whether the target animal appeared first or second in scene 1, and whether it was the agent or patient in scene 2, thereby creating highly comparable contexts for reference maintenance implying same vs. switch subjects.

Our results reveal effects of age, language and discourse context on discourse cohesion. All groups showed more reduced forms in same vs. switch role contexts. Adults made more systematic use of referential chains showing increasingly reduced forms in French than in German, leading to overall more condensed retellings. Five-year-olds tended to be under-explicit in both languages, while seven-year-olds were highly over-explicit. In German, but not in French, 10-year-olds were also over-explicit, suggesting that referential cohesion is mastered earlier in French than in German. We relate this result to the more transparent French system of referential means, as well as to an interfering influence of word order constraints in German.

These results show that discourse cohesion still develops at age 10. We highlight the impact of both language-independent cognitive factors and language-specific constraints in explaining the observed development.

Depicted actions and information structure affect pronoun resolution in German children

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Using eye tracking, we investigated how depicted actions interact with information structure during German children’s and adults’ comprehension of ambiguous discourse reference. Based on Bittner and Kuehnast (2011, First Language) younger children should mainly use the visual, contextual cues, but older children might exploit the pragmatic cues (focus it-clefts). Furthermore, we should see a subject preference at all ages. Three-to-seven-year-olds and adult controls listened to either (2a) or (2b) while watching screen illustrations of two animals (corresponding to the subject and the object). The animals either performed the action (e.g. tickling) or not. Thereafter, participants heard an ambiguous pronoun sentence (3), and we recorded their looks to the subject or object referent. We also asked participants to identify the pronoun referent (4).

Example sentences:

<table>
<thead>
<tr>
<th></th>
<th>Introduction sentence</th>
<th>Da sind Herr Bär und Herr Tiger</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2a</td>
<td>Canonical sentence</td>
<td>Herr Bär kitzelt Herrn Tiger</td>
</tr>
<tr>
<td>2b</td>
<td>Subject-cleft</td>
<td>Es ist Herr Bär, der Herrn Tiger kitzelt</td>
</tr>
</tbody>
</table>
Preliminary analyses: Contrary to our hypotheses, 3-to-4-year-olds' eye gaze revealed their sensitivity to focus constructions immediately after pronoun onset (0-500ms) if actions were depicted. An overall focus effect emerged from 1501-2000ms after pronoun onset. Five-year-old children’s eye-gaze behavior resembled that of the 3-to-4-year-olds. They further disambiguated the pronoun offline more often as the object than subject when actions were depicted (and more often as the subject than object when actions were absent). As hypothesized, the oldest children’s gaze behaviour and offline responses revealed a clear focus sensitivity independent of the actions. The adults had a clear subject preference evident in both on-and offline data, which could not be detected in the children.

**Beginning to use German ABER and English BUT**

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The use of the connectives aber and but is dependent on knowledge both on the level of semantics and pragmatics. In semantic opposition uses like (1) for instance, but expresses an adversative relation between contrasting propositions. In (2) aber relates to the illocutionary force of the utterance and expresses the child¹’s unwillingness to comply with the adult’s intent.

(1) ADU: The sun doesn’t come at night. CHI: But the moon does.
(2) ADU: Nee, Salz nicht. ('You don’t take salt’). CHI: Aber doch. ('Yes, I do').

Connectives such as aber and but can operate on different levels of communication at once and can also be used to signal a change of topic; their contribution is dependent on the monological or dialogical nature of the utterance (Thomas, 2005). In the present study, the dense corpora of the German child Leo (2;00-2;11) and the English child Thomas (2;08-3;07) are analysed. Contrary to previous claims in the literature, results do not suggest a sequence of semantic and pragmatic uses (e.g. Kyratzis & Ervin-Tripp, 1999). Both use types emerge soon after the first examples of aber or but in the data and are often realized simultaneously.

Findings indicate that early aber and but signal a basic adversative relation which can be located on different levels but is binary in that children express that something either is or is not the case. The later uses become more variable and include multiplex contrasts in that the adversative connective does not signal a categorical difference, but the relevance of one of several alternatives.

**Poster presentation abstracts: Monday 20th July**

**Boards: 1 – 3  Keyword: Literacy**

**The importance of oral language for writing in 7-9 year old children**

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Little research has looked at explicit links between oral language and writing (Shanahan, 2006). This presentation aims to explore the importance of oral language and oral narrative skills to different writing components, in mainstream UK school children aged 7-9 years.

Fifty monolingual children completed a written narrative task, as well as measures of oral language (word structure; formulated sentences; recalling sentences; receptive vocabulary), oral narrative (content; MLU), spelling and non-verbal ability at the end of school year 3, when the children were 7-8 years old, and again a year later. Written narratives were analysed according to four different components based on the UK National Curriculum assessment focuses for writing: sentence structure; punctuation; text structure and organisation; and composition and effect.

At the end of year 3, multiple regression analyses showed spelling to be a highly significant contributor to all four writing components. Oral language and oral narrative contributed significantly to the sentence structure, punctuation and composition and effect components. Data from the end of year 4 showed the continued importance of spelling to all four writing components. However, there was generally an increased role of oral language and oral narrative skills, and a shift from the significant unique influence of oral language skills in year 3 to oral narrative skills in year 4.

These results confirm the influence of spelling constraints on writing performance at this age. However, they also highlight the importance of developing children’s oral language and oral narrative skills for writing. The implications for the role of oral language and oral narrative in relation to developmental writing models will be discussed. The longitudinal data add to our understanding of how the relationships between oral and written language change over time and how particular oral language skills may support writing development within an educational setting.

**Modelling the relationship between prosodic sensitivity and emergent literacy**

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A converging literature has demonstrated that prosodic sensitivity (the rhythmic patterning of speech) is related to literacy development and theoretical models of this relationship have begun to enter the literature (see Holliman et al., 2014). It has been theorized that the observed relationship between prosodic sensitivity and reading and spelling might be partially mediated by children’s vocabulary knowledge, phonological awareness, and morphological awareness; however, no study to date has tested this model with children in the earliest stage of reading development. In this study, four- to five-year-old English-speaking children (N = 101) who were identified as pre-readers completed a new test of prosodic sensitivity and were also assessed for their vocabulary knowledge, phonological awareness, and morphological awareness. One year later, participating children (N = 93) were assessed for their reading and spelling. The new measure was found to be reliable, understood by children of this age, and sensitive to individual differences in prosodic sensitivity. It also correlated significantly with all other measures in this study. A path analysis indicated that the model proposed by Holliman et al. provided an adequate fit to our sample data; specifically, the results suggest that
prosodic sensitivity in pre-literate children predicts reading and spelling via its inter-relationships with other emergent literacy skills (i.e., vocabulary knowledge, phonological awareness, and morphological awareness). It is argued that prosodic sensitivity plays an important role in early literacy development.

**Efficacy of a reading and language intervention on comprehension and spelling skills: A randomized controlled trial with children learning to read**

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Children learning to read in languages with relatively transparent orthography often master decoding quickly but experience problems with reading comprehension (Florit & Cain, 2011). We present a randomised controlled trial that evaluated the efficacy of two teaching methods on comprehension and spelling skills of Slovak speaking children.

In a randomized controlled trial, 199 TD children from 6 Slovak primary schools (mean age = 79.35, SD = 4.5) from Grade 1 were allocated to either i) an experimental group receiving a 10-month language and reading training with a focus on comprehension, or ii) a control group receiving the traditional curriculum. At the beginning of the trial, the groups were matched on age, non-verbal IQ and nonword repetition skills. The experimental group was taught with a focus on extracting implicit information with techniques such as dynamic interactive reading (de Sá, 2012), story-telling story-acting (Nicolopoulou et al., 2006), or narrative comprehension. Spelling was taught by providing explicit rules and a focus on meta-linguistic knowledge. The control group was taught according to a traditional reading method used in Slovakia: the focus was on decoding; the main spelling activity was copying text, but no explanation of orthographic rules was provided. The trial was run for 1 academic year, 9 hours per week. The intervention was delivered by teachers trained and supported by the research team.

Children in the experimental group showed significantly better performance than children in the control group on measures of listening comprehension and spelling. Early intervention with focus on comprehension and meta-linguistic awareness rather than reading techniques for children in Grade 1 was effective and can successfully support the skills underpinning reading comprehension and spelling skills.

The developmental trajectory of the typical adult pattern of left hemisphere dominance for language has received renewed attention in recent years (Toga & Thompson, 2003; Bishop, 2013). However, research focusing on language dominance in children has been hampered by the strict movement constraints of many neuroimaging methods. Consequently, many studies of child language adopt passive speech perception tasks with neonates (e.g., Mingawa-Kawai et al., 2012) or higher order language tasks with older children who have begun school. These latter studies report left-lateralised activity that develops with age (Szaflarski et al., 2012) and proficiency (Groen et al., 2012). However, given that the acquisition of literacy is thought to affect the neurobiology of oral language processing (Dehaene et al., 2010) a question remains whether early leftward asymmetries relate to proficiency before the onset of formal literacy training.

Functional transcranial Doppler sonography (fTCD) is a fast and non-invasive way of establishing hemispheric dominance during cognitive tasks (Deppe et al., 2004). The technique measures event related changes in the speed of blood flow in left and right middle cerebral arteries. In the current study we used fTCD to examine lateralisation of language processing in 17 preschool children (Mean age = 3.5 years). Children completed an fTCD animation description task (Bishop et al., 2013) and a battery of language assessments. As a group the children showed left lateralisation (Laterality Index mean = 1.83 (sd 3.7) which approached significance (when contrasted with zero) \( t(16) = 2.03, p = .059 \). Eleven of the children were significantly left lateralised, 1 was right lateralised, and 5 showed low lateralisation. Concurrent correlations between the strength of lateralised responses and offline behavioural language measures were not found.

The same children were tested again 12 months later on the same fTCD measure and behavioural battery. The longitudinal relationship between hemispheric lateralisation and behaviour will be reported. These data have the potential to offer unique insights into individual variability of functional lateralisation and its relationship to language and literacy development in the early years.

The human body is an object and a medium of the earliest perceptual, physical and social experience of human beings. The question addressed here was how the semantic differentiation in language unfolds in the course of language acquisition: what are the commonalities and differences between children and adults in categorization and naming of body parts.

The participants were given 90 drawings of body parts to name (material developed by Jordan et al., 2009). The frequency and variety of responses were statistically compared across age levels (5-, 7-, 9 year-olds and adults). In addition, the usage of conventional lexemes, and the usage of holonyms/meronyms for particular body parts were explored.

The analysis revealed that the average number of different responses increased with age \( F(3,86)=13.477 \ p<0.01 \), as well as the average number of lexicalized responses per participant.
(F/3,86/=31.615 p<0.01), indicating a developmental trajectory in the conventional usage of lexicon. Since the stimuli were susceptible to multiple naming, most of the stimuli triggered more than one correct response (e.g. 'arm'/ 'upper-arm'/ 'above the elbow' for marked upper-arm). Hence, the stimuli were sorted into four groups according to the number of triggered responses (1, 2, 3-6 and 7-12 responses), which revealed significantly different distributions across the age levels (X²/9/=17,11, N=360, p=0.047).

The findings reveal that Serbian children and adults differ in the naming of body parts – children production is less differentiated. Adults are rather specific and tend to use meronymic term, while young children use holonyms for the same reference (e.g. 'knee' vs. 'leg', 'fingers' vs. 'hand'). Before the target meronymic lexicalization is fully accomplished, the children opt for descriptive prepositional responses that are semantically correct but not fully conventional. These findings suggest that development in this semantic domain is laid in two processes: differentiation in the lexical meaning, and acquisition of conventionality

**The role of attention in word learning from shared storybooks: Contextual repetition aids word learning.**

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Shared storyboard reading is enjoyed by both parents and children. Considerable research shows it also offers excellent opportunities for children to learn new words. Children hearing the same story repeatedly learn names for novel objects significantly better than children hearing the same number of object names presented in different stories (Horst, Parsons & Bryan, 2011; Williams & Horst, 2014). Horst (2013) argues that repeating the context in which a novel object is presented allows children to focus more on the novel names and objects when stories are repeated (rather than the plot or other aspects of the illustrations). This suggests that the effect is due to contextual cueing, where viewing repeated scenes enables faster processing of visual targets (Chun, 2000). The current study explores this explanation using eye-tracking, as eye movements provide a useful index of visual attention (Hutton, 2008).

The current study examined both the word learning and eye movements of 24 3-year-old children listening to stories read on a computer in the lab (for a similar method, see also Evans & Saint Aubin, 2013). Children either heard the same story repeatedly or three different stories. Importantly, all children received the same number of target word-object exposures and completed identical test trials. Consistent with a contextual cueing account, we found longer looking times and faster fixations to target objects when stories were repeated, as well as better word learning. Conversely, we observed more variable looking strategies when different stories were heard, as well as poorer overall word learning.

Taken together the findings of multiple measures support a contextual cueing explanation for word learning success from repeated storyboard readings. These findings provide a comprehensive account of how repetition facilitates word learning and provide insight into the attentional mechanisms underpinning variations in word learning from shared storyboard readings.

Investigating the role of input in early word learning: a comparison of Dutch and Chinese infant-directed speech

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Child-directed speech (CDS) has distinctive prosody compared to adult-directed speech (ADS) and it is found to facilitate word learning (Ma, Houston & Hirsh-Pasek, 2011). However, few studies have investigated the prosody of new words and utterances introducing new words. Additionally, the cross-linguistic differences in CDS haven't received enough attention. Specifically, tonal languages (e.g., Chinese) employ F0 to differentiate lexical meanings, whereas non-tonal languages do not. It can be predicted that the prosodic marking of new words, especially F0, may differ across languages. This project set out to investigate the input in word learning situations by comparing the prosody of Dutch and Chinese CDS.

Dutch mothers of 18-month-olds (N=5) and 24-month-olds (N=5) and Chinese mothers of 18-month-olds (N=5) were instructed to read the same picture book consisting of 5 target words (bisyllabic) to their children and to adults. The Dutch target words consisted of three trochaic words and two iambic words, while the Chinese words included four tones and a neutral tone. The target words and the utterances embedding them (N=394) were analysed using Praat. Duration and F0-related prosodic cues were measured. The preliminary results showed that (1) there were significant differences between ADS and CDS in each language in most measures but not in F0 range of utterance, or duration and F0 range of target words, suggesting that even though CDS has distinctive prosody compared to ADS, it's not the case in all measures during word learning. (2) The variances were unequal between Dutch and Chinese CDS in min F0 of utterance (p=0.001), and all F0 measures of target words (p=0.001), indicating that Chinese CDS showed more variance compared to Dutch. Further analysis includes age effect and the phonetic information of tones. Based on these results, a follow-up study will test children's word learning when different prosodic cues are manipulated.

The effect of age on the composition of the first 10 words: Evidence from the UK-CDI

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Traditionally, many studies on children's first words have focussed on cross-linguistic analyses, investigating whether children acquire language with a universal noun bias or whether their first words more directly reflect which words are spoken in their environment (see Tardif et al., 2008). However, few papers have, as yet, investigated the effect of age on the composition of children's first words. If children approach language with a noun bias, the age of first word acquisition should not impact the composition of those words. However, if the first words reflect the most common words in the input, we might expect younger and older children to learn different words due to different environmental factors, e.g. a shift in mobility and feeding practices. A new parent report instrument (UK-CDI) is used to compare the composition of the first 10 words in children who reached 10 words at 8-10 months of age with those who reached 10 words at 16-18 months. For the data collected (N=172), a one-way age x all words ANOVA reveals a significant main effect for age [F(1,170)=58.49; p<0.000]. A repeated measures 2 x 5 ANOVA (age x word categories) shows a significant interaction effect between age and word categories [F(4,680)=9.73; p=<0.000] indicating that the age at which the first spoken words occur affects the type of words learnt. Only 43% of the first 10 words produced by 16-18-month-olds were nouns, compared to 64% for the 8-10-month-olds. In addition, overall, 16-18-month-olds had words that spanned more categories, learnt a greater number of sounds (e.g. woof, grr), and knew more food/drink words. However, both groups produced similar numbers of words for games and routines (e.g. hello, yes). The results suggest that the early environment
of children plays a substantial role in the composition of the early lexicon within, as well as between, languages.


Orthographic facilitation for oral vocabulary acquisition: The effect of instructions and spelling-sound consistency

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Learning new vocabulary is a lifelong endeavour and vocabulary knowledge is critical for the development of literacy skills and for educational attainment more generally. Nevertheless, teaching vocabulary presents a challenge for teachers and speech and language therapists working with children. Recent findings indicate that the presence of orthography during training promotes oral vocabulary learning (e.g., Rosenthal & Ehri, 2008). However, in previous studies, the presence of orthography during word learning was typically incidental. Our first aim was to investigate whether explicitly highlighting orthography would boost orthographic facilitation. If the influence of orthography on oral vocabulary learning operates via benefits for learning phonology, orthographic facilitation should be particularly marked for words with more consistent spelling-sound mappings. Our second aim was to explore this proposal; existing evidence is mixed (Jubenville et al., 2014; Ricketts et al., 2009). Forty-four children (9 - 10 years) were taught meanings for 16 unknown polysyllabic words. Training was conducted in two sessions, one week apart. Half of the words were taught with the orthographic form present and half without. Twenty-two children were alerted to the presence of orthography; remaining children were not. Words varied continuously on a measure of spelling-sound consistency (Levenshtein orthographic distance / phonological distance). One week after training, semantic learning was assessed using a cued hierarchy to elicit full and partial semantic knowledge. Orthographic learning was also assessed to determine sensitivity to the orthographic forms. Generalized Linear Mixed-effects Models showed that semantic learning was greater for (i) items taught with orthography present, and (ii) children receiving explicit instructions about the presence of orthography. Spelling-sound consistency did not interact with orthographic facilitation. Explicitly emphasising orthography promotes oral vocabulary learning across words that vary in spelling-sound consistency. The theoretical and practical implications of these findings will be considered.

First uses of symbols by hominins 200, 000 years BP and by children at 8-26 months

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A fundamental, intriguing, but as yet unanswered evolutionary question is when did any species first begin to use symbols. We recently proposed a new hypothesis, that the first use of full symbols by any species occurred by identifying and sharing found symbols. Some Homo species that had never made symbols would discover, in naturally available patterns in nature, examples evoking in their minds reference to conspecifics, trees, lions, breasts, faces, snakes, gazelles, and so on. Previously controversial evidence for a small number of such symbolic objects dated variously between 200,000 BP to 2.5 Million BP is easily integrated with this new hypothesis. Here we review such sparse evidence together with multiple lines of cross-disciplinary inquiry including psychological experimentation on symbol acquisition by 8-26-month old children and research on brain sizes across development for both young children and modern nonhuman primates. This cross-disciplinary approach generated novel but testable predictions about when and how the first use of found symbols by hominins arose. New
research on prehistoric objects in museum collections here identifies new objects of symbolic value which were found in their natural state, transported and collected by hominins at multiple sites. Many of these newly identified symbolic objects were in no way shaped or worked by the hominins, whose estimated brain sizes from varied sites were comparable to modern human infants during the age period 8 to 26 months.

From these new empirical findings coupled with theoretical considerations we predict that further systematic research will demonstrate substantial growth in the number and variety of found symbols in the period 2 million yr. BP to 200,000 yr. BP. That pattern of findings would provide the first clear material evidence basis for changes in symbolic behavior that helped drive the co-evolution of larger more complex brains and increasingly complex symbolic behavior.

**Boards: 11 – 18**  
**Keyword: Language impairment**

**Aggravated difficulty in the production of relative clauses by Arabic speaking children with language impairment**

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Relative clauses (RCs) pose a great difficulty for children with language impairment (LI). This difficulty is expected to be aggravated in Palestinian Arabic (PA) due to their ambiguous nature: RCs in PA always include resumptive clitics, but might be derived either via binding, or via movement. This yields a more gradual acquisition and a unique pattern of errors even in the production of RCs by typically developing preschool PA-speaking children.

The present study investigates the production of RCs by 50 PA-speaking children (10 5-years-old with LI, 20 age-matched controls and 20 MLU-matched 3-years-old controls). All children were asked to narrate a story (Frog Where are You) in order to assess their linguistic abilities. 5 types of RCs were elicited using an elicited production task with pictures.

In analyzing the use of language in the narrative task, homogeneity sub-tests following a one-way-ANOVA showed that the LI-Group formed a homogeneous group with the MLU-group in terms of narrative length (in words), as well as grammatical complexity (measured by the number of conjoined, adverbiacl and complex clauses produced). By contrast, for the production of RCs, the two control groups formed a homogenous group, while the LI-group showed a significantly lower performance for all RCs tested. Error pattern in the production of RCs further distinguished between the MLU-group and the LI-group: while the MLU-group produced resumptive DPs and subject-fronting errors which can be interpreted in terms of feature checking, the LI-group tended to omitted the complementizer altogether.

These findings show a gap between the production of RCs and the linguistic abilities shown by the LI-group in the narrative: while their narratives match those of the MLU-group in length and complexity, their use of relative clauses lags behind. This aggravated difficulty is attributed to the nature of RCs in PA rather than a deviant acquisition pattern.

**The efficacy of non linguistic cognitive treatment on bilingual children with Primary Language Impairment**

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Introduction: Many studies have found that children with Primary Language Impairment (PLI) display subtle deficits in non-linguistic cognitive skills such as memory, attention, and processing speed. According to some authors, non-linguistic cognitive therapy (NLCT) could indirectly improve language skills by facilitating access to information in the brain.
Purpose: This study aims to compare the effectiveness of NLCT in conjunction with linguistic therapy (LT) to LT alone, when treating bilingual children with PLI who live in a linguistic minority setting. We hypothesize that children who receive the combination of NLCT and LT will make greater language gains in both languages and more cognitive gains than children who receive LT alone.

Method: Eight bilingual (French and English) children with PLI ages five to seven participated in this study. Cognitive and linguistic skills in each language were evaluated at the beginning and at the end of the treatment period to determine progress. Four children took part in each treatment condition. In the first condition, children received eight intervention sessions of 60 minutes (one session per week for eight weeks). They only received linguistic treatment. The children in the second condition received 24 sessions (three sessions per week for eight weeks). They received LT as well as NLCT targeting memory, attention, and processing speed. Applications on an iPad were used for the NLCT treatment.

Results: The treatment period took place this spring. Preliminary results will be presented. It is expected that both groups will make cognitive and linguistic gains, but that children who took part in the second condition will make greater gains. Conclusion: This study will contribute to the advancement of knowledge in PLI, and to the effectiveness of speech and language treatment within this particular population.

Changes in emotional health from teenage to early adulthood in young people with language impairment

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The long-term emotional health of young people with Language Impairment (LI) is of interest not only to academics but also to families, educators and employers. Data will be presented from the latest stage of the Manchester Language Study, a large longitudinal study following a cohort of 200 children with LI from 7yrs of age.

Data from 84 young adults with LI who have been followed up at the age of 24yrs of age will be presented, alongside information from 88 typically developing (TD) comparison individuals who were recruited to the study aged 16yrs. Both groups completed the Moods and Feelings Questionnaire (MFQ) regarding depression symptoms and the Child Manifest Anxiety Scale-R (CMAS-R) for anxiety symptoms.

Growth-curve analyses modelling anxiety and depression from 16 to 24 years of age were performed. These revealed that anxiety levels were static over time for both TD and LI groups. However depression scores for the LI group showed a quadratic pattern indicating a lowering of symptoms immediately after leaving school which then increased again at 24yrs. TD participants showed a lower, more static pattern of depression symptoms over time.

The pathway of depression in the LI group was examined further to identify potential predictors of this pattern. Gender showed no relationship with the growth-curve and was removed from the analysis. A time-change variable tracking educational setting and employment levels in this group associated significantly with the LI depression curve: young people with LI who left school at 16yrs but later experienced poor adult employment/education outcomes were more likely to follow this pattern of depression change.

This is the first time that longitudinal predictors and modelling techniques have been combined to better understand changes in depression. The results will enhance theoretical knowledge as well as informing policy and practice for young people with language impairment.
Can nursery key-workers determine which 30-month-olds have comprehension delays? A comparison of three screening tools

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UK nurseries are required to carry out a progress check with two-year-olds in numerous areas of development, including language. Nurseries may use any format (Blades et al., 2014). Many use a format based on the guidance from DfE’s Early Years Foundation Stage (EYFS) my unique child, whereby each of the child’s developmental domains is assigned to an age band (e.g. 22-36 months). Since significant delays in the receptive language of two-year-olds are more predictive of later language and other developmental difficulties than delays in expressive language (Chiat & Roy, 2008, 2013; Beitchman et al., 1996), we compared this current keyworker method of assessment with two other tools in relation to a direct standardized assessment of receptive language.

Seventy monolingual 30-35-month-olds were included. The direct measure was the auditory component of the Preschool Language Scale (PLS), which has been found to have high predictive validity (Chiat & Roy, 2008). The same children were assessed by their keyworkers on three language screening measures: the Language Use Inventory (LUI), the WellComm and the EYFS language and communication sections. Keyworkers also rated children's attentional difficulties. The Wellcomm had acceptable levels of sensitivity and specificity but only when we adapted the manual guidelines. Both the EYFS and LUI had poor sensitivity. The Wellcomm was the only measure which had concurrent validity (p<.001), accounting for a significant amount of variance (37.21%) independently of the child’s age, attention and the keyworker statistics.

The method which most UK nursery keyworkers use to assess the language of two-year-olds does not pick up those who score poorly on direct standardised measures of language comprehension. In fact, the EYFS measure of language comprehension had the poorest relationship of all measures to the auditory component of the PLS. The same keyworkers are much better able to pick out those 30 month-olds with comprehension delays using the WellComm tool.

Word reading mechanisms in children with Autism Spectrum Disorder and Language Impairment

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The reading skills of children with Autism Spectrum Disorders (ASD) are highly heterogeneous, and variation may be linked to underlying oral language skills. Two studies investigated the influence of ASD symptoms and language impairment (LI) on word reading mechanisms. In study 1, the single word reading skills of 43 children with ASD (22 with age-appropriate structural language skills [ALN] and 21 with language impairments [ALI]) were compared to 28 typically developing (TD) peers and 16 non-autistic peers with LI. Word reading was measured using the Castles and Coltheart-2 single word reading assessment (Castles et al., 2009). The TD and ALN children demonstrated age-appropriate word reading, whereas those with ALI and LI read significantly fewer words. Across the sample, both non-word and irregular word reading were predicted by vocabulary knowledge. However, whilst ASD status was not a significant predictor of non-word reading accuracy, it was a significant predictor of irregular word reading. In addition, children with ASD were significantly more likely, and children with LI less likely, than their TD peers to exhibit greater accuracy in reading irregular words as opposed to non-words.

To determine whether the reading profiles of the ALI and LI groups were appropriate for their developmental level, reading scores were compared with scores from younger TD children matched for language ability (LA; Study 2). The LI group did not differ from this LA group on
either non-word or irregular word reading accuracy. In contrast, the ALI group had significantly higher irregular word reading accuracy than the LA group, although they did not differ on non-word reading accuracy.

These results suggest that word reading ability is influenced to a greater extent by language ability than ASD symptomatology, but that individuals with ASD may read through a qualitatively different process, which is less reliant on phonological decoding.

**ADHD symptoms in children at high and low risk of language impairment:**
*Correspondence among parent and teacher reports*

Harriet Maydew, Debbie Gooch, Claire Sears, Courtenay Norbury

Children with language impairment (LI) have higher than expected rates of co-occurring Attention Deficit/Hyperactivity Disorder (ADHD). Rating scales completed by teachers and parents are often used to identify children with elevated symptoms of ADHD, yet there are frequently large discrepancies between the responses of the two informants (Collett, Ohan & Myers, 2003). The current study investigated the relationship between parent and teacher ratings of inattention and hyperactivity using SWAN; a dimensional scale of ADHD symptomology. Our key question was whether the relationship between parent and teacher ratings varied systematically with the child’s overall level of language/communicative skill.

Children were selected from a longitudinal population study of language skills at school entry (The Surrey Communication and Language in Education Study). Completed parent and teacher SWAN questionnaires were returned for 200 children aged between 61-81 months; 106 children were classified as high risk (HR) and 94 as low risk (LR) of LI at school entry.

Teachers rated children as having worse attention/behaviour skills than parents; this was more evident in ratings of attention compared to behaviour. Within the LR group there were no differences between average parent and teacher SWAN ratings, however, within the HR group teachers rated children as having more symptoms of ADHD than parents. For the sample as a whole, parent and teacher inattention ratings were more highly correlated than hyperactivity ratings. The relationship between parent and teacher ratings in both domains was stronger for children in the HR than the LR group.

The results suggest children’s language ability affects the correspondence between parent and teacher ratings of ADHD symptomatology. Our findings will be discussed in light of previous research investigating parent and teacher response discrepancies.

**Speed of processing in language impairment and Attention Deficit/Hyperactivity Disorder**

Claire Sears, Debbie Gooch, Harriet Maydew, Courtenay Norbury

An influential theory of language impairment (LI) posits that affected children have a slower speed of processing (SOP) relative to typically developing (TD) peers (Miller et al. 2001). Differences in SOP, particularly increased variability on speeded tasks, are also reported in Attention Deficit/Hyperactivity Disorder (ADHD) which is frequently comorbid with LI. Given the high rates of co-morbidity between LI and ADHD, the present study asks whether SOP deficits are associated with LI alone, or whether deficits in SOP are more common or more severe in children with LI who also show evidence of attention deficits.

Children were selected from a longitudinal population study of language development (SCALES). Two-hundred-and-fifty-nine children, aged 5-6 years, completed tests of language (receptive/expressive vocabulary, understanding/repeating sentences and narrative recall/comprehension) and SOP (RAN, Coding, Visual Search, Reaction Time) as part of a larger battery. The sample included 49 children with LI (>-1.5 SD on 2/5 language composite scores) and 149 children without LI. Parents and teachers were also asked to complete the SWAN and
children were classified with significant ADHD symptoms (AS) if they were rated as having 6 or more symptoms of either inattention and/or hyperactivity; rating from parents and teachers were combined using DSM field trial criteria. The children were classified into four groups: LI-risk only (n=22), AS only (n=36), LI-risk+AS (n=27) or TD (n=158).

Data were analysed using 2 (LI-risk: yes/no) x 2 (AS: yes/no) ANOVA. The SOP hypothesis predicts a main effect of LI-risk across tasks; our novel question is whether deficits in SOP are more common or more severe in children with LI who also show evidence of attention deficits. Results will be considered in relation to the generalised slowing hypothesis of LI and are discussed in light of current explanations of comorbidity between LI and ADHD.

Who knows what about exhaustivity and quantification? Evidence from (un)impaired German-speaking children

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To interpret exhaustive wh-questions (Who is reading?) correctly, some knowledge about quantification is required. Parallel to structures with a universal quantifier, a complete set of individuals has to be listed. Exhausting the question domain may therefore be derived from an underlying universally quantificational variable (Schulz/Roeper 2011).

Unlike typically-developing (TD) children, children with Specific Language Impairment (SLI) have been reported to exhibit prolonged difficulty with exhaustive wh-questions (Schulz/Roeper 2011, Roeper et al. 2007) and with universal quantification (Sauerland 2006, Seymour et al. 2005). It is still open, whether the acquisition of universal quantifiers and of exhaustive wh-questions are related. 18 TD-children (Ø 6;10 years) and 14 SLI-children (Ø 8;6 years) were tested on universal quantification and on exhaustivity. In a TVJ-task, interpretation of all-sentences (“alle”) and every-sentences (“jeder”) was tested across three conditions (1:1 subject-object-mapping, extra subject, extra object, total No_items=30). Comprehension of exhaustive wh-questions was tested via a question-with-picture task (Schulz 2015) with 12 single wh-(all)-questions, 12 paired wh-questions and 6 triple wh-questions. The results show no difference between TD- and SLI-children in the quantifier task. Both groups performed significantly worse on the extra-object-condition than on the other two conditions (TD: all ps<.001, SLI: all ps<.01, Wilcoxon). There was no influence of quantifier (alle/jeder) (p>.05, Wilcoxon). In single exhaustive wh-questions, SLI-children performed target-like, like TD-children (p=.639, Mann-Whitney-U), while in paired and triple wh-questions the SLI-children performed significantly lower than the TD-children (both ps<.05, Mann-Whitney-U). The most frequent error type here was naming all subjects (30%).

In sum, the SLI-children mastered universal quantifiers in some contexts and exhaustivity in single wh-questions, thus, it is unlikely that their difficulties result from absent universal quantification.

We propose that the SLI-children’s deficits in exhaustive wh-questions result from a problem mapping subjects to objects, which shows up in the interpretation of universal quantifiers, too, pointing to a deficit in the syntax-semantics-interface.

Boards: 19 – 22 Keyword: Gesture

Cognitive effects of beat gestures in pre-school children in a word recall task

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Beat gestures have been shown to be strongly correlated in speech with the presence of acoustic cues of prominence (Krahmer & Swerts, 2007) and to share functions with prosody
such as information highlighting (Loehr, 2012). Previous studies have found that gestures conveying representational information, such as iconic gestures, are related to language and cognitive abilities (e.g., Goldin-Meadow, et al., 2009). So et al. (2012) found that while adults benefited from the presence of both iconic and beat gestures to recall words, preschool children only benefited from the presence of iconic gestures. In their study, however, every word of the list was presented with a beat gesture, and thus children could not perceive beat gestures as a prominent cue in contrast with items with less prominent cues. Moreover, the list of words in this experiment was presented without a child-directed pragmatic context.

The aim of our study is to investigate whether the presence of beat gestures helps preschool children to recall words in a list when they are presented in a relevant discourse. Our hypothesis is that children will benefit from the presence of beat gestures in a serial recall activity task. One hundred 3 to 5-year old children were presented with a story and were asked to recall a list of target items that the character had to perform before leaving. Trials consisted of a list of five different disyllabic nouns, presented in two different conditions (within-subjects): a ‘no-beat condition’, and a ‘beat condition’. In order to control for serial sequential effects (i.e., first and the last elements of a list are easier to remember), the beat/no-beat exposure only affected the middle item in the word list. The results show that infants recall significantly better the target item in the beat condition than in the no-beat condition.

**Six-year old children's linguistic and gestural expression of contextual constraints**

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We present a new study that examines the way contextual constraints find their expression in six-year-old children's gesture and speech (Colletta & Pellenq, 2009; Mazur-Palandre & Lund, 2012). A general assumption in the study of child language places narrative production as occurring later than conversation abilities in language acquisition (Colletta, 2004). However, many types of finalized dialogue involve several pragmatic constraints, e.g. monitoring social interaction while handling tasks that can also be carried out monologically (e.g., reasoning, explaining or narrating). Our goal is to find specific indicators that illustrate children's competencies in such complex communication tasks. Our intention is to contribute to theoretical issues in pragmatics through a study of how children mobilize pragmatic constraints of language production and also to account for language development within the framework of it being understood as a multimodal phenomenon.

We observed two types of explanation, each in a separate study: (a) instructional explanation (INSTRUCT-EX), formulating a set of instructions leading to some result and (b) process explanation, depicting a set of actions leading to some result (PROCESS-EX). We extracted 15 INSTRUCT-EX from study 1 and 15 PROCESS-EX from study 2. The data was transcribed and annotated using ELAN software. Annotations provided information on syntax, lexicon, discourse and co-speech gestures.

Analyses concerned linguistic variables (mean number of clauses, of new information markers, of connectors, of modal structures and of enunciation-process markers) and gesture variables (mean number of gestures per explanation, of referential, pragmatic and word searching gestures). We compared the two types of explanations for each variable. Results revealed that instructional explanation and process explanation show differences in both the linguistic and gestural material child speakers use to carry them out. It thus follows that children are capable of adapting their linguistic and gestural expression to the discourse contexts in which they find themselves.
Gestures of a child with hearing loss in two different interactional settings.

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The aim of this study was to find out if the features of the multimodalities (gesture and speech) of a child with hearing loss and deficit of linguistic abilities change according to the hearing capacities of his interactional partners, in other words, does the child behave differently when exposed to: a) face-to-face interactions with children with hearing impairments, and b) face-to-face interactions with typically developing pairs language-matched?

Two experiments with children with and without hearing impairments were video recorded: in the first one, the target child was asked to interact with two other hearing children from the same school class (Year 5); in the second one, the same child interacted with two other children, also of the same class, with cochlear implant. In both settings the means of communication used by all participants is oral speech and none of them had any knowledge of sign language.

Gestures (not only upper limb movements but also other kinesic elements) of the target child were annotated and analyzed according to the theoretical background of Gesture Studies (Müller et al., 2013): for the classification of prosodic properties of speech the principles from Interactional Linguistics were followed (Selting & Couper-Kuhlen, 2001).

Results showed that there is a relation between the characteristics of the participants of each interactional setting and the quantity and quality (form and function) of gestures performed by the child. Differences regarding the prosodic parameters of speech were also detected.


Gesture use in children with Specific Language Impairment and their parents.

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Gesture is a key facet of human communication and selectively predicts oral language attainments in typically developing (TD) children (Rowe & Goldin-Meadow, 2009). In addition, links have been found between parental and child gesture use (Rowe, Özc.alişkan, & Goldin-Meadow, 2008). Gesture may serve as an important compensatory mechanism for children with language impairment (LI) (Iverson & Braddock, 2011). However, gesture is a complex task integrating social, cognitive and motor skills. Thus, the ability to use gesture effectively in populations in which these precursor skills may be compromised is uncertain. The current research explores the relationship between gesture and language in children with LI and their parents.

Forty children aged 7-8 years old (20 LI and 20 TD) and their parents participated. We observed parent-child interaction during tasks designed to measure both spontaneous and elicited gesture use. This talk will focus on a referential communication task. During this task parents and children sit facing a board that cannot be seen by the other person. Initially the child is shown a board with eight pictures, whereas the parent is given an empty board with 12 possible pictures to stick to their board. To successfully complete this task the parent and child need to communicate with each other so that ultimately the parent’s board matches the child’s board at the end of the task.

Through this task we will measure (1) the relationship between parent and child gesture use and (2) the extent to which children with LI use gesture to compensate for their language
difficulties. Specifically, we hypothesise that significant positive correlations will be found between parent and child gesture use in both groups. We also predict that children with LI will make more extending gestures than TD children, i.e. using gestures that are not realised in speech to extend their utterances.

Boards: 23 – 27       Keyword: Phonology

Verb-based anticipation during language processing: Turkish and Dutch

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Anticipation of upcoming input is a key characteristic of spoken language comprehension. It has been observed that both adults (e.g., Altmann & Kamide, 1999) and developing language users (e.g., Mani & Huetig, 2012) process language predictively. In the present study we investigate anticipatory spoken language processing comparatively in a head-final (Turkish) and a head-initial language (Dutch). Eye-gaze behavior of Turkish and Dutch children (4- to 6-years) was assessed in an eye-tracking task. Moreover, we assessed their executive functioning (Flanker task), working memory (Digit span task) and vocabulary skills (Peabody Vocabulary test). Following Altmann & Kamide (1999), Turkish children listened to spoken instructions such as in (1) and Dutch children listened to instructions such as in (2). During these instructions they saw two objects (e.g., a cake and a tree) on the visual display. The children’s task was to listen to the sentence and look at the screen.

(1) Çocuk yiyiyor/görüyör bu büyük keki ‘The boy eats/sees the big cake’
(2) De jongen eet/ziet de grote taart ‘The boy eats/sees the big cake’

In Turkish, SOV structures are more frequent than SVO structures (Erguvanlı, 1984), whereas in Dutch SVO is the more common word order. Note that we tested SVO structures in both Turkish and Dutch. The question is thus whether Turkish participants are still able to use the semantic constraint of the verb when it arrives early in a sentence, even though the verb information usually arrives late in their native language.

Preliminary results show that Turkish (t(20)=-3.46, p<0.01) and Dutch children (t(40)=-6.99, p<0.001) anticipated the target object (cake) more in the semantic than the neutral condition. This indicates that linguistic anticipation is present in both head-final and head-initial languages. Correlational analyses will be done to examine whether predictive capacity is dependent on cognitive and/or linguistic skills.

Older children’s acoustic-phonetic and linguistic adaptations to an interlocutor with a hearing-impairment

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Most children with a hearing impairment in the UK attend classes with their normal-hearing peers, leading to frequent interactions between normal-hearing (NH) and hearing-impaired (HI) children. Relatively little is known, however, about the communication strategies that children use when interacting with a peer with hearing loss. This study examined how NH and HI children adapt to the needs of a HI interlocutor, focusing on the acoustic-phonetic and linguistic properties of their speech. 18 NH and 18 HI children between 9 and 15 years old performed two problem-solving communicative tasks in pairs: one session was done with a friend with normal-hearing (NH-directed speech) and one session was completed with a friend with a hearing-impairment (HI-directed speech). As expected, task transaction time increased in
interactions involving a HI interlocutor, implying an increase in communication difficulty in the HI-directed condition. Compared to NH peers, HI speakers had a slower speech rate, higher speech intensity and greater F0 range; they also used shorter phrases and lexically more frequent content words, and spoke more in overlap with their interlocutor. However, in HI-directed compared to NH-directed conditions, both HI and NH participants slightly decreased their speech rate, and increased their F0 range, mean F0 and the intensity of their speech; both groups also shortened the length of their phrases. Neither NH nor HI speakers were found to change the lexical frequency of content words or amount of speech overlap in response to a HI interlocutor. Findings suggest that both NH and HI children are able to adapt similarly to the needs of their interlocutor, even though speech and language production is more effortful for HI children than their NH peers.

Phonological skills in low birth weight south Indian children: An exploratory study

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Researches on phonological skills in children born pre-term reveals equivocal findings when compared to typically developing children. Considering most phonological processes get suppressed by 4 years of age, this study aimed at profiling the phonological skills in 3-4 year old children (n=60) with Low Birth Weight (LBW) and typically developing (TD) Tamil speaking children. The children were classified into two groups with thirty in each: children with LBW (<2500 grams); and TD children (>2500 grams).

The investigator was involved in a general conversation task with each child to elicit a minimum of 100 utterances, which was audio and video recorded. The recorded samples were phonetically transcribed by two qualified speech language pathologists and further analysed to estimate the percentage of consonants correct (PCC) and frequency of occurrence of phonological processes. Independent t test and Mann Whitney U tests were used to compared the data between the groups. The results of the study revealed a significant difference (p<0.05) between children with LBW and TD children in PCC. Alveolar and palatal phonemes were predominantly compromised followed by velars in both the groups. With respect to manner of articulation, errors on laterals and trill were higher.

These errors were high in children with LBW in the ratio of 1.5:1. Further, the percentage of occurrence of cluster reduction (71.27%), stopping (50.61%) and initial constant deletion (39.17%) were twice greater in children with LBW. Cluster reduction being the phonological process with maximum occurrence in both the groups indicated significant difference while the other processes did not indicate the same despite the difference in the frequency. The results of the study emphasises on the similarity in the pattern of acquisition of speech sounds between children with LBW and TD children, however there was a difference in the correct usage of consonants.

Do 17-month-olds use knowledge of native language to constrain object-word mappings?

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Understanding what types of sounds qualify as potential labels is a critical component of word learning. Previous research has demonstrated that by 12 months of age, infants begin to narrow their attention to elements of speech that are characteristic of their native language (Werker & Tees, 1990) and will use this information to inform their mapping of novel sounds to objects. For example, Mackenzie and colleagues (2012) recently demonstrated that 12-month-olds were unable to form associations between objects and labels that were phonotactically illegal in their native language of English (i.e., CCVC Czech words). In the same study, however, researchers also found that infants were willing to accept labels that were phonologically similar
but phonetically distinct to English (i.e., Japanese CVCV words). Thus, while 12-month-olds may begin to use knowledge of their native language to constrain word learning, it remains unclear when infants can use differences in phonetic realization to further constrain object-label associations. To address this question, we tested the associative learning of 17-month-old native English learners (N = 19) using a procedure similar to Mackenzie et al. (2012). Infants were initially habituated to two Japanese words (sika [jika] and hashi [hafii]) that were each paired with a novel object. At test, infants were then presented with two test trials: (a) a Same trial in which a familiar object-label pairing was presented, and (b) a Switch trial in which a familiar object and label were paired in a novel combination. Results indicate that infants looked significantly longer at novel (Switch) (M = 11.80, SD = 4.34) than familiar (Same) pairings (M = 8.45, SD = 3.15), t(15) = -2.52, p = .02. This suggests that, despite their increased age and experience with English, 17-month-olds were still willing to accept Japanese words as labels.

Ephenthesis in children’s oral and written productions of consonant clusters

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Vowel ephenthesis – often used between the two consonants which make up a heterosyllabic consonant cluster – is one of the main criteria to distinguish branching onsets from heterosyllabic consonant clusters in European Portuguese (henceforth EP). However, Freitas (2002) also reports the existence of epenthetic productions when branching onsets are produced by Portuguese children during their acquisition path of that linguistic system. That strategy is rare and seldom attested in other languages of the world (Bernhardt & Stemberger, 1998). In this work the findings of Freitas (2002) are corroborated as we find productions of vowel ephenthesis between both consonant structures.

Data for this investigation was collected during individual sessions with an instrument specifically created for this study and both spoken and written infantile productions of isolated words containing consonant clusters of both types were observed. 56 children of both sexes participated in this study divided into two experimental groups: (i) 27 1st graders; (ii) 29 4th graders; the couple attending two elementary public schools.

Despite being common to all the productions above, vowel ephenthesis’ strategy is used in different manners by the children of this study. When it comes to oral productions, children insert no more than [i] between tautosyllabic clusters, but they insert [i], [u] and [u] between heterosyllabic clusters. In writing, in turn, there is a great diversity of vowels inserted between the two types of consonant clusters analysed. Thus, if we assume that epenthetic vowels are unmarked segments in linguistic systems, the use of [i] (or <e> in written productions) as epenthetic vowel, in the collected corpus, gives no empirical evidence to Mateus and d’Andrade (2000) hypothesis that in EP the unmarked vowel is [i].

Boards: 28 – 34        Keyword: Atypical populations

The acquisition of personal deixis by blind vs. sighted children

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It has been reported that many blind children produce reversal errors (you instead of I) (Pérez-Pereira & Conti-Ramsden 2008). Since personal pronouns (a subcategory of personal deictic terms) are context-bound, they have no fixed referent. Children have more difficulties acquiring such expressions than non-deictic terms (Clark 1978). This applies in particular to blind children who often have problems taking different perspectives (Pérez-Pereira 1999). Thus, the question arises to which extent these children might show different paths in the
acquisition of personal deixis, that is to say how they manage to encode personal reference in the absence of the visual modality.

This paper studies the acquisition of personal deixis (personal and possessive pronouns, possessive adjectives) by comparing interactions of two mother-child dyads, one involving a blind child, the other a sighted. It will be shown 1) which respectively how many personal deictic terms occur in the children's speech and 2) if these expressions are correctly used or not (analysis of reversal errors).

To answer these questions, we used a semi-structured observational context which is an adapted version of the Communication Play Protocol (Adamson & Bakeman 2013). This methodology invites mothers to interact with their children in different communicative contexts which require different interaction strategies. Interactions of a blind and a sighted boy (both: 2;9 to 3;7) with their mothers were videotaped and speech was transcribed, coded and analyzed with respect to the type and correctness.

**Referential gaze versus arrows: Intentionality and word learning in children with autism spectrum disorders and in typical development**

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Referential gaze (eye gaze directed to an object) is used to identify objects, as in situations of word learning. It is often assumed that children learn words by ascribing referential intent to the speaker’s gaze. Intentional reading of gaze may have important consequences for the nature and depth of word learning (Norbury et al., 2010). Yet, learning from gaze may not require intention ascription; it may simply serve as a cue of attentional salience. We examine intentional interpretation of cues and its potential impact on word learning in typically-developing children (TYP) and children with autism spectrum disorders (ASD).

Our target sample size will include 6- to 10-year-old children with ASD (n = 26) or TYP (n = 40). Children watch videos teaching novel words in two conditions: referential gaze cue or a moving arrow cue (control for attentional salience). An eye-tracker records children's on-line attention to the cues and off-line tasks (word description, semantic associations, word generalization) assess semantic learning after the session and 1-week later.

Preliminary analyses of 16 TYP children reveal that referential gaze is treated differently from an arrow. TYP children looked significantly longer at the region of referential gaze (M = .69 sec, SD = .71) versus the arrow region (M = .17 sec, SD = .27), and had significantly more looks back and forth between cue and target with referential gaze (M = 1.87 looks, SD = 1.91) versus arrow (M = .77 looks, SD = 1.33). Two children with ASD also demonstrated longer looking to referential gaze (M = .62, SD = .25) versus arrow (M = .34, SD = .42), although contingent looking was similar between cues (referential gaze M = 2, SD = 1.41; arrow M = 2, SD = 1.83).

This study aims to clarify the role of intentions in using referential gaze for word learning.

**Narrative abilities of children with emotional and behavioral disorders compared to their TD peers: A psycholinguistic analysis**

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Recent studies have emphasized the importance of combining core language and narrative measures when assessing the language abilities of children with psychiatric disorders. The present study examines the narrative abilities of children with emotional and behavioral disorders, focusing on the linguistic expression of narrative content at the level of action and consciousness.

24 children aged 9 to 12 from low-medium socio-economic backgrounds participated in the study - 12 children diagnosed with emotional and behavioral disorders living in a special
education home-school; and a control group of 12 TD children. Oral narratives were collected using a wordless picture book "The fishing trip". These were analyzed following the developmental typology proposed by Nicolopoulou & Richner (2007) to capture three levels of character representation – from actors to agents to persons. The linguistic analysis focused on the strategies of inter-clausal connectivity used to represent each level.

Results showed that the narratives produced by children in the study group contained a higher proportion of clauses expressing the levels of action and agency (over 70%) while over 60% of the clauses in the TD children's narratives represented the level of person. These levels interacted with the choice of clause packaging architecture (Berman & Nir, 2009). Actions were expressed mainly by isolated clauses, reaching as high as 50% of the clauses in the narratives of the study group as compared to less than 30% in the control group. Actions marked as intentional, co-occurring with emotional reactions or other events were expressed in clauses linked by symmetric or dependent stringing. Finally, actions coordinated with higher mental and psychological capacities occurred in more complex hierarchical constructions.

The study underscores the need to integrate between socio-cognitive and linguistic aspects of narrative production, in order to better identify the language capacities of children with emotional and behavioral disorders.


Comparing a multisensory approach to traditional speech and language intervention: Effects on the language abilities of children with fetal alcohol syndrome

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Introduction: Many studies have shown that providing therapy within a multisensory environment with various clinical populations can be very advantageous. This approach can apply to many different clients, young and old, with physical or sensory impairments, cognitive delay, as well as developmental and intellectual disabilities. The use of multisensory environments could lead to increased communication, attention and concentration in people with learning disabilities or other impairments. Multisensory environments have also been used in speech and language therapy, physiotherapy and occupational therapy. However, research showing the efficacy of a multisensory therapy approach in the field of speech and language pathology is scarce. There is a lack of in-depth knowledge and research on the effects of this multisensory approach. The specific goal of this study was to compare the short terms effects of a multisensory approach with a more traditional approach to speech and language therapy on communication, behavior, motivation, attention and linguistic abilities of children diagnosed with Fetal Alcohol Syndrome (FAS).

Method: Three group of 5 children diagnosed with FAS aged between 4 and 7 years participated in the study. The children’s language abilities were assessed using linguistic and cognitive tests pre and post treatment. The first group received traditional speech and language therapy, the second group received speech and language therapy in an multisensory environment and the third group received no intervention (delayed).

Results: Preliminary results will be presented. Positive effects on language skills and on motivation are anticipated for FAS.

Conclusion: Results will be relevant to families, speech-language pathologists, teachers, pediatricians and family practitioners working with this population.
Precursors to phonological awareness in Down syndrome

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This study investigates the relationship between different perceptual and cognitive abilities (e.g., sound discrimination, sustained attention, phonological memory, rapid naming, executive function, grammar, and receptive vocabulary), in order to identify precursors of phonological awareness in Down syndrome (DS). Phonological awareness is an important precursor of reading for typical developing children, and there remains debate in the literature about whether or not phonological awareness is a precursor for reading skills in DS. It is thus crucial to understand the precursors to phonological awareness in DS to investigate further its developmental trajectory over time. It is also critical to take into account within-syndrome individual differences. The group of participants includes 10 children and adolescents with Down syndrome between 8 and 15 years of age, as well as 10 typical developing children between 4 and 12 years of age. Our results should provide insights for therapists, educators and researchers concerning the development and remediation of these early phonological abilities, so that children and adolescents with Down syndrome (and perhaps other neurodevelopmental disorders with language problems) can have an improved chance of achieving better levels of literacy. By building intervention strategies based on identifying the precursors of phonological awareness in the current study, we believe that we should be able to boost, in a cascading effect, phonological awareness and literacy skills.

The relationship between environment and reading abilities in Williams syndrome and Down syndrome.

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Williams syndrome (WS) is a neurodevelopmental disorder characterised by moderate learning disability and an uneven cognitive profile with relative strengths in language and social skills, in contrast to visuo-spatial and number (Mervis et al., 2003). Individuals with Down syndrome (DS) have similar IQ scores to individuals with WS but their cognitive profile includes strengths in visuo-spatial skills relative to verbal short-term memory and expressive language abilities (Abbeduto, Warren & Conners, 2007). Those with WS and DS have been found to show great variability in reading ability and impairments have been linked to phonological deficits. However, phonological awareness scores in WS are often above what is expected for their mental abilities (Menghini, Verucci & Vicari, 2004). Thus, as poor reading ability is present despite strong phonological awareness relative to mental age, phonological awareness alone cannot explain variability in reading abilities observed in WS and DS.

Home environment factors such as socioeconomic status, resources available, and parental attitudes have been shown to be important factors in typically developing children’s and individuals with language learning difficulties through the use of questionnaires (Al Otaiba et al., 2009; Hamilton, 2013; Senechal, 2006; Senechal and LeFevre, 2002). Using parental reports, this study investigated whether WS and DS individuals who have a greater availability of reading related resources in the home and/or spend a greater amount of time reading will have greater reported reading skills (reported by parents e.g. ability to read single words, short sentences, passages) than those who have limited resources and receive less reading related attention. Furthermore, this study explored the relationship between education received and reported reading abilities. Data collection will continue until the end of April 2015 and thus far 41 participants with WS, 82 with DS, and 43 typically developing participants aged between 4 and 40 years old have returned completed questionnaires.
Working memory and executive function in language impaired and dyslexic pupils

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Around 50% of children diagnosed with dyslexia meet the criteria for language impairment and vice versa. However, it has been established that these are separable disorders which do not arise from a homogeneous source. This study examines the hypothesis that these two groups, despite similarity in their language skills, differ in their higher-level cognitive processes such as executive function and working memory.

Previous studies have not compared the two groups directly however research does suggest that for short-term memory, both dyslexic and language impaired individuals experience a similar pattern of verbal but not visual difficulty. For tasks involving working memory and executive function, language impaired individuals show difficulties in both verbal and visual tasks whereas dyslexic individuals show difficulties only in verbal tasks.

Secondary school aged children aged 11-15 with language impairment, reading difficulties or both (N = 60), were compared to chronological age matched and reading age matched controls. Measures of visual and verbal short-term memory, working memory and inhibition were taken. Data collection is still ongoing, but it is anticipated that the children with language impairment will show difficulties in both visual and verbal inhibition and working memory, while dyslexic individuals will show difficulties only on verbal tasks.

Boards: 36 – 43       Keyword: Bi-/multi-lingualism

Literacy development in bilingual children with nonsyndromic orofacial clefts

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Background: Studies have suggested that unilingual children with repaired cleft lip and/or palate (CLP) not attributable to genetic syndromes are at-risk of poor academic outcomes. The cognitive-linguistic processes underlying these unexpected learning difficulties are not well understood. Moreover, there is limited research on the risk of under-achievement in bilingual children with nonsyndromic CLP compared with typically developing (TD) peers of similar language background.

Method: English-Mandarin bilingual children with repaired CLP (aged 4-7 years) who were English-dominant (n=17) or Mandarin-dominant (n=18) were matched pairwise on language background, age, socioeconomic status, and nonverbal reasoning to TD children. Participants were assessed in English (main medium for education) using a locally normed battery of tests assessing early literacy and cognitive-linguistic factors associated with literacy development: Wide Range Achievement Test for single-word reading, Bilingual Language Assessment Battery for receptive and expressive vocabulary, rapid automatised naming, phonological awareness (phoneme isolation and deletion), and auditory memory (forward and backward digit span).

Results: Reading abilities were equivalent for both the English-dominant and Mandarin-dominant CLP and TD groups, but the Mandarin-dominant CLP group showed poorer phonological awareness compared with their Mandarin-dominant TD peers. Furthermore, regardless of language dominance, faster RAN correlated with better reading ability in the CLP groups but not the TD groups, while receptive vocabulary correlated with reading ability in the TD groups but not the CLP groups.

Conclusion: These findings suggest that the underlying cognitive-linguistic processing of bilingual children with CLP differs from their TD peers, and that children with CLP learning
English as a second language are at greater risk of poor academic outcomes. The data has theoretical implications concerning the impact of early differences in the speech mechanism on phonological and literacy development, and supports literacy screening and intervention for bilingual children with CLP.

**Language planning programs for French language learners: What is the role of the SLP?**

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In Canada, French and English are co-official languages. However, the status of these languages remains unequal in most of the country. Outside of Quebec, English-speaking Canadians find themselves within a majority context: French being the minority language. In Ontario, French medium elementary schools have seen a significant increase in the linguistic and cultural diversity of their students. Most of who come from families who use English in their households and have very limited knowledge of French. Initially, these children often have difficulties at school due to their insufficient language competence in French and are faced with the challenges of having to learn, develop and maintain a minority language. This study looked at how French medium schools intervene and help children who are French Language Learners (FLL). More precisely, this study examined a language planning program instated by the province to support the needs of FLLs. This program, although widely used, has received very little scientific attention. Through means of a literature review, interviews and surveys, this study looked at the practices and techniques used by these schools to teach FLLs. Canada's language situation is similar to other countries that have two co-official languages, such as Ireland, Whales and the Basque Country. Children attending the minority language schools in these countries face similar difficulties to those witnessed in Canada, such that the results from this study can give insight on the use of various techniques with children learning a minority language in a majority language setting. This study also looked at the Speech and language pathologist's (SLP) role in these types of FLL programs. Although it is not part of the scope of practice of an SLP to intervene within these programs, this study has shown that SLPs knowledge about bilingualism and child language development is an asset.

**Metacognitive influences on English-Language-Learning preschoolers’ ability to monitor their comprehension of story read-alouds**

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Reading achievement can be predicted, in part, by a child’s early ability to understand stories read aloud by others (Paris & Paris, 2003; van den Broek et al., 2005). Comprehending a story read-aloud requires that children successfully complete two tasks: primary comprehension (i.e., constructing a mental model of the text) and comprehension monitoring (i.e., detecting inconsistencies between the model and the text) (Skarakis-Doyle & Dempsey, 2008). Some research has suggest that English-Language-Learning (ELL) children may be less adept at tracking the success of their comprehension attempts than their monolingual peers (Dempsey, 2011; Gutierrez-Clellen, 2002). The factors accounting for this difference are not well understood (Dempsey, 2011; Fiester & Pena, 2004; Gutierrez-Clellen, 2002); however, differences in metacognitive skills (specifically, novelty detection ability) might be a factor (Dempsey, 2011; Metcalfe, 1994; Welsh, 2002; Westby, 2004). Research has identified differences between ELL and ME children in metacognitive skills at Kindergarten and in the early school years (Chiappe, Siegel, & Wade-Woolley, 2007; Swanson, Orosco, & Lussier, 2012). The purpose of this investigation was to determine the extent to which such differences might account for differences in the comprehension monitoring profiles of ELL and ME preschoolers. Fifteen ELL and fifteen ME children (3-4 years) are participating in this study. Participants are
read a story and then complete the Joint Story Retell (JSR; Dempsey & Skarakis-Doyle, 2001) and the Expectancy Violation Detection Task (EVDT; Skarakis-Doyle, 2002) to measure primary comprehension and comprehension monitoring abilities. Scores on the Behavioural Rating Inventory of Executive Functioning - Preschool (BRIEF-P; Gioia, Andrews Espy, & Isquith) are tabulated as a measure of metacognitive skill. Preliminary findings indicate (a) a between-groups difference in comprehension monitoring, but not primary comprehension, scores; (b) a moderate correlation between performance on the comprehension monitoring task and scores on the BRIEF-P. Detailed findings and implications will be presented.

A case study of a quadrilingual child

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Researchers and educators face challenges assessing language proficiency in a multilingual context. A traditional way of assessing vocabulary, based on parents’ estimations, is the MacArthur-Bates CDI test (Dale & Penfold 2011). For multilingual children, however, there is a lack of knowledge concerning the vocabulary that might be expected at a given age.

The COST-project BiSLI (COST Action IS0804) developed an assessment tool for preschool children in 34 languages, the Cross-Linguistic Lexical Task (CLT; Haman, Łuniewska & Pomiechowska, 2015). The CLT contains word comprehension and word production tasks utilising picture recognition of nouns and verb. Up to now, the test has been used to assess the vocabulary of monolingual children in 18 languages (Hamann et al 2014). It has also been used for bilingual children in Norway and Luxembourg (Gram Simonsen 2014, Engel de Abreu 2014) and trilingual children in South Africa (Potgieter and Southwood 2014).

This study is the first to use the CLT for four languages (Russian, French, English and Swedish) in one child. The paper reports a case study of the vocabulary of Stefan, a quadrilingual child born and raised in Sweden. Stefan speaks four languages; Russian, French, Swedish, and English. Data were collected on four occasions at approximately two-month intervals. The same elicitation materials from CLT were used for each of the four languages. The results show that there is a strong correlation between the input and the test scores. The highest scores were attained in Russian with lower scores in descending order in Swedish, French and English. In each of the four languages, comprehension was better than production. The results suggest that it is possible to test all languages in a multilingual child with one test if the test is culturally adapted to each language.

Phonological processing in the vocabulary development of bilingual children

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For monolingual children, vocabulary is a good indicator of overall language abilities (Paul, 2001). For bilingual children, vocabulary is distributed, often unevenly, across the two languages spoken, making assessment more challenging and complex (Bedore, Pena, Garcia, & Cortez, 2005; Oller & Pearson, 2002). Few, if any studies have tracked changes in a single preschool system, using objective, culturally appropriate tests in contrasting languages. The nature of vocabulary development and its association with phonological processing, operationalized as nonword repetition, digit recall, and phonological awareness, was investigated in a 3-year longitudinal study (ages 4-6 years) involving three groups of bilingual children in Singapore: English L1/Mandarin L2 (n=34), Mandarin L1/English L2 (n=31), and Malay L1/English L2 (n=30). For each child, five different measures of vocabulary were scored and collated: single language receptive vocabulary in L1 and L2, single language expressive vocabulary in L1 and L2, and conceptual expressive vocabulary of the child’s L1 and L2. Results revealed group differences in the underlying cognitive processes that support the development
of vocabulary that are broadly consistent with the linguistic relationship between the child’s L1 and L2.

What predicts narrative skills of dual language learning preschoolers?

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Narration is an important vehicle and predictor for linguistic, social, and academic learning in childhood. By moving beyond isolated utterances, narrative analysis can provide insight into complex, socially and academically valid aspects of language development (e.g., Norbury, Gemmell, & Paul, 2013), such as decontextualized language skills. Also, the inclusion of narrative assessment procedures has been recommended as a less biased instrument in assessing dual language learners’ (DLLs) language abilities (e.g., Bedore, Pena, Gillam, & Ho, 2010). However, little is known about the factors that influence DLLs’ narrative development, especially in children from dual language backgrounds other than Spanish and English (Hammer, Hoff, Uchikoshi, Gillanders, Castro, & Sandilos, 2014).

The goal of the present study was to analyze the oral fictional narrative productions of Turkish-German preschool-aged children in response to a wordless picture book to explore the relationship between performance on concurrent measures such as language skills, nonverbal intelligence, preschool participation, and indices of narrative complexity. 3-to 6-year-old DLLs completed an assessment battery and produced narrative samples based on the wordless picture book "Frog, Where Are You?" (Mayer, 1969). The variables age, expressive language, and nonverbal intelligence accounted for 54.2 % of variance in overall narrative complexity. This and other findings contribute to our knowledge on emerging narrative language skills of linguistically and culturally diverse preschoolers. Implications will be discussed.

The influence of home language environment on English vocabulary development of hearing-impaired children from families where English is an additional language.

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This small scale study investigated the influence of home language environment (HLE) on receptive vocabulary development of hearing-impaired (HI) children from bilingual/multilingual families where English is an additional language (EAL). The study was conducted with children and their parents from a primary school with a specialist provision for HI children within the ethnically diverse London Borough of Newham. 8 HI children, aged 3 to 5 years were matched for chronological age and home language with 7 hearing children. Languages spoken in their homes were Somali, Panjabi, Gugarati, Urdu, Bengali/Sylheti, Romanian and English. Parents were interviewed using an adapted version of the HLE Questionnaire (McCarthy 2009) for information about family background and languages spoken at home. Receptive vocabulary was assessed at the beginning and end of the academic year using the British Picture Vocabulary Scales II (BPVS II). Teachers were interviewed about languages spoken in class. Findings showed notable variation in language exposure at home for all the EAL children with the EAL HI children exposed to higher amounts of English than the hearing EAL children. Parental variables (e.g. country of birth, country and level of education and preferred language) influenced the languages to which the children were exposed. At school, children were exposed mainly to English. All the children showed improvement in BPVS II scores over time, but the EAL HI children scored lower at both times than did their EAL hearing peers. Further analysis indicated that there was a relationship between the amount of English children were exposed to at home, and their receptive vocabulary scores. The findings emphasize that variations in individual families with respect to HLE do impact on EAL HI children’s spoken
language outcomes. In spite of the small sample size, this highlights the need to take HLE into account in clinical and educational settings

**Constructional learning of caused motion in French-German bilingual children**

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Goldberg et al. (2004) propose that particular verbs facilitate the learning of different argument structure constructions. Those verbs are highly frequent in the input and account for the lion's share of tokens of each construction. As an explanation Goldberg and colleagues argue that these “general-purpose-verbs” are semantically prototypical as well as generic for each construction. Ellis and Ferreiro-Junior (2009) showed that second language learners also follow this path by using the same typical verb for such constructions in their early stages.

Our research focuses on how bilingual children use the caused motion construction. Therefore, we compared the data from French-German bilinguals (4, 6, 8 years) (n=5 per group) with a monolingual German control group. Participants had to describe four types of object displacements that were mimed by the experimenter (cf. Hickmann & Hendriks 2006).

Our results suggest that bilinguals express caused motion just like their monolingual peers. The use of generic and prototypic verbs (e.g. machen 'to do') is highly frequent in the bilingual group at all ages, whereas monolingual 4 year-olds already produce more than 50% of specific verbs (e.g. stecken 'to stick'). Furthermore, we observed a high amount of idiosyncratic verbs that increases with age in the bilingual group. Some bilingual children translated a French verb into German that is prototypical in the French construction but not in the German one.

We argue that this can be explained within the theoretical framework of Construction Grammar (Goldberg 1995). The semantics of any utterance is not primarily produced by the verb but by the construction itself. We also assume that the bilinguals' overuse of generic verbs is due to a limited processing cost since these children are acquiring two languages simultaneously. Thus, the translation of verbs could also be seen as a more economic strategy to facilitate their online production.

Boards: 44 – 50          Keyword: Discourse/Pragmatics

**Preschooler awareness of listener informational need in relation to linguistic reference**

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Using linguistic forms to refer to objects and events necessitates understanding what interlocutors know and what they are paying attention to. Typically-developing children struggle with using linguistic forms of reference well into the early primary school years (see e.g. Graf & Davies, 2014, for a review). Matthews, Butcher, Lieven and Tomasello (2012) carried out two training studies in which 30-month-olds requested one picture out of an array. If the child's request was ambiguous (e.g. 'pig one!' when the array contained two pigs), E2 provided feedback (e.g. 'Which pig?'). They found that while 30-month-olds quickly learned to produce more modified referring expressions (e.g. 'pig dancing'), they also did so in contexts in which this was over-informative (i.e. with 'dissimilar' distractors such as a sheep). The authors conclude that 30-month-olds do not take elements of picture detail into account when determining listener informational need.

We modified Matthews et al.'s (2012) procedure to reduce cognitive load, primarily by reducing array size and modifying the stimuli so they contained no actions, allowing participants to produce complex requests by using early-acquired prepositions. In each training trial, children requested one of two 'similar' pictures which contained identical animals (e.g. TARGET:
pig on bike, DISTRACTER: pig with cake) and received feedback if their first request was ambiguous. There were two test conditions: ‘similar’ vs. ‘dissimilar’ distractors. Our 30-month-olds were significantly less likely to produce complex referring expressions for ‘dissimilar’ pictures, showing sensitivity to when disambiguating information was needed. In addition, we found a relationship between individual differences in parent-rated conversation skills and training outcome. We discuss our data in terms of the roles of cognitive load reduction, and how discourse around repair can focus children’s attention on the need to incorporate listener informational need when planning requests.

**ADHD and communication difficulties: A meta-analysis based on parental CCC reports**

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Language problems are not among the core features required to fulfil the diagnostic criteria of ADHD yet several studies show a high prevalence of language disorders among children with ADHD. However, these studies vary in the degree of homogenitet within the particular clinical group labelled with having attention deficits leaving it unclear the precious level of prevalence, and also many studies include small sample sizes resulting in low levels of statistical power. Finally, studies of associations between ADHD and language difficulties have used different measurements of language abilities making it difficult to reach a conclusion regarding the particular aspect of language being affected in this clinical group.

In order to overcome these limitations we carried out a systematic literature review followed by a meta-analysis in order to estimate the prevalence of language difficulties in children with ADHD compared to typically developing peers.

Results of the literature showed that the most frequently used tool for measuring language abilities of children with ADHD is the Children’s Communication Checklist. Based on this finding we gathered all available studies (six) using the CCC with children that were identified with ADHD based on clinical evaluations.

Meta-analysis using a random-effect model was carried out with a total of 171 children with ADHD compared with typically developing peers. Results showed that children with ADHD were reported to have significantly more language problems compared to peers on all 10 subscales of the CCC with moderate to large effect sizes (.70-1.86).

The results stress the importance of evaluating the communication (dis)abilities of children with ADHD in order to integrate this in intervention and also to make appropriate adjustments in the environment of the children. The results furthermore call for multi-disciplinary assessments of children with ADHD, but also of children with Language impairment, which may be a risk of having ADHD.

**Narrative skills in deaf children: Assessing signed and spoken modalities**

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Narrative skill encompasses the ability to communicate past or future events in chronological order (Beal & Snow, 1994). Deaf children born to hearing parents have restricted access to verbal and/or signed information and demonstrate difficulties in developing narrative structures needed to produce a coherent story (Crossen & Geer, 2001). Yet the assessment of oral deaf children’s narrative skills has focused solely on the use of picture cues. Herman and colleagues have developed a narrative assessment in British Sign Language (BSL) by first asking children to watch a non-verbal story and then retell the narrative (Herman et al., 2004). This approach poses two advantages: both oral and signing deaf children are able to complete the same task; the processing demand of dividing attention between the story pictures and communicating with the experimenter is reduced.
In this study, we tested the reliability and validity of testing oral deaf children on the BSL narrative production test. Sixty children (aged 6 - 11) watched the pre-recorded story. Their spontaneous stories told in English were filmed, transcribed and analysed in terms of story structure and content. Sixty hearing controls and 28 late-signing deaf children (communicating in BSL), matched for age and non-verbal ability, were also tested.

Results revealed good intra-rater and inter-rater reliability, and internal consistency for using the test in English. Vocabulary and age were strong predictors of performance on both content and structure for the oral deaf and hearing children, suggesting good predictive validity. Differences between groups showed that oral and signing deaf children performed similarly on narrative content and structure, but the hearing children performed significantly better.

These findings highlight the usefulness of adapting the BSL narrative production test to assess both signed and spoken languages. Its potential use as a clinical tool and the need for developing narrative interventions, will be discussed.

An RCT to test the causal role of caregiver contingent talk in the language learning of high and low SES infants.

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Children from low SES families tend to have limited language skills compared to higher SES peers and this has important consequences for later life (Fernald, Marchman, & Weisleder, 2012). Recent studies suggest parenting interventions have the most potential to change this picture (Belsky et al., 2007). At the same time, research has shown that parental contingent talk is strongly correlated with vocabulary learning (e.g., Carpenter, Nagell, & Tomasello, 1998) and suggests that increasing contingent talk would promote language development specifically for those at risk due to social disadvantage (Hoff, 2003). Contingent talk refers to a style of communication whereby caregivers talk about what is in their infant’s focus of attention (semantically contingent) and/or respond promptly to infant communication (temporally contingent). However, based on correlational research, it is difficult to establish whether contingent talk is a cause of better language outcomes and whether it is possible to intervene to promote language growth.

We address these issues with an ongoing RCT (N=137; 50% low SES). Half of the families were randomized to a language training condition where parents were shown a video describing contingent talk and asked to practice it daily for a month. Semantically and temporally contingent talk was measured at baseline (when infants were 11 months) and after training (12 months), by coding videos and LENA audio-recordings. Language outcomes are being measured at 15, 18 and 24 months. Preliminary analyses (n=49) reveal that: 1) At baseline, SES is correlated with semantic and temporally contingent talk; 2) At post-test, parents in the training condition significantly increased their use of semantically contingent talk. This effect does not interact with SES; 3) MCDI vocabulary scores at 15 months are significantly higher in the intervention condition. We will report these analyses for the full dataset alongside additional language outcomes at 18 and 24 months.

Prematurity and narrative abilities

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Research has shown that all aspects of premature children’s language are vulnerable to delays: pragmatics, syntax, phonological processing, auditory processing, comprehension and use of complex language. The goal of this study was to determine if premature children born in Northern Ontario, Canada had delays in their narrative abilities in comparison to other premature children, as well as to their peers born term.
In Northern Ontario, Canada, we find communities of people living in a geographical region where their first language is a minority. Most often, they are French-speaking individuals living in an English majority context. Very little is known about this population and, since it constitutes a linguistic minority, findings from studies that were conducted elsewhere in the country or abroad cannot be extrapolated. The speech-language evaluation of Franco-Ontarian children is thus a complex task for speech-language pathologists due to the lack of tools and regional standards.

The children’s narrative abilities were assessed using the *Edmonton Narrative Norms Instrument* (ENNI). Story grammar was used as a measure of the macrostructure. The microstructure was analyzed using the First Mentions as well as the SALT (Systematic Analysis of Language Transcripts) software. Five (5) French-English bilingual premature children (mean age: 6.2 years) were compared to a group of forty-two (42) typically developing children (mean age: 4.5 years) (Langlois & Mayer-Crittenden, 2014). The scores of the five (5) premature children were also compared to the results of a study on premature children in Belgium (Grootecaes et al., 2010). Results will show that the degree of prematurity does impact on narrative abilities. The clinical implications of these results and possible intervention goals will also be discussed.

**Which conversational features lead to an impression of talkativeness in children with Attention Deficit/Hyperactivity Disorder?**

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Several studies reported presence of pragmatic language impairment (PLI) in children with Attention Deficit/Hyperactivity Disorder (ADHD). A common symptom mentioned among others for ADHD and for PLI is the elusive symptom of talkativeness. However, numerous conversational features (talk’s length, turn-taking, topic management) may lead to an impression of talkativeness (Bishop, 1994). Thereby, this study aims to investigate the similarities/specificities of pragmatic behavior focusing on the talk’s length (e.g. word, timing) and turn-taking in interactions between children with ADHD and children with typical development (TD).

18 French-speaking children (6;6-12;4) with/without a diagnosis for ADHD (age-matched) were observed in interaction with their peer. Populations were contrasted for absence/presence of ADHD and PLI by checklists and by a battery of tests for the structural language level. The interactions took place during a show-preparation setting and the snack-time. Data have been transcribed indicating the starting and ending time of each speech turn. The number of words and utterances per turn has been quantified. The turn attribution strategies have been identified though adjacency pairs. The parent’s impression of talkativeness has been extracted from parent’s answers throughout the two checklists for PLI and ADHD.

Data analysis showed an inverse pattern of talk’s length in children with ADHD and TD according to the setting. Although children with ADHD obtained the highest ranking of talkativeness in parent’s evaluations, it didn’t always match with the quantitative measures of talk’s length. Also a proportional turn attribution was observed in both population and settings.

Findings suggest that further conversational features may contribute to the impression of talkativeness and not only the talk’s length could be considered in conversational guidance.
Developing Japanese children’s understanding of theory of mind by using perspective-taking discourses

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Evidence that linguistic experiences facilitate the development of theory of mind (ToM) has been well documented for children during early to middle childhood. Training programs including perspective-shifting discourse and sentential complements for preschoolers, and conversations about mental states for school-age children appeared to be particularly effective. The present two studies examined the efficacy of training using perspective-taking discourse for Japanese children. In the Japanese language, personal pronouns and explicit references to different perspectives are often omitted. Thus, it is expected that perspective-taking discourses could facilitate Japanese children’s theory of mind.

In the first study, 4 year-old children received training in two formats (representation change pictures and location change stories). Two groups of children were matched for language measures and false-belief understanding. In the first phase, after group (A) was trained they outperformed the control group (B) on theory of mind tests. In the second phase, group B received identical training, and their performance increased to a level comparable with group A. The results of a mixed design ANOVA, F (1, 30) = 10.09, p = .003, np²=.25, suggest that the training was effective for 4 year-old Japanese children.

The second study examined the effectiveness of the two types of perspective-taking discourse training. Two groups of 5 year-old children were matched for ToM and language measures and each group received one of the two training formats used in the first study. After training, the groups were compared using ToM measures, including a second-order false-belief task. The group that received representation change pictures training outperformed the group that received location change stories training for the tasks of representational change and second-order reasoning, whereas the opposite was found for deception tasks. These findings suggest that although perspective-taking discourse facilitates children’s ToM, the contexts in which different perspectives were introduced are also important.

Boards: 51 – 52 Keyword: Syntax

The influence of memory load on children’s knowledge and production of two-clause sentences containing before and after.

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In a developmental investigation of 3- to 6-year-olds’ knowledge and production of before and after, we examined the impact of the variation in memory demands imposed by sentences that contain temporal connectives.

A sentence-repetition task assessed knowledge and production of two-clause sentences linked by a temporal connective. Children were asked to repeat a narrated sentence that was presented together with animations of the actions in each clause. We manipulated whether the presentation order matched the chronological order of events: ‘He finished his homework, before he played in the garden’ (chronological order) vs ‘Before he played in the garden, he finished his homework’ (reverse order), and whether the temporal relation between the two events was arbitrary (as above) or predictable from background knowledge: ‘He brushed his teeth, before he went to sleep.’ An independent measure of memory was administered.

As predicted, for each age group performance was influenced by the connective (before vs after) and order (chronological vs reverse). Specifically, children were significantly less likely to accurately repeat target sentences when the presentation order of the two clauses did not match
the chronological order of events, and this effect was more pronounced for sequences linked by after. Surprisingly, there were no effects of background knowledge: regardless of age, children performed comparably when the two clauses shared an arbitrary relation or one that was predictable.

We also report the results from an error analysis, and the relation between these performance indicators and working memory.

**Linguistic correlates of the acquisition of exhaustivity in wh-interrogatives: A study on Polish monolinguals**

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Wh-questions may carry singleton, mention-some and mention-all (exhaustive) readings. The acquisition of exhaustivity in single and multiple exhaustive wh-questions (e.g. Who bought what?; Who gave what to whom?) differs across languages and may be indicative of typical versus impaired linguistic development (Schulz & Roeper, 2011). Empirical studies and theoretical accounts have postulated links between the complexity and acquisition paths of exhaustive wh-interrogatives and their semantic, pragmatic and syntactic properties (see Schulz & Roeper, 2011 and Roeper & de Villiers, 2011 for an overview). Moreover, convincing evidence suggests that exhaustive reading of wh-questions develops in parallel with the comprehension of quantification.

To further the understanding of the factors involved in the acquisition of exhaustivity, the present experiment concentrated on pragmatic, semantic and syntactic correlates of the acquisition of exhaustivity in single and multiple wh-questions. To that end, 28 Polish typically developing monolingual children aged 4;3 - 6;2 were administered a selection of tasks to investigate their skills in interpreting exhaustive wh-questions, receptive syntactic skills as well as dealing with semantic and pragmatic aspects of quantifier comprehension. The analysis of the results revealed different acquisition patterns for exhaustive single and multiple wh-questions. While the scores in single exhaustive wh-questions correlated positively with receptive syntactic skills and semantics of quantifiers, multiple exhaustive wh-questions were linked to age only showing no significant correlations with any of the linguistic dimensions explored in the study. These results corroborate the semantic and syntactic accounts of the acquisition of single exhaustive wh-questions and suggest that the acquisition of multiple exhaustive wh-questions may be moderated by some age dependent cognitive variables, which need to be triggered in further research. In the presentation, we discuss and delineate crucial directions for future studies needed to disentangle the acquisition of exhaustivity.

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Poster presentation abstracts: Tuesday 21st July

Boards: 1 – 7  Keyword: Discourse/Pragmatics


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Children with communication disorders show problems in pragmatic use of language and use to fail in peer’s contexts like, for example, understanding funny situations or telling a joke. Sometimes, these problems observed are due to different causes depending on the disorder (e.g. language delay, cognitive problems or a deficit in social cognition). Moreover, among pragmatic competence, the humour field is quite unexplored, and the causes of why children with different diagnoses (but social communication disorders in common) fail grasping humour remain unclear. To solve this issue, in the present study the ability to understand graphic humour of children with Specific Language Impairment (SLI) were compared to a group of children with Autism Spectrum Disorder (ASD), and also to a group of typical developing children (TD) (n=20 in each group, and ages ranging from 4 to 9 years-old). It was used an adaption of the test originally designed by Puche-Navarro (2004) that assesses four types of graphic jokes: hyperbolic, mentalistic, substitution and complex jokes. Also, all the participants were tested with language (grammar and vocabulary), non-verbal (Raven’s matrices) and social cognition measures (false belief, emotion understanding and Strange Stories). Results showed that SLI and ASD groups were able to understand some kinds of graphic humour, although they were significantly less competent in comparison with TD group. However, predictive models carried out for each group per separate showed that for TD and SLI groups the ability to grasp the hilarious picture was predicted by the age or participants, whereas in the ASD group was predicted by their language and social cognition abilities. Importantly, these results have implications for the assessment of pragmatic skills and the design of intervention methods for children with SLI and ASD.

"Why does mummy say such things?” - children’s explanations for using ironic utterances

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Verbal irony is an example of non-literal language through which additional meaning may be expressed. Understanding non-literal language is crucial in social situations for effective communication (Kastner, May and Hildeman 2001). Recent results show that children are able to understand simple irony as young as at the age of four (Recchia et al 2010, Banasik 2013).

The presented study aimed to provide answers to questions about children’s understanding for using irony, i.e. to explore how preschoolers explain the fact that the speaker said something that appears to be contrary to the intended meaning.

In the sample, 30 four-year-olds, 30 five-year-olds and 30 six-year-olds were presented with Irony Comprehension Task (ICT) - a story comprehension task in the form of audio and visual stimuli programmed in the E-prime software and then asked to answer a series of questions (checking their understanding of the intended utterance meaning, evaluation of the degree to which it was funny and evaluation of the speaker’s attitude). Children responded by touching the screen, which made it possible to measure reaction times. They provided answers to the questions "Why did the character say that?"

Initial results show that the patterns of explanations are similar for four-year olds and five-year-olds, but different from the reasoning of six-year-olds. It is only older children who do
refer to the duality of meanings (intended vs. literal), prescribing either criticizing or humorous function. Occasionally, metalinguistic reference appears in the children’s explanations.

**Is children’s referential informativity associated with their visual, linguistic, or cognitive abilities?**

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Referring expressions (REs) can be optimally informative (e.g. ‘the small apple’ to refer to one of a pair of apples contrasting in size), underinformative (‘the apple’ in the same situation), or overinformative (‘the small green apple’ when no contrast is needed). The form of REs is variable and may be subject to individual differences. Davies and Katsos (2010, expt.1) found that in simple visual displays containing a contrast set, 5 year-olds were frequently underinformative (mean 55%, SD=22). Subgroups in the sample produced either few or very many underinformative REs. These results accord with research which finds that children tend to first produce ambiguous REs, replacing them with fully informative expressions after around seven years of age (Matthews, Lieven & Tomasello, 2007, i.a.).

It has been suggested that children only begin to provide optimal descriptions when they have developed the cognitive resources to engage in comparison activity and to incorporate the resulting modifiers into their REs (Whitehurst, 1976). Thus referring optimally is both cognitively and linguistically demanding. This ability also depends on speakers first noticing objects which visually contrast with the target. This eye-tracking study investigates a lack of full visual scan as a potential cause of habitual underinformativity in both adults (as an individual difference within the group) and 5 year-olds (either as an individual difference or as a group characteristic). Standardised measures of visual attention, language ability, and pragmatic perspective-taking are also analysed as predictors of variance in referring behaviour.

Using a 2 (presence vs. absence of contrast set) x 2 (array complexity: 4 or 8 objects) within-subjects design, a sample of five-year-olds, seven-year-olds, and 24 adult controls play a referential communication game in which they ask an addressee to click on a target object. The adults showed relatively low levels of underinformativity (mean 19%, SD=21) and no significant correlation with performance on the standardised tests. Preliminary data from the child samples are currently being analysed; the various standardised measures are hypothesised to generate a characteristic profile, where underinformative REs correlate with incomplete scanning behaviour, mediated by the child’s visual, linguistic, and pragmatic abilities.

**Pretending not to hear: Potential demonstrations of toddlers’ understanding of the communicative intention**

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Human communication is thought to have a dual intentional structure (Gómez, 1994, Sperber & Wilson, 1986). That is, when we communicate, we want our audience to recognize both that we are communicating (our communicative intention), and what we are communicating (our informative intention). Theoretical accounts propose that our very capacity to acquire language arises by virtue of our grasp of this structure (e.g. Tomasello, 2008), and predict implicit awareness of it from infancy. However, beyond a recent hidden authorship study with 3-year-olds (Grosse, Scott-Phillips, & Tomasello, 2013) there are no studies into this pragmatic insight.

We present a novel study of toddlers’ attempts to pretend not to hear requests from their parents. Arguably, this behaviour indicates they understand, and can selectively respond to communicative intentions specifically. We measured children’s ability to pretend not to hear through parental report, and through observing their response when parents requested they do...
something pleasant (have a snack) or unpleasant (change a nappy). We also measured children’s understanding through a preferential looking test where two adults interacted, occasionally accidentally not noticing, or pretending not to notice, the other’s communicative efforts.

Both 18- and 24-month-olds (N=27) are able to selectively not respond to unpleasant requests – a necessary prerequisite for pretending not to hear. These toddlers avoided eye contact, remained silent and often continued with their activity without giving any indication that they had heard their parent. Some, typically older children, also actively engaged in a new activity in an apparent attempt to make their pretence more convincing. The findings support parental reports that children begin pretending not to hear around 22 months. In the preferential looking paradigm (N=30), 24- but not 18-month-olds distinguished accidental from pretend failure to notice a message. We will present these findings along with a follow-up study currently in progress.

Linguistic markers of ADHD: Measuring organization through storytelling

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This research explores the linguistic manifestation of the diagnostic criterion of problems with organization in children with ADHD. Storytelling involves advanced planning and different levels of organisation. The organisational issues are studied in the context of interaction to understand the intra-subject and inter-subject contribution and ecological effects of problems in organisation.

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Stories told in spontaneous spoken language by a small matched sample of children with ADHD and without ADHD are compared. It was hypothesized that the stories from children with ADHD exhibit problems in the story stages and less signalling of the main topic of information. The story types of narrative, recount, exemplum and anecdote are identified within spontaneous interviews and each story analyzed for story stages: Abstract, Orientation, Complication, Evaluation, Resolution, Remarkable Event, Reaction, Coda, Incident, Interpretation, Record of Events, and Reorientation (Eggin and Slade 1997) and the main themes of information: higher level macroTheme and lower level hyperTheme (Martin and Rose 2007). The effect of interviewer interaction in providing organisation was measured.

The quality of the stories of children with ADHD although largely similar to controls, is specifically compromised in terms of indicators of organisation. The Orientation stages in the narratives of children with ADHD required more prompting. Often the ADHD group presents a hyperTheme before a macroTheme, causing the story to be unclear, triggering prompts. Speakers with ADHD give significantly fewer macroTheme/hyperThemes, have more unclear macroThemes/hyperThemes, and rely more on the interviewer for formulating macroThemes/hyperThemes. When treating the data as a series of case studies, the children with ADHD are usually the outliers in highest five percent of parameters indicating poor organisation.

The compromised organisation in the ADHD stories was found for both inter-subject variables and also in the nature of the interaction that evolved to create organisation.
The influence of visual context and grammar factors on ambiguous pronoun processing in Norwegian children

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In this eye-tracking study, we investigate how ambiguous pronoun processing is influenced by visually depicted actions and linguistically marked focus constructions. We aim to reveal at which age Norwegian children learn to follow these cues in the same way as adults.

Based on prior research, we expected to find a subject preference that grows stronger in children as they grow older (Järvikivi et al., 2013). We also expected younger children to rely more on visual context, and older children to pay more attention to syntactic structure (Bittner and Kuehnast, 2011).

The participants were 3-, 5- and 7-year-old monolingual Norwegian children, as well as an adult control group. They listened to subject-clefs (e.g. "It is the tiger that tickles the bear") or object-clefs (e.g. "It is the bear the tiger tickles"). At the same time, they watched illustrations of two animals (corresponding to the subject and the object) on a screen. The animals were half of the time shown performing the action (e.g. tickling), and the other half of the time not.

Thereafter, the participants heard an ambiguous pronoun sentence (e.g. "He can count to ten"), and eye-gaze data were collected to determine whether they looked at the subject referent or the object referent. In addition, offline data were collected, by asking the participants to name or point at the pronoun referent.

The eye-gaze data shows that 7-year-olds look significantly more at the subject referent in subject-clefs than in object-clefs. The same pattern is found for adults in the offline data, where we also find differences in overall subject preference between adults and young children, but not between adults and 7-year-olds. Thus, older Norwegian children seem to prefer the subject, like adults, but this is only apparent in their gaze data and not in their offline data.

Caregiver-child interaction in children with Autism: Does unstructured play in familiar environment provide better representation?

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Challenges in social use of language is a hallmark feature of children with autism and it may be different in familiar vs. unfamiliar environment. Assessing communication skills in a clinical environment is convenient and time saving. However, it may be essential to consider a child's communication behaviour in a natural and more familiar environment. This study compared the caregiver-child interaction in native Tamil speaking children with autism in clinical and home environments. Five caregiver-children dyads of 2-4 year old children with autism participated. Twenty minutes interaction between the caregiver and child was video recorded in the two environments. The interaction in clinical environment was semi structured with specified materials and the one at home was unstructured play with child's own toys.

Frequency of occurrence of 4 types of sentences and 35 pragmatic acts was obtained from the verbatim transcriptions of the interactions. Descriptive and Wilcoxon Signed rank tests were applied to study group differences. Caregivers of children with autism exhibited significant increase (p=0.043) in the number of initiations (questions, descriptions) at clinic than at home. However, the caregivers’ responses to communication were similar in both the environments except for repetition and waiting for response. The types of sentences used were similar in both environments with more interogatives in clinical environment (M:65.6; SD:14.484). Further, it was observed that the children with autism initiated better in home environment (M: 156.20; SD: 57.573) than in clinical environment (M:125.60; SD:25.958) as indicated in more requests, demonstrations and seeking attention which were non-verbal. The responses of these children were also better in home environment (p<0.05) as evident in responding to questions and
repetitions. The results indicate that language sampling obtained in a natural environment in an unstructured play method may yield more output, thus a better representation of a child’s communication profile.

Boards: 8 – 10

Keyword: Syntax

Comprehension of passive sentences with novel verbs by 25- and 42-month-olds: Eye-tracking and pointing

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There exists a long history of debate around the acquisition of passive sentence structure (e.g. the boy was saved by Spiderman). Studies using act out methods suggested that children do not understand reversible passives until around 4 years and that preschoolers pass through a stage in which they interpret the first noun phrase (NP) as the agent. However, studies using syntactic priming suggest that three-year-olds have abstract representations of passive structure. We used forced choice pointing (Study 1) and eye-tracking (Study 2) to investigate at which age children show verb-general comprehension of passive structure. Since it is possible that when processing passive sentences children have to overcome a first-NP-as-agent bias, we combined preferential looking with eye-tracking measures in order to understand how children’s comprehension of passive sentences unfolds over time. We adapted a paradigm used by Gertner et al. (2006) in which participants simultaneously saw two novel causative actions with reversed agent-patient relations while listening to active and passive sentences with novel verbs. Both Studies 1 and 2 compared 25-month-olds, 41-month-olds and adults in between-subjects sentence structure conditions (Active Transitive vs. Passive). Study 1 found that 41-month-olds pointed above chance for both structures. 25-month-olds did not. Study 2 used eye-tracking to measure looks to the action that matched the active interpretation. A permutation analysis found that all three age-groups distinguished active and passive structures. We also found that the children exhibited a bias to map the first noun phrase (NP) (‘the boy/girl …’) onto an agent before they had processed the second NP. We are the first to find active/passive differentiation with novel verbs in 25-month-olds and to document an incremental first-NP-as-agent bias that can obscure evidence for passive understanding in preschoolers.

Measuring early morphosyntactic development in Spanish: Study on sentence repetition

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Research on language acquisition and disorders highlights the need to evaluate the early phases of language development for the early identification of children with language problems (screening), and to determine the nature and severity of language disorders (diagnosis).

The paper presents a new Sentence Repetition Task developed for evaluating language abilities in Spanish pre-schoolers. A pilot study was carried out. The first analysis aimed at evaluating the power of the Sentence Repetition Task in discriminating the developmental changes in children’s capacity to repeat sentences of different length and morphosyntactic complexity. The second one is aimed to select the sentences that best discriminates between ages/developmental levels.

Methods & Procedures: The test included 33 sentences of different length and complexity. The Sentence Repetition Task was administrated to 20 middle-class children (balanced for gender) between 2 and 4 years. Test results were submitted to univariate analysis of variance, using five age levels as independent variables and length and morphosyntactic complexity as IV. After analysis the list of sentence was reduced to 25 items.
Outcomes & Results: This study showed that 2-year-old children’s repeated sentences were highly telegraphic. Between the age of 2;0 and 2;6 the mean length of utterance in the Sentence Repetition Task grew from approximately two to three words, and the number of omissions of articles, prepositions and modifiers significantly decreased. After 3;06 years old, omissions of free function words practically disappeared. A comparison of the development of function and bound morphology is presented.

Conclusions: Results demonstrate that the repetition test is reliable, discriminates between the different age groups examined, highlights the relevant developmental stages described in the literature, and provides a reliable measure of the mean length of utterance. A new research is proposed in which a much bigger simple will be use and the performance of the children on the repetition test will be compared with children’s spontaneous language data. Moreover, the same children will receive a Verbal Memory Span test, a Word and Non-Word Repetition Task and a test of cognitive skills.

Developmental differences in grammar learning from multiple cues: Is there a role for memory consolidation?

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The knowledge of grammatical properties of words lies at the core of our ability to use language. There is an increasing amount of evidence that these properties are learned from phonological, distributional and semantic regularities of words in different grammatical categories (Aslin & Newport, 2012). In the current study we focus on the contribution of memory consolidation processes, which have been shown to play a role in language learning more broadly, and specifically in the context of regularity extraction (Gomez et al. 2011).

Twenty-three typically-developing children (mean age=10:09) and 20 adults (mean age=21:02) were trained on an artificial language, using a custom-made iPad app. The artificial language was designed to mimic properties of grammatical gender: Novel word-stems (e.g. mof-, mig-) were paired with different ‘determiners’ and ‘suffixes’ (TIB mofEEM, KED migOOL) to create two ‘grammatical’ categories. The words in each category were also associated with a semantic cue (e.g. all tib-X-eem words referred to animals, and all ked-Y-oool to artifacts). Participants were trained on the artificial language in a word-picture matching task. Following training, participants were tested immediately, after 24hrs and after 1 week. The tests included a 2AFC word-picture matching task assessing word learning, and two tests assessing generalization of grammatical regularities to novel items, focusing on regularities involving all cues or only a subset.

Both adults and children showed good levels of word learning, with adults achieving higher performance than children. However, over time, and unlike in children, there was significant forgetting. Immediately after learning and following a 24 hr delay, adults showed good generalization of the ‘grammatical’ regularities on the tests involving all cues. Children showed no evidence of generalization and there was no change over time. The findings will be discussed in the context of developmental differences in memory systems thought to support grammar learning.


**Socio-economic deprivation at age 3 affects language and Theory of Mind development**

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Children from disadvantaged socio-economic backgrounds present on average lower vocabulary and problem solving abilities at the age of 3 (GUS, Bradshaw, 2011). These findings were revisited and extended to investigate metacognitive and metalinguistic abilities, as language and Theory of Mind present a strong relationship and family background has previously been shown to contribute to False Belief understanding (Cutting&Dunn, 1999).

In a study with 77 children (mean age 43 months), we investigated whether children from disadvantaged socio-economic backgrounds also show lower metacognitive and metalinguistic skills. We present samples from quintile 1-4 of the SIMD (Scottish Index of Multiple Deprivation). Children were tested on general language abilities (Celf), expressive vocabulary and problem solving (BAS II), executive functioning, Theory of Mind and a series of metalinguistic tasks, assessing word learning abilities and flexibility in using familiar words.

Children’s ranking on the social deprivation scale correlated to general language abilities and Theory of Mind development, even when controlling for age. Children from the most deprived background (quintile 1) had significantly lower expressive vocabulary and problem solving scores than children in the least deprived group of this sample (quintile 4). The ability to use familiar words interchangeably (dog - animal) also presented significant differences. No differences were found for executive functioning, mutual exclusivity and word learning tasks between the groups.

A subsample of children was matched on verbal ability and chronological age, to further examine metalinguistic abilities. The two groups (n1 = 20; n2 = 20) differed significantly only on ability to predict False Belief, but not on any other cognitive or linguistic task.

We suggest a specific delay in Theory of Mind development in children from socio-economic deprived areas, which cannot be explained by maturity or verbal IQ. The ongoing effects of these delays on word learning are currently under investigation in a longitudinal study.

**The lower the slower: Parental SES and input affect speed of development of vocabulary and morphology**

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Parental input is a crucial determinant for successful language acquisition, in monolingual as well as bilingual children. For bilingual children, a solid knowledge of their L1 is an important basis for successful L2 acquisition. However, bilingual families with migration backgrounds and families with low socioeconomic status (SES) often face social problems which impact negatively on parents’ input and consequently on children’s language development trajectories. Several studies found important SES differences in children’s vocabularies, less research has focused on morphological development.

The present study investigates the relation between lexical and morphological development.

We investigated 64 spontaneous speech recordings of parent-child interaction of 32 children from different SES acquiring two typologically different family languages: (1) 16 monolingual German-speaking children (8 high SES, 8 low SES) and (2) 16 bilingual children who speak Turkish at home and German in kindergarten (8 high SES, 8 low SES).
We analyzed two 30-minute recordings per family collected at the children's homes at intervals of one year (at ages 3;4 and 4;4) by focusing on speech production of the main caretaker and the target child. Statistical analyses show that measures of vocabulary (e.g., lemmas, types, tokens, VOCD) and morphology (e.g., frequencies of morphologically complex forms) show important differences and increasing gaps between high and low SES input and output. Moreover, differences in speed of development are more pronounced in the more homogeneous group of monolingual children, whereas the intervening variable of L2 exposure leads to more variation in the bilingual children. Results of spontaneous production data correlate with results of vocabulary and grammar tests and with different variables extracted from parents' information given in interviews (e.g., amount of input in each language, amount of language-related activities). After discussing cross-linguistic aspects, we conclude that SES effects differ more for German and Turkish morphology and less for the lexicon.

Wow! - A corpus-based study on the use of emotive interjections in child speech

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The present paper discusses how infants (aged 1;8-3;0) use the interjections Ow!, Ouch!, Ugh!, Yuck!, Whoops!, Whoopsadaisy! and Wow!. Corpus-based analyses of the Manchester corpus (CHILDES, child speech, 0.5 million words) have revealed a number of interesting findings.

First, the children commonly used these interjections, with the frequencies ranging between 21 interjunctational occurrences (IO) pmw (Yuck!) and 575.5 IO pmw (Whoops!). Second, concerning the contexts in which the children used emotive interjections, the abstract use of interjections of pain and disgust (this includes references to unpleasant jobs - Yuck!, running into ex-lovers - Ouch!, etc.) was entirely absent from the CHILDES data. Assumedly, children refrain from using Ow! or Yuck! in abstract contexts because they cannot understand that yet. Furthermore, empathetic uses of Ow! and Ouch! were very common in child speech (for experienced and imaginary pain). Next, as regards the use of the spill cries Whoops! and Whoopsadaisy!, they referred to the child most of the time in that the these interjections were mainly found in the contexts 'failure of intended situation'; (i.e. the child's) and 'situation caused by own action' (i.e. it had been caused by the child). What is more, the children did not use Wow! to express praise or admiration but rather to refer to pleasant events in general. Last, the findings suggest that Ugh!, Ow! and Whoops! are acquired first (by the age of 1;8), followed by Ouch!, Yuck! and Wow! (around the age of 2;0), and then Whoopsadaisy! (approx. 2;2).

To sum up, in child speech the use of emotive interjections was relatively frequent, and it also turned out to be predominantly egocentric in that the use of emotive interjections mainly referred to the child's pain, mishap, or actions.

How do reading and listening to stories facilitate vocabulary acquisition?

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Vocabulary learning is a multidimensional process: the acquisition of the phonological form, the orthographic form, and the meaning of a new word are all separable aspects of the process of word learning. When new words are simultaneously presented in both oral and written modalities children tend to learn orthographic, phonological and semantic features of the words better than when the words are presented in only one modality (Ricketts, Bishop, & Nation, 2009; Rosenthal & Ehri, 2011). Several studies have shown that both reading and listening to stories are efficacious methods to foster vocabulary development (Nagy, Anderson, & Herman, 1987; Wilkinson & Houston-Price 2013). This study explores how children learn the phonological, orthographic and semantic information about novel words when they are
encountered in story context. Two classes of Year 4 English-speaking children (Mean age = 8.99 years) were presented with two stories by their teachers, each containing 8 novel words repeated three times; the first mention was accompanied by a definition. One story was presented orally (Listening Condition) and one both orally and visually (Combined Condition). This comparison allowed us to directly test hypotheses about the additive benefit of orthography for phonological learning and semantic learning. Following story presentation, post-tests indicated that children learnt the orthographic form of the words only when they were exposed to it (i.e. in the Combined Condition), while showing reliable semantic and phonological learning in both conditions. Interestingly, while children showed similar performance in the two conditions when the semantic task required them to recognise the category of the words, their performance was better in the Combined Condition than in the Listening Condition when the task required the recognition of detailed semantic features of the target vocabulary. These results therefore suggest that children benefited from the presence of orthography for detailed semantic learning.

Boards: 15 – 18  
Keyword: Phonology

Repetitions in child-directed speech - a longitudinal study of parents' vocal interaction with children aged 3-12 months

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The present study investigates the use of repetitions in child directed speech. Although a topic of interest and study earlier on (Kaye, 1980; Pellegrino & Scopesi, 1990), lately it appears to have been neglected in the area of language acquisition.

Repetitions were defined as a vocal/verbal utterance identical to, or partially identical to, a previously uttered vocal/verbal entity, hence X. Two varieties of repetitions were investigated: i) parents repeating their own utterances, and ii) parents repeating their child’s utterance. As partially identical we counted expansions of a child’s utterance, e.g. “mommy” --> “yes, honey, it is mommy’s”, as well as elaborations of a parent’s own expressions, e.g. “look lamp!” --> “you see the lamp?”. The data used consists of video-recordings with 10 Swedish children interacting with one parent as they were 3, 6, 9, and 12 months old.

The aim of the study was twofold: i) to investigate the relation between the two kinds of repetitions described above within and across parent-child dyads and ages; and, ii) to relate the developmental trajectories of repetitive parental behavior to the child’s scores on the Swedish version of the McArthur-Bates Communicative Development Inventory (CDI) (Fenson et al., 2007; Berglund & Eriksson, 2000) at the age of 18 months.

The results showed that the percentage of repetitions varied during the child’s first year. Exact self-repetitions decreased by more than 30 percent from the ages 9 to 12 months. The total percentage of repetitions of the children’s speech increased more than four times from 3 to 12 months of age. A connection was found between the repetitions during the child’s first year and the child’s language development, indicating that a low percentage of exact self-repetitions at 6 to 9 months of age correlated with a high vocabulary at 18 months of age.


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European Portuguese-learning infants’ early perception of lexical stress

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Stress pattern discrimination of segmentally varied stimuli emerges between 6-9 months in English and Spanish, but not French, where stress is not used contrastively. However, early language specific sensitivity to stress patterns, shown by a preference or asymmetry in perception, seems to emerge between 4-6 for German and French learning infants in the absence of segmental variability, the former preferring the trochaic and the latter the iambic pattern. Interestingly, 6-month-old French-stressed based bilingual infants (Dutch, English) prefer the trochaic pattern, unlike French-syllable based bilinguals (Spanish, Italian, Portuguese) who show no preference. According to the rhythmic based hypothesis, a trochaic bias is expected in stress-timed languages, whereas syllable-timed languages are expected to show no such bias or no preference at all. In an eye-tracking study using the Anticipatory Eye Movement Paradigm, European Portuguese (EP) learning infants stress discrimination abilities at 5-6 months are investigated. EP has variable stress like English and Spanish (and unlike French), with mixed rhythmic Germanic and Romance features, being perceived as different from a typical stress-timed language and argued to display syllable-timed rhythm. Infants were trained to associate each stress pattern to a particular image and side of a screen by pairing the image/side with segmentally varied bisyllabic pseudowords with either trochaic or iambic patterns. Infants were then tested by presenting two blank frames on the respective sides, while listening to novel tokens with either stress pattern. Preliminary data from 13 infants show a tendency to look longer at the frame where the image associated with the iambic stress pattern would be located, irrespective of side/image type (average looking iambic - 491.81 ms, trochaic - 297.27 ms, z=1.85, p=.064). If these results are confirmed, this study will be the first to demonstrate (with segmentally varied stimuli) an early preference for the iambic pattern in a language with variable stress and syllable-timed rhythm.

The development of stress production in babbles and words: A longitudinal comparison between cochlear implanted and normally hearing infants.

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Children produce lexical stress from early on [1][2]. However, the development of the fine phonetics of stress seems to be protracted [4]. In acoustic terms, word stress is realised by an increase of pitch, intensity and duration. For children with cochlear implants (CI), the acquisition of word stress may pose difficulties since the implant does not provide enough spectral and temporal detail for the adequate perception of pitch and intensity changes [3]. Hence, their production of lexical stress may not be age appropriate.

This study investigates (I) when infants begin to produce syllables with different degrees of stress and (II) if impaired pitch and intensity perception has an impact on stress production. Therefore, stress production in disyllabic babbles and first words produced by normally hearing (NH) infants (n=9) and infants with CI (n=9) was acoustically analysed. Infants were monthly followed from the onset of babbling until they reached a cumulative vocabulary of 200 words. Using PRAAT, intensity, duration and pitch were measured in the vocalic portion of each syllable. Afterwards, the ratio between the two syllables was computed for each acoustical measurement. These ratios were entered in Multi Level Models with utterance types (babbles versus words) and groups (NH infants versus infants with CI) as independent variables.

Interestingly, infants with CI show significantly smaller pitch and intensity ratios than their NH peers in both babbles and words. This effect is absent for duration ratios. Furthermore, The NH group has significantly larger pitch ratios for words than for babbles. This effect is absent for the CI group, indicating that they do not control pitch production in an appropriate...
way. Hence, it is shown that (I) NH infants differentiate more in pitch production when they start to use words and (II) that deprived pitch and intensity perception results in less differentiated production.


Re-access of birth language phonology by young adopted children

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Is a disused language completely lost? Some studies have reported total absence of birth language memory in adult adoptees not re-exposed to their birth language (Pallier et al., 2003; Ventureyra, Pallier, & Yoo, 2004). In other studies, however, adult and teenage adoptees successfully retrieved knowledge of their birth language, particularly its phonology, after re-exposure (Choi, 2014; Singh et al., 2011; Pierce et al., 2014). The present study addressed the question whether such knowledge of birth language phonology is accessible even at a much younger age, and whether re-exposure is necessary for access. Two groups of children from Cantonese and Mandarin areas in China, adopted into Dutch-speaking families, were tested and trained on both perception and production of affricate and tone contrasts in their birth language. Consistently, the adoptees, who were aged from four to ten years, demonstrated a robust advantage over matched Dutch controls (without prior exposure to Chinese languages) on both perception and production of the test contrasts, particularly after training. Limited effects of age of adoption, and of re-exposure to the birth language (through overhearing speech of adopted siblings, or through visits to China) were also observed. Thus previous evidence is confirmed that early-acquired phonological knowledge is preserved in memory for a considerable time, and supports better relearning of the sounds in the language. Strikingly, and in contrast to a previous study of adult Korean adoptees (Choi, 2014), the young Chinese adoptees in the present study showed better production of their birth language contrasts even before re-exposure, emphasizing the importance of time elapsed post-adoption in the case of speech production. Together the results demonstrate that even short exposure to a language in childhood induces phonological memories that are well preserved, and can be retrieved to a certain extent without, and certainly with, exposure to input in the language.

Boards: 19 – 29       Keyword: Language impairment

Is socioeconomic status associated with all aspects of linguistic skill?

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Child language skills are known to be significantly associated with socioeconomic status (SES; Hoff 2013; Thomas, 2013) and prevalence rates for language impairment (LI) are much higher in areas of economic deprivation (Tomblin et al. 1997). It has been argued that SES exerts an influence on language development through impoverished parental language input and reduced opportunities for language learning. However, it is also possible that these
‘environmental’ influences reflect underlying genetic effects (cf. Rutter, 2008), leading some to argue that it may be possible and desirable to disentangle disorder from disadvantage using more sensitive assessment measures (Dollaghan et al. 1997; Roy & Chiat, 2013). Vocabulary is known to be affected by SES (Rowe, & Goldin-Meadow, 2009), but more ‘processing-dependent’ measures such as non-word and sentence repetition are thought to reflect core language skills that are less subject to environmental influences.

Children were selected from a longitudinal population study of language skills at school entry (The Surrey Communication and Language in Education Study). We assessed 529 monolingual children aged between 61 and 81 months. The Index of Deprivation Affecting Children (IDACI) rank score was used to estimate SES.

Children completed ‘knowledge-dependent’ measures of language (vocabulary and narrative), as well as more ‘processing-dependent’ measures (non-word and sentence repetition tasks, measures of morphosyntax). We predicted that SES would be a stronger predictor of performance on the ‘knowledge-dependent’ measures, but would exert less influence on ‘processing-dependent’ measures.

We found that SES was associated with all language measures, explaining between 1.4% and 8.9% of variance across groups. However, the relationship between SES and language frequently differed between TD and LI groups. Contrary to expectations, these differences were more pronounced for some ‘processing-dependent’ measures.

Our findings question whether there is a sharp distinction between knowledge-based and processing-based measures and will have important implications for assessment and diagnosis of language impairment in economically diverse communities.

How eye-movements may reveal verbal short term memory: A study in language delayed and typically developing young children

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The study explores the hypothesis that a deficit in verbal short-term memory (VSTM) originates language development disorders. VSTM impairment is usually observed using verbal repetition tasks. However, speech disorders may interfere in such a task. Our study aims at examining VSTM skills in a task that does not necessitate verbal production. For this purpose, we used a free-viewing eye-tracking task, in order to analyse eye-movements on pictures after listening a word. Eye-movements of 5 and 6 year-old children with severe speech disorders and SLI diagnosed in the pediatric neurology department were compared to those of typically developing children met at school. We used the Visual Word Paradigm with pictures of familiar objects in the display.

In a first experimental task, all children produce significantly more looks on the target picture, corresponding to the word heard (e.g. target: BUS), regardless of the type of distractor: phonological competitor (BUCHE), neutral picture (CANNE). In a second task, a 2100 ms delay was introduced between the verbal information and the display in order to explore the capacity to storage of the phonological loop. The word was followed either by a silent period (silence condition), or a sequence of nonwords following the target to prevent articulatory rehearsal (articulatory supression condition). Participants with SLI were more likely to look less the target picture in the display, especially after a short delay. Critically, the SLI group performed similarly to the controls and targets attracted significantly the participants’ visual attention in silent condition. Furthermore, findings suggest an articulatory suppression effect in both groups. Finally, eye-movements preferentially drawn to target pictures in first task imply pictoral representation seem to allow activation of word representation in VSTM. Second results suggest that children with SLI are able to maintain the active representation during a short delay of silence, as their peers do.
Metacognition in speech and language therapy for children with pragmatic language impairment

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Metacognition is concerned with the ability to simultaneously consider the demands of a task, the strategies being used and whether or not progress is being made. In typical populations, metacognition has been found to support self-monitoring and generalisation (Dignath & Büttner 2008). Children with developmental language disorders (DLDs) are known to benefit from speech and language therapy (SLT) that includes metacognition, but the nature of metacognition in SLT or how it operates in therapy delivery is relatively unexamined (Law et al. 2008).

A qualitative analysis of video data of therapy from a manualised SLT intervention as delivered within a randomised controlled trial, the Social Communication Intervention Project (SCIP) (Adams et al. 2012) was completed. Eight hours of video data were purposively sampled to be representative of the SCIP cohort and intervention content. Existing research on metacognition as a construct in learning (e.g. Flavell 1979; Schneider, 2010) provided a theoretical background for the analysis. Through cycles of iterative analysis, a preliminary list of key concepts in metacognition was developed into a Metacognitive Coding Framework (MCF).

Thematic analysis revealed the presence of metacognition in the content and delivery of SCIP intervention. Metacognition was a feature of how children’s ability to monitor language, pragmatic and social interaction skills in themselves and other people was developed. Error detection was employed to teach problem-solving, that is, metacognitive skills of monitoring and control were an explicit feature of SCIP intervention. SCIP therapists were observed to change the task design and delivery to include a particular focus on self-monitoring as a distinct part of the therapy process.

The finalised MCF and a model of how metacognition was found to be employed in the delivery of SCIP therapy to focus on self-monitoring are presented.


The impact of different regional accents on the ability of children with language impairment to follow instructions

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Current research provides evidence that both typically developing children and children with speech difficulties may experience a comprehension breakdown when listening to a
speaker with an accent that is different from their own. This is also evident in research with adults with aphasia. The aim of this study was to investigate the impact of three regional Irish accents on the performance of children with language impairment (LI) on a sentence comprehension task.

The participants, who were all from Cork (Ireland), included 43 children with LI aged between 5;0 and 8;11 (mean age 6;4), and a group of 45 typically-developing children aged between 3;9 and 7;1 (mean aged 4;10). Participants were matched on sentence comprehension ability. The experimental task involved the children completing an adapted version of the Token Test for Children. Three female speech and language therapists pre-recorded the test instructions in their own Irish regional accent – (i) Cork accent (the accent of the local area which was most familiar to participants), (ii) a neutral Irish accent and (iii) a northern Irish accent (unlikely to be heard in the local area). The task consisted of a total of 69 instructions divided among the three accents. Each accent presentation consisted of 23 instructions increasing in length and complexity across four sections.

Results showed that regional variation in accent can negatively impact children’s ability to understand spoken instructions. Results also showed that there was no significant difference between the performances of both groups. Both children with LI and typically-developing children had overall significantly lower scores on the task when instructions were presented by the northern Irish accented speaker than when the instructions were given in the local Cork or neutral Irish accent. Further research is required to determine whether the accent effect shown is large enough to affect a clinical decision.

We’re all in the same boat! Positive Mental Health in Danish adolescents with Language Impairment attending boarding school: positive life satisfaction, self-esteem and self-compassion

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Research on Mental Health of adolescents with language impairment (LI) show that individuals with LI are at risk of psychosocial disorders, such as anxiety, depression, low self-esteem, general emotional and behavioural symptoms. Individuals with LI seem to be twice as likely to develop emotional and behavioural difficulties in middle-childhood compared to typically developing peers (Yew & O’Kearney, 2013).

Currently we have little evidence regarding Mental Health risk factors for individuals with LI and studies only report on individuals from English-speaking countries.

The present study investigated Mental Health in fourteen Danish adolescents with LI age 14 to 16 years and their typically developing (TD) peers (N = 86). All children with LI fulfilled the criteria of Leonard (2000). All measures of Mental Health consisted of self-reports of Satisfaction with Life, Self Perception Profile, Self Compassion, Moods and Feelings Questionnaire, Spence Children’s Anxiety Scale.

The results show that Danish adolescents with LI report fewer symptoms of anxiety compared with the TD children, but more symptoms of depression. Regarding self-esteem and self-compassion adolescents with LI report higher levels of self-compassion compared to their peers. General Satisfaction with Life showed higher degrees of satisfaction within the group of adolescents with LI compared to the TD group.

Overall the adolescents with LI reported positively on the measured aspects of Mental Health and in fact showed a better ability to accept their current life situation than was the case for the TD group. We discuss the results with regard to whether they may be influenced by the fact that the LI group was recruited from a boarding school for children with language challenges, where close peer relationships are in focus and hence their overall positive views of themselves may be influenced by the specific school setting that created a general feeling of “all being in the same boat”.

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Acquisition of compounds by Russian children with and without Specific Language Impairment

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This report discusses nominal compound acquisition in morphologically rich but compound poor Russian. The results are based on comparative study of longitudinal corpora (~173 hours of recorded speech, 100 997 noun tokens), transcribed using CHILDES (MacWhinney 2001) of 5 TD children (1;5 – 4;1) and the experimental data of 11 preschoolers with SLI. The compounds of the TD children were analyzed according to first emergence, productive usage, frequency, simplicity and transparency and impact of morphological wealth of input on output (Scalise 1992, Dressler, Lettnner, Korecky-Kröll 2010, Argus, Kazakovskaya 2013). The compounds of the SLI children were considered with respect to their word building/creation and/or reproduction, and further interpretation/explanation. TD children start to acquire compounds early as lexicalised items with transparent morphosemantically and productive (for a target-system) models: there are right-hand headed subordinate endocentric compounds (‘X+VERB’, ‘X+NOUN’) with vowel interfixes (o, e), accompanied by simultaneous suffixation including zero (sam-o+let+∅ ‘airplane’ > ‘oneself’ + ‘to fly’, where the head let > letet ‘to fly’; zoo+park ‘zoo’ > ‘zoological’ + ‘garden’). Their frequency depends on the topic of ‘caregiver — child’ conversation. The experimental data of SLI children illustrates late acquisition of compounds. The most successful compounds in both aspects mentioned above belong to ‘X+VERB’ pattern (myšelovka ‘mousetrap’ ‘mouse’ + ‘to catch’). Compounds caused the most difficulties (including occasional cases) and are characterized as being opaque morphosemantically and less frequent, having a large syllabic structure (e.g. CV-CV-CVC, CV-CV-CV-CV). In general, linguistic and extralinguistic factors influence compound acquisition by normally and atypically developing children, and their criteria of prototypicality, productivity, frequency and morphosemantic transparency of compounds coincide, whereas their phonetic characteristics differ. Significantly, the process of compound acquisition by children with SLI includes such factor as comprehension of the inner form of the word. The research was carried out with the financial support of RNF (grant 14-18-03668).

Recall tasks in monolingual and bilingual children with SLI: What do they tell us about the nature of SLI

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Recall tasks underpin verbal working memory which is an area of weakness in children with Specific Language Impairment (SLI).[1,2] Non-word repetition (NWR) and sentence repetition (SRep) have proven to be reliable markers for screening monolingual children with SLI.[3,4] This study investigated (a) separate effects of bilingualism and SLI on NWR and SRep; and (b) the extent to which SLI is associated with a memory deficit.

A total of 236 preschool children aged 5;2-7;1 participated in the study: 150 Russian-Hebrew bilingual speaking children (27 SLI), 52 Hebrew monolinguals (14 SLI) and 34 Russian monolinguals (14 SLI). The two bilingual groups had similar length of exposure to L2/Hebrew. Children’s language proficiency (LP) was determined in Russian[5] and in Hebrew[6]. Children with SLI had low LP (bilingual children in both languages) and reported history of SLI/parental concerns.

The following tests were administered in Russian and in Hebrew (bilingual children were tested in both languages): expressive vocabulary (LP subtests), Forward Digit Span (FWD-S), NWR and SRep.

NWR and SRep were analyzed using a 2 (Language Ability: SLI, TLD) x 2 (Bilingual Status: monolingual, bilingual) ANCOVA in each language separately controlling for verbal working
memory capacity (FWD-S) and vocabulary size. SLI effect was robust in both languages even when the VWM and vocabulary size were controlled. Bilingualism effect was associated with poorer performance on SRep, but not NWR. Yet, when the vocabulary size is controlled, there was no effect of bilingualism, and a bilingual advantage was observed for NWR in L1/Russian.

Our results suggest that while SLI is associated with verbal memory limitation, this deficit is not enough to account for poor performance on NWR and SRep. As for bilingualism, our study brings evidence that verbal memory capacity is not affected by bilingualism, while lower performance on recall tasks might be linked to vocabulary scores.


Development of pointing gestures in children with and without primary language delay

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A meta-analysis conducted by Colonnesi et al. (2010) indicates a strong relationship between pointing gestures and language acquisition in young children. The more pointing gestures children use early in their development the higher their language skills will be at a later age. However, to date the differences in development of pointing gestures in typically developing children (TD) compared to children with primary language delay (PLD) remain unclear. Also, qualitative specifics of the gesture such as the hand shape of pointing (index-finger vs. hand pointing) have not been sufficiently investigated. Results of our longitudinal study over a period of 18 months starting at 12 months of age reveal differential development of pointing gestures in TD vs. PLD. 10 of the total 45 children participating in the study were diagnosed as PLD at the age of 2 years. Of these 10 children only 2 produced index-finger points at 12 months in the interaction with their primary caregiver compared to 91% of the TD (X2(1) = 21.49, p < .001, Cramer-V = .69, p < .001). In both groups the number of index-finger points increased between 12 and 21 months. But only in TD did the number of hand points decrease during this period.

In summary, TD produce more pointing gestures in total, especially more index-finger points at 12 months compared to PLD. However, at 21 months PLD produce more pointing gestures in total, especially hand points, compared to TD. We will discuss whether early production of index-finger points is a valid criterion to identify children with a typically language development.

The influence of lexical stress on children's accuracy in non-word repetition

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Background: Non-word repetition is frequently used as a tool for assessing children's language competence and has been specified as a diagnostic clinical marker for identifying children with specific language impairment (SLI). Our study set out to investigate the influence of the lexical stress pattern of a given non-word on the accuracy of children's repetitions.

Methods: 13 children with SLI and 24 age-matched typically developing (TD) children repeated an experimental corpus of 72 non-words which varied systematically in number of syllables per word and in the location of the stressed syllable. Children's responses were transcribed and measured for accuracy at word and syllable level.

Results: Children with SLI performed more poorly than controls at all word lengths. For three-syllable words, the location of the stressed syllable affected word accuracy for children with SLI but not TD controls, whereas for four-syllable words, stress location had a significant effect for both groups. There was no effect of stress location for either group for five-syllable words. At syllable-level, the relative position of each syllable within the word had a significant effect on syllable-level accuracy for four- and five-syllable words, but not three. The stress status (stressed or unstressed) of each syllable significantly affected syllable accuracy for three- and four-syllable words, but not five.

Conclusions: Accuracy in non-word repetition for children with SLI and TD controls is affected by a complex interplay of word-length, stressed syllable position and stress status for word and syllable level measures. These factors affect children with SLI and TD controls differently across word lengths.

Word and non-word repetition in Spanish typically developing and late talking children aged 2;6-3;6: A longitudinal study.

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Word and non-word repetition has traditionally been related to language skills (Gathercole & Baddeley, 1989; Roy & Chiat, 2004; 2007). Indeed, it has been stated that a deficit in non-word repetition could provide a “marker of the phenotype of developmental language impairment” (Bishop et al., 1996). Most studies have been carried out cross-sectional and in English Language, including children older than 4 year-old.

The aim of this study is to carry out a repetition task (Mariscal & Gallego, 2013) suited for typically developing and late talking 2 to 4 years-old Spanish children. Specifically, we want to examine the changes in repetition abilities during these early stages and to test the predictive value of nonword repetition on further language skills.

Twenty-three typically developing (TD) and 15 late talking children (LT) participated in this study. Parents filled in the Spanish version of the MacArthur-Bates Communicative Development Inventories (MCDI; Form II) (López-Ornat et al., 2005). Children were considered LT when their scores in vocabulary were percentile 15th or below. The design included 3 phases for data taking 6 months apart from each other: Time 1 (T1) (M = 27), Time 2 (T2) (M = 34) and Time 3 (T3) (M = 42). Participants completed the Spanish version of the Peabody Test (Dunn, Dunn & Arribas, 2010) and the word and non-word repetition task. Taking the sample together, results showed an interaction between lexical status (words vs nonwords), syllable length (1-2-3 syllables items), time (T1, T2, T3) and vocabulary level (TD vs LT) (F(1,18)=3,373; p=.014; η²=.166).

Analyses for TD children showed two double interactions: word status and time (F(2,14)=3,821; p=.034; η²=.214), and syllable length and time (F(4,14)=6,108; p=.000; η²=.304). Main effects of lexical status (F(1,11)=22,166; p=.001; η²=.660), syllable length
The purpose of reading is to gain understanding as to what the task is for, and that some children lack understanding of the purpose of reading is to gain understanding of the content of written text.

Visual memory and phonological difficulties in a child with mixed characteristics of dyslexia in a transparent orthography.

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The paper reports a case study of an eleven-year-old Greek-speaking dysgraphic/dyslexic child, EF, who showed a difficulty in spelling irregular words but not nonwords. EF was also slow at reading text in comparison to same age control children. Further assessments involved tasks of phonological ability, rapid automatized naming, visual memory, and multi-character processing. Results indicated that EF had impaired phonological ability, as assessed by a spoonerisms task, and a major difficulty in simultaneous and sequential visual memory in comparison to typically developing children. By contrast, phonological working memory ability, as assessed by forward and backward digit span, was typical for her age. An intervention programme was conducted that focused on lexical spelling processes, using visual mnemonics devised by EF to support memory of the misspelt part of words. Post-test assessments were carried out by an assessor blinded to EF’s pre-intervention results and to the training content. The results indicated improvement in spelling of trained words that was sustained over time. In addition, a significant improvement in visual memory and spoonerisms scores was observed at delayed follow-up assessment. The findings support the view that the underlying causes of dysgraphia are diverse and that they could relate to difficulties in visual memory as well as to processes tapped by demanding phonological ability tasks such as spoonerisms, at least for children learning the transparent Greek orthography.

Boards: 30 – 32  
Keyword: Literacy

What is reading for?

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Prior research has indicated that children apply varying standards for coherence when reading and engaging with text (e.g. Clarke, 2009). In this exploratory study, Key Stage 1 children’s attitudes to and knowledge of the task of reading were explored. A questionnaire was developed to assess this, drawing on previous research looking at attitudes to reading (Lockwood, 2012; Logan & Johnston, 2009; Levy, 2009) and incorporating additional content aimed at measuring understanding of the purpose of reading. This was administered all Key Stage 1 children attending two York primary schools. A secondary task was required participants to instruct a soft toy character about what reading entailed and to demonstrate how to work with a book. Preliminary results suggest that children come to reading with different levels of understanding as to what the task is for, and that some children lack understanding that the purpose of reading is to gain understanding of the content of written text.
Spelling representations and spelling strategies

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General theories of cognitive development can be used to elucidate mechanisms underlying learning in different domains. In relation to children's spelling development the Representational-Redescription model (Karmiloff-Smith, 1992) has been applied to differentiate between early implicit representations and increasingly explicit knowledge as children incorporate a growing understanding of phonology and morphology (Critten, Pine & Messer, 2013; Critten, Pine & Steffler, 2007). Children’s strategy usage when spelling has also been explored using the framework of the Overlapping Waves model (Siegler, 1996) demonstrating that while direct retrieval is often the most efficient, successful strategy, children also have to rely on 'back-up' strategies applying phonological, analogical and morphological knowledge if their orthographic representations are insufficient (Farrington-Flint et al, 2008; Rittle-Johnson & Siegler, 1999). The aim of this study is to bring these two approaches together in the spelling domain for the first time. One hundred 5-7 year old children were given standardised tests of verbal and spelling ability and two experimental spelling tasks; 1) A recognition task where children were presented with 30 sets of three alternative spellings of a word only one of which is correct, e.g. filled, filld, fild and asked to identify the targets and verbally justify their choices (Critten et al. 2007) and 2) A production task where children were asked to spell the same 30 target words, and verbally explain their procedure (Farrington-Flint et al. 2008). Verbal explanations and performance were used to assess implicit and explicit levels of understanding from the recognition task and type and variety of strategy usage from the production task. Results revealed an association between early explicit understanding and the use of phonological strategies. However for some children, understanding of spelling seems more advanced than the strategies actually used when spelling. Implications for a theory of spelling combining these two theoretical approaches are discussed.

Processing and acquisition of positive and negative-causal coherence relations: A test of the cumulative cognitive complexity approach in German

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Establishing local coherence, i.e. linking the content of adjacent statements of a text, is central to text comprehension (van Dijk & Kintsch, 1983). Positive-causal coherence relations (such as 'Tom ate too many cherries. Therefore, he now has a stomachache') link a cause and its consequence whereas negative-causal coherence relations (such as 'Anna is ill. Nevertheless, she goes to school') add a contrastive meaning (negation) to the causal link (Sanders, Spooren, & Nordmann, 1992). According to the cumulative cognitive complexity approach (Evers-Vermeul, & Sanders, 2009; Spooren & Sanders, 2008), negative-causal coherence relations are cognitively more complex than positive-causal coherence relations. Therefore, they require a greater cognitive effort during text comprehension and are acquired later in language development. The present cross-sectional study tested this prediction in German primary school children and adults in reading as well as listening comprehension. Children and adults were presented with spoken (all participants) and written sentence pairs (Grades 3 and 4 and adults) that contained positive and negative-causal coherence relations signaled by either an appropriate connective resulting in a coherent sentence pair (e.g. 'Lena stayed in the sun for too long. Therefore, she got a sunburn') or an inappropriate connective resulting in an incoherent sentence pair (e.g. '*Roland overslept. Therefore, he arrived at school on time'). The task was to judge the coherence of the sentence pairs. This task requires the comprehension of the connectives and of the coherence relations signaled by them. Response latencies and accuracy were recorded. The
findings support the predictions of the cumulative cognitive complexity approach. Negative-causal coherence relations were cognitively more demanding (indicated by longer response latencies and lower accuracies) for children and adults and are acquired later than positive-causal coherence relations. At Grade 4 children's processing of negative-causal coherence relations was still worse than adult-like processing.

**Boards: 34 – 39  Keyword: Atypical populations**

**Noun plurals in German-speaking preschoolers with cochlear implants and their normally hearing peers: a comparison of two production tasks**

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Studies investigating language skills of children after cochlear implantation usually present general measures of expressive/receptive vocabulary and grammar and rarely tackle the acquisition of specific language phenomena such as noun or verb morphology. This study examined the production of noun plurals in early implanted German-speaking preschoolers with CI, by using two different production tasks. More specifically, we charted out the impact of two characteristics of plural formation: the degree of predictability of the suffix and the degree of stem transparency.

The study involved 7 children with CI (median age 4;5, range 3;10-5;3) and 20 age-matched NH controls. The children with CI were diagnosed a profound hearing impairment (>90dBHL) in the first year of life, received their implant before 24 months, and were raised in hearing, monolingual families. Children were administered two tasks: Task 1 was a plural elicitation task in which participants were presented a set of singular nouns for which they had to provide the plural forms; Task 2 was a semi-structured interview in which participants were asked to comment on pictures of familiar routines (e.g., a visit to the zoo) which constitute good triggers to elicit naturalistic speech about noun plurals.

Statistical mixed-effects-modeling showed no significant differences in correct plurals between CI and NH. However, there were significant differences in the use of singulars in plural contexts. Moreover, plurals patterned differently in the two tasks: In Task 1, children attained the highest score for plurals with a highly predictable suffix without a stem change; in Task 2, exceptional plurals occurred as frequently as more predictable ones, and their error rates were very low. These results suggest that after 3 years of implant use, early implanted children show age-appropriate patterns of noun plural formation, but still have to catch up w.r.t. associating a particular singular with its plural form.

**Phonological development and word learning in children with cochlear implants**

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In recent years many studies have shown that children who receive a cochlear implant (CI) before two years of age subsequently display better speech comprehension and production than children who are implanted at a later age (Ertmer & Jung, 2012). However, the incidence and the duration of phonological and lexical delay in these children remain unclear (Ertmer & Goffman, 2011; Yoshinaga-Itano, 2003). We report on preliminary research on the relationship between phonological development and word learning in children who receive a CI. Seven hearing-impaired preschool children (HI-group) who received CIs (mean age = 40.2 months) were compared with two groups of typically developing children (TD), one age-matched (TD-AM-group, mean age: 40.1 months), the other hearing-experience matched (TD-EM-group: age M = 33.3 months). Each child was observed with his/her mother during free play and the level of
phonological development was assessed. Furthermore, each child was tested in a fast-mapping and word-learning task. Data analysis indicated no significant differences in accuracy in the fast mapping and word learning tasks, but differences emerged in the phonological characteristics of the errors. The children in the HI-group displayed higher numbers of phonetic substitutions (non-word repetition: 3/7 children in the HI-group vs. 0/7 in the TD-AM group; fast mapping: 2/7 in the HI-group and 0/7 in both TD-AM and TD-EM groups) and the two groups displayed different numbers of comprehension target errors (HI-group: 3.25 and TD-AM: 1.83; p = .07). These differences are related to differences in the phonological processes applied, especially in the case of longer words. The findings make it possible to investigate more deeply the factors associated with phonological delay in some children with CIs.

**The acquisition of verbal morphology in German children with hearing impairment - a comparison between children treated with hearing-aids and children with CI**

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Introduction: To acquire German verbal agreement-morphology, the relevant inflectional affixes (/s/, /t/ and /n/) have to be perceived and produced. The paper explores the relationship between the discrimination and production of these phonemes in 3 tasks: (i) a discrimination task (‘Huhn’ [chicken] vs. ‘Hut’ [hat]), (ii) a production task (pronounce ‘Hut’ [hat] in a picture naming task), and (iii) an elicitation task exploring the use of these phonemes as inflectional morphemes (‘er geht’ [he is walking]).

Purpose: Here we want to explore whether HI children treated with a hearing-aid display a different behavior with respect to the use and correctness of verbal agreement markers than HI children treated with a CI.

Method: For the 3 tests mentioned above, we compared the performance of two groups of 4-year-old monolingual German HI children: a group of 10 children treated with hearing-aids and a group of 10 children treated with CI.

Results: Despite differences in treatment and acoustic perception of speech due to the different treatments chosen (hearing-aid vs. CI), HI children in both groups displayed similarities in their language performance. Notably, the production of the verbal agreement markers -st and -t is significantly more impaired than production of the affix -n in both subject groups.

Conclusions: HI affects the acquisition of verbal morphology in children treated with hearing-aids and in children with CI. We will discuss how the observed difficulties relate to differences and similarities in the perception and production of the critical phonemes (/s/, /t/, /n/) in these two subject groups.

**Novel metaphor comprehension in Autism Spectrum Disorder**

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Children with Autism Spectrum Disorder (ASD) experience noticeable difficulties with figurative language. These have been linked to their impaired theory of mind (Happé 1993) or to the overall linguistic - and especially semantic abilities (Norbury 2005). Yet, immature linguistic skills might affect the comprehension of figurative language regardless of autistic symptomatology (Gernsbacher & Pripas-Kapit 2012).

This study investigates comprehension of novel, rather than conventional metaphors, the latter of which require previously acquired knowledge, in 21 English-speaking children with ASD (Chronological Age (CA):5;5-15;3; non-verbal IQ SS:40-127; M=76.7; BPVS-2 SS:40-121, M=82), matched to younger typical controls (CA: 2;4-7;3) on non-verbal and verbal Mental Age (MA).
We used a task minimising cognitive demands to determine where the difficulties with metaphor comprehension arise - i.e., insufficient vocabulary knowledge, difficulty with taking context into account, or inability to make a pragmatic inference. In an act-out reference assignment task, children were shown pairs of minimally different toys and asked to choose the one matching the metaphorical description (e.g., 'a car with a sick foot'). Children were subsequently also tested on their knowledge of the key vocabulary used in the metaphorical items.

A regression analysis model showed no statistically significant difference between groups, with both performing near ceiling on all 6 experimental items. Performance of the ASD group was not linked to their CA, but was highly correlated with non-verbal and verbal MA. In the control group, CA was somewhat relevant to their success in interpreting novel metaphors, but again non-verbal and verbal MA played a more important role.

Contrary to the literature showing that metaphor comprehension is significantly impaired in ASD, our results indicate that a methodology that controls for vocabulary knowledge and minimizes the cognitive demands of the interpretation process helps children with ASD correctly interpret novel metaphor on par with younger controls.

**Artificial Grammar Learning in children with Williams syndrome and in typically developing children: Evidence for different mechanisms**

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Although it has been recognised that behavioural, cognitive and neural processes may differ in individuals with Williams syndrome (WS) (Karmiloff-Smith, 2012), research on language in WS has focused on assessing language ability in off-line tasks with few studies investigating online processing. Hence our knowledge is still limited with regard to how individuals with WS acquire patterns that exist in language. A study by Don et al., (2003) investigated Artificial Grammar Learning (AGL) in WS and reported that the control group outperformed the WS group but this study did not offer any analysis of how individuals with WS did the task.

Our study reports data from 13 participants with WS (5 to 12) and 45 typically developing (TD) children (3 to 12). They participated in an AGL task built around a magician who was learning his spells and which was based on a A(B)C schema (ex: RANA SETO PIDUR). The participants were familiarised for 8 mins with 10 AGL utterances which were repeated on average 10 times. After the familiarisation, the participants were given a judgment task consisting of 10 grammatical (6 familiar, 4 unfamiliar utterances) and 10 ungrammatical utterances, and they had to decide an utterance was a spell or not.

Results: both groups performed above chance on the judgment task, suggesting that they were able to learn something about the pattern of the stimuli and were able to generalise this knowledge to previously unheard stimuli. However, the TD children relied on the utterances’ grammaticality to decide whether to accept or reject them, the WS group relied on familiarity. This suggests that decisions as to whether an item was acceptable or not are driven by different mechanisms in the two groups: in TD children, it is grammaticality (or global processing), in children with WS it is familiarity based (local processing).

**Parental views on communication: A study of Finnish children with bilateral cochlear implants**

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Investigating pragmatic skills is essential, because pragmatic skills are known to be related to self-image, the ability of building positive peer relationships (Loukusa, Paavola, &
Leiwo, 2011), and academic skills (Thagard, Hilsmier, & Easter-Brooks, 2011). Still, there are hardly any studies published on pragmatic development of children with hearing impairment, especially children acquiring spoken Finnish and growing up in Finnish culture. Our study aims at answering the following questions: 1) How do the communication profiles of children with cochlear implants compare with children with normal hearing by parental report? 2) If the children with cochlear implants have problems in communication by parental report, are these problems more pronounced in speech and language or in pragmatic skills?

The communication abilities of six children with cochlear implants and eight children with normal hearing were assessed in this cross-sectional study by their parents with the Finnish version of Children’s Communication Checklist-2 (CCC-2; Bishop, 2003). There are 10 scales in CCC-2: speech, syntax, semantics, coherence, inappropriate initiation, stereotyped language, use of context, nonverbal communication, social relations, and interests. The age of the children ranged between 4;0 and 4;8. The children with cochlear implants were matched with the children with normal hearing by their chronological age. The mean age at implant activation was 14 months (range 12–18 months).

Our preliminary findings indicate that according to parental reports children with cochlear implants seem to perform worse than children with normal hearing in many aspects of communication. Children with cochlear implants may have problems in both their speech and language, and in their pragmatic skills. However, we need further studies to find out how these children develop in the different aspects of communication later in their lives, and whether they catch up their age peers or not.

Boards: 40 – 43  
Keyword: Gesture

Do you see what I mean?: Children use iconic gestures in speech disambiguation

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Everyday language is rife with verbal ambiguity. Adult speakers (Holler & Beattie, 2003) and listeners (Holle & Gunter, 2007) use iconic gestures to resolve lexical ambiguities, and to disambiguate the dominant and subordinate senses of homonyms. The only study that has investigated the developmental role gesture plays in the resolution of lexical ambiguity has focused on how children produce gestures to disambiguate homonym senses. Kidd and Holler (2009) found that while 3-year-olds rarely disambiguated between different senses, 4-year-olds used gestures to do so. Five-year-olds rarely used gestures since they were able to verbally resolve lexical ambiguities. Thus, gestures provided children who were just starting to understand homonymy with a valuable tool to communicate this understanding.

The present study asked whether a speaker’s iconic gestures help children resolve lexical ambiguity in speech. Twenty-four children aged 4 watched videoclips where a speaker uttered a sentence containing a homonym (e.g. The glasses fell on the floor and broke) accompanied either by a cospeech iconic gesture, or no gesture. Children were then given pictures depicting the dominant and subordinate senses of the homonym and asked to choose the sense the speaker referred to. Four-year-olds had a preference for one of the senses of the homonyms, regardless whether this dominant sense was accompanied by a gesture. In contrast, the presence of gestures significantly increased children’s preference for the subordinate senses of homonyms.

In sum, 4-year-olds, who are not yet able to verbally distinguish lexical ambiguities, rely on gestures in comprehension. Children also benefit from speakers’ gestures selectively, using them only to comprehend senses that they would otherwise ignore. We argue that seeing different homonym senses represented in gesture helps young children better understand that one-to-many mappings are possible in language, and allows them to zoom in on senses that they have not yet fully acquired.
The development of children's irony detection skills: The role of emotional prosody and gestures

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This study aims to test the potential contribution of emotional prosody and gestures to the development of children's ability to detect a speaker's ironic intent. Development studies on irony comprehension have shown that (1) the appreciation of a speaker's intent requires the assessment and integration of cognitive and emotional information, and (2) inference processes become more accurate as children grow up (e.g. Harris & Pexman 2003).

There is no consensus in the literature regarding the role of auditory cues in verbal irony detection by children, and, as far as we know, no studies have tested the role of gestures in verbal irony detection by children. The aim of this investigation is to test whether gestural and prosodic cues will be used by children to detect the ironic intention of the speaker, and, moreover, whether they use more actively these cues than contextual ones to detect ironic intents.

Ninety 5- to 12-year old children participated in a perception experiment in which they were audiovisually presented with 12 short stories that involve two characters and end in a target statement. These 12 target statements were presented in 5 different conditions obtained from a combination of three variables: (1) context (positive vs. negative); (2) sentence evaluation (positive vs. negative) (e.g. “well/bad done”) and (3) conveyed emotion (positive vs. negative vs. emotionless).

Children were asked to judge the speaker intent to be “nice” or “mean” through the selection of a response object (as in Nicholson et al. 2013). We assess (a) children’s judgments of the speaker’s intent and (b) children's on-line processing of speaker intent.

Interestingly, our preliminary results show that contrasts between literal content of the statement and the way the sentence is produced are more important to early irony detection than those contrasts existing between context and the literal content of the statement.

Preliminary data indicates that the use of gestures is predictors of language development in several areas: a) a relationship between the amount of objects that babies points and comprehensive vocabulary that they will develop, b) an indication of which words the child will acquire soon, and c) a prediction of syntactic skills.

When children don't have normal access to linguistic input the use of gestures is considered different as it supports all communication skills in contrast with children that use gestures as a complement to their oral communication. The purpose of this study is to analyse the characteristics of the gestures used by Portuguese toddlers, taking into account all communicative functions. Participants in this pilot study are 9 children aged 8 to 18 months who attended a day care and mother-child interactions were videotaped. Preliminary data indicates increase of gestures from 8-9m to 10-12m but not so expressive from 10-12m to 13-18m. Also it was observed that some communicative functions were performed by different types of gestures, but others were only performed by one type of gesture. The informative and instrumental functions were performed by different types of gestures (deictic, conventional and iconic) but regulatory, ritual, and personal functions were performed only by conventional gestures. The analysis and comprehension of the types of gestures that Portuguese children use in their communication may be relevant in the assessment and intervention of children pre-linguistic communication skills.
The parallel development of two-handed gestures and linguistic information packaging within a clause in narrative

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Much research has investigated the development of co-speech gestures and speech in children. However, few studies have studied the extent to which gesture and speech are similar to one other in the development of form-referent relationships. Thus, we examined how two-handed gestures and speech with equivalent contents that are used in narrative develop during childhood. The participants were 40 native speakers of English consisting of four different age groups; 3-, 5- and 9-year-olds, and adults. A set of 10 video clips depicting motion events was used to elicit speech and gesture. There are two findings. First, the frequency of two-handed gestures showed a U-shaped change with age: 3-year-olds and adults used the two-handed gestures more often than 5- and 9-year-olds. This pattern was caused by one type of two-handed gestures (those with a single-handed stroke with a simultaneous hold) that increased with age, and another type (those with a two-handed-stroke) that decreased. Second, representational gesture and speech developed in parallel at semantic levels. Adults encoded landscape elements more often in clauses and two-handed gestures than the younger age groups. When expressing two protagonists, adults were more likely to foreground one protagonist while back-grounding another protagonist within clauses and two-handed gestures as compared to the younger age groups. These findings indicate that the ways in which information is packaged in gestures and clauses are similar in a given age group. From these findings, we propose that gesture and speech develop hand-in-hand in relation to two-handed gestures and clausal packaging of event participants in speech.

Boards: 44 – 52        Keyword: Bi-/multi-lingualism

Does bi(tri)lingualism affect the realization of copula in child Hungarian: An approach from a case study

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While Spanish and Catalan distinguish between individual-level (IL) and stage-level (SL) predicates, Hungarian has only one copula: van. Copular verbs are obligatory in all tense contexts in Spanish and Catalan but Hungarian is governed by the so-called ‘third person parameter’ that restricts copula omission to third person subjects in the present tense. Moreover, in some contexts (locative sentences) the copula is optional. Given this intriguing panorama and that research in child English (Becker 2000, 2004) has reported copula omission more frequently in SL predicates than in IL predicates, this paper aims to answer the following questions: 1) Is Hungarian copula realization influenced by the obligatoriness of the other two languages causing a lower omission rate in optional contexts than monolinguals? 2) Has Spanish and Catalan dual copula system any negative effect on Hungarian copula acquisition in obligatory zero copula?

There are no studies on Hungarian copula acquisition, either on this trilingual combination. This paper reports the copula production of a trilingual girl. We collected 108 video sessions (30 minutes each) of spontaneous data for two years (1;7 - 3;7). All sessions were transcribed (CHILDES system) and all copular sentences were extracted and coded for type of copula and omission. More than 1400 tokens were analyzed. The results indicate that, in optional contexts, the child shows a realization rate much higher (93.2%) than adult Hungarian (about 30% of realization) and than Hungarian monolingual children (about 34%; our elaboration of data from MacWhinney 2000). No overproduction of copula in zero contexts is
attested. These findings lead us to suggest that the influence of the Catalan and Spanish copular system seems to have an impact on the optionality of copula usage in child Hungarian but prevents the creation of ungrammatical sequences.

The language abilities of bilingual internationally adopted children: Three case studies

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IA children from China experience L1 attrition and delayed exposure to their new language, which are thought to be risk factors for later language acquisition. Indeed, research has shown that monolingual IA children perform significantly lower than monolingual non-adopted children matched on age, gender, and socioeconomic status (SES) on vocabulary, grammar, and sentence recall (Delcenserie & Genesee, 2014). The present study sought to determine if the language abilities of bilingual and monolingual IA children are similar, indicating that reduced exposure is not detrimental, or if their dual language acquisition widens the gap with monolingual non-adopted children that has already been reported for monolingual IA children and matched controls.

Three bilingual Chinese adoptees (7;7, 8;4, and 9;8 years of age) who were acquiring French and English from the time of adoption were compared to three monolingual French-speaking Chinese adoptees and three non-adopted monolingual French-speaking controls. The children were matched on length of exposure to French, gender, and SES, and were compared on cognitive and socio-emotional development, vocabulary, grammar, and sentence recall. The bilingual IA children had been exposed equally to English and French, but the present study focused on French.

Examination of the children’s individual performance showed that the groups performed similarly on cognitive and socio-emotional development. Mann-Whitney U-tests confirmed that the bilingual adoptees performed significantly lower than the non-adopted controls on vocabulary, grammar, and sentence recall. At the same time, the bilingual adoptees performed significantly lower than monolingual adoptees on sentence recall, but did not differ from the monolingual adoptees on vocabulary and grammar.

The language scores of the bilingual and monolingual adoptees did not differ significantly, suggesting that L1 attrition and delayed language exposure do not impede them from learning two languages simultaneously. However, the bilingual adoptees’ significantly lower performance on sentence recall in comparison to the monolingual IA children suggests that the effects of dual language acquisition on verbal memory might be increased by attrition and delayed language exposure.

The acquisition of inflectional morphology by Italian-English BFLA children: Implications for theories of language development

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This study explores the linguistic development of a 3-year old Italian-English Bilingual First Language Acquisition (BFLA) child. The aim is threefold. The first purpose is to investigate the impact of first language typology on the acquisition of inflectional morphology. Cross-linguistic research and studies of BFLA children suggest that inflectional items are used productively earlier in highly inflected languages than in languages with sparse morphology. However, studies adhering to a constructivist account of language development argue against cross-linguistic differences in children’s early morphological productivity. The second aim is to explore potential interaction effects between BFLA children’s two languages at the level of inflectional morphology. This investigation can shed light on whether cross-linguistic influence is systemic or temporary. The former interpretation suggests that bilingual acquisition alters the
Normal course of language development. In the second interpretation cross-linguistic influence is seen as a form of overgeneralisation, the nature of which is not dissimilar to that of phenomena also observable in monolingual acquisition. The last purpose is to investigate the extent to which the morphological patterns identified can be explained within the two major approaches to languages acquisition: the nativist approach and the constructivist approach. The data are collected through the means of longitudinal language sampling in audio-recorded play sessions, an elicitation task and a questionnaire. The spontaneous data are analysed to determine acquisition of verbal and nominal morphology in both languages. For each inflectional form the distinction is made between first appearance and point of acquisition. The elicited data are analysed in terms of correct answers in each language for each of the morphemes tested. Finding from the elicitation task are contrasted with data from the naturalistic sampling context. Results illustrate complementary patterns of development across both languages. These findings are discussed in terms of theoretical implications about language acquisition and bilingual development.

**Dislocations in French-English bilingual children: Examining the effect of language dominance on cross-linguistic influence**

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Previous studies suggest that cross-linguistic influence (CLI) would be mediated by language dominance among other variables (Kupisch, 2007; Serratrice et al., 2011). To date, language dominance has been considered either in terms of language exposure or of productive abilities. This paper aims at assessing the role of these two contrasting measures on CLI at the sentence level. The cross-linguistic differences in the way French and English encode topics make dislocations ideal candidates for CLI. Dislocations are typically constituted of a Noun Phrase that appears at the periphery of the sentence and is co-referential with a pronoun (e.g. Le lioni, ili court/The lioni, he runs). They are pragmatically optimal to encode sentence topics in French; their use is considerably more limited in English (Donaldson, 2011). The longitudinal corpus of Sophie and Anne, two pre-school French-English bilingual children (2;6-3;7), i.e. 24 hours of recordings per child, was coded for dislocations. Cattani et al.’s (2014) parental questionnaire indicated that both children received balanced exposure to their languages (English: Sophie: 58%; Anne: 55%). Kupisch’s (2007) magnitude of language contrast, i.e. determined in comparing the children’s MLUw, Upper Bound, and increase in the number of nouns and verbs across French and English, revealed that Anne has stronger productive abilities in English and Sophie has balanced competencies in her languages. The bilinguals’ use of dislocations was compared to that of comparable French and English monolinguals. The data displays unidirectional CLI from French to English in the use of dislocations. The comparable rates of dislocations in the bilinguals’ English suggest that language exposure rather than productive abilities affect the magnitude and direction of CLI. This paper reports that CLI occurs for topichood at the level of a whole construction. It also provides new information on the role of language dominance, i.e. expressive abilities vs. language exposure on CLI at the sentence-level.

**Modern technology in vocabulary development of bilingual children**

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The poster will demonstrate the results of a research conducted in Polish children who live in Great Britain and speak both Polish and English language. The research served to evaluate the effectiveness of a multimedia program of language exercises for bilingual children. The aim of the exercises was to stimulate the development of Polish vocabulary in Polish children living
abroad whose mother tongue is gradually becoming their second language. The program is original and it was placed on an internet platform.

The results of the research refer to the development of Polish vocabulary in children aged 4 to 8. The children from the research group live in Great Britain and attend English-speaking schools on weekdays and Polish-speaking schools once a week, on Saturday. All the children come from families consisting of at least one Polish parent. The results which will be displayed in the poster present the change in the level of Polish vocabulary in bilingual expatriate children who carried out modern language exercises for nine months. The results will be compared with the ones obtained from two check groups: children stimulated with traditional methods and children who did not do any exercises.

Based on the results, the poster will demonstrate the effectiveness of the three approaches to the children’s language development. It will show which of them turned out to be the most efficient. The research children’s vocabulary was evaluated by means of “A Child’s Vocabulary Test” (“Test słownika dziecka”) by professor Zbigniew Tarkowski.

Nowadays the computer and modern technologies accompany children from very young age, therefore the main aim of the research was to study whether they could serve as helpful tools for children vocabulary development stimulation.

**Tweedledum and Tweedledee? Comparing typical bilingualism and bilingual SLI in a longitudinal twin case study**

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“We can no longer afford a monolingual norm”, Zurer-Pearson (2010: 339) states in her commentary to Paradis’ keynote article (2010) and quite rightly so. The substantial demographic changes in Europe over the past decades have led to a stark increase in bilingual children and yet the vast majority of linguistic measurements is standardised on monolinguals, which frequently leads to the misdiagnosis of typically developing bilingual children as language impaired. It is therefore crucial to understand where typical bilingual language development ends and language impairment begins, which is the aim of this study. Using a twin case study design, the linguistic differences between a typically developing and a language impaired English-Polish bilingual were analysed. The twin boys have been assessed aged 4;8, 4;10 and 5;6, 6;10 years in both their languages using non-linguistic measurements, productive and perceptive lexical tests, sentence and nonword repetition tasks, recognition of grammar assessments and narrative tasks.

Their results differ significantly in regard to phonological processing, morphosyntactic knowledge, grammaticality, length and complexity of narratives as well as metalinguistic awareness. Interestingly, lexical tasks were the least reliable to distinguish between the typically developing and the language impaired child. This is true for both their languages with one significant difference; the English lexical tasks under-diagnosed the language impaired child while the Polish test over-diagnosed the typically developing one. Sentence - and nonword repetition tasks, on the other hand, showed clear differences, especially when analysed qualitatively. It thus seems like tests which require a higher level of (phonological) processing might be better suited to accurately tell typical bilingual language from bilingual SLI.

**Lexical Access and vocabulary in bilingual nursery children**

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Previous studies have shown that children growing up bilingually have a smaller vocabulary size than monolingual children of the same age (Bialystok 2012). The size of the vocabulary in each language was found to be dependent on age as well as status of both
languages. Translation equivalents have been found to occur early (Schelletter 2002), yet their proportion in the child’s vocabulary varies.

The present study compares the accuracy and latencies of a picture naming task consisting of 20 nouns and 20 verbs per language in a group of preschool children who were raised either as simultaneous bilinguals (German/English) or early sequential bilinguals (with either German or English as L1) with their results on standardised receptive and expressive vocabulary tasks.

There were 30 bilingual children in total. All of them were studied as part of a European project on 'Early Language and Intercultural Acquisition Studies (ELIAS)' which was funded by the European Commission (Kersten et al., 2010). Children were grouped into simultaneous bilinguals, early L2 learners of English and early L2 learners of German according to the information provided by parental questionnaires. Pictures representing objects and actions for each language were presented on a computer using superlab and reaction times were measured.

Results showed that in line with previous research, showing that the children were below the level of monolingual children on standardised tests, yet in line with the status of their languages. Naming accuracy for the picture task correlated with the result of the standardised vocabulary tasks. Regarding latencies, the bilinguals were found to name pictures more slowly than the early sequential learners. These results are discussed in relation to bilingual access in child and adult speakers (Costa, Caramazza and Sebastian-Galles 2000).

Can non-native bilingualism lead to speech delay or impediment?

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The term non-native bilingualism (NNB) refers to a situation where a parent resolves to permanently use a non-native language when communicating with his/her child. The parents are native speakers of the same language which is the dominant language of the community. The empirical research on the NNB has the character of a quantitative and qualitative analysis of the phenomenon. Its aim is to answer the carefully selected research questions and prepare a guidebook for parents intending to raise their children in the NNB. The research does not aim to encourage or advertise the NNB method. It is intended to be a reliable source of information concerning this phenomenon, so as to make it easier for the parents who are considering talking to their children in a foreign language to make a conscious decision.

One of the arguments against NNB is that it may cause speech delay or impediment. During the speech tests conducted among 18 children from NNB families it was checked whether this opinion receives confirmation. The study based on screening speech tests by Katarzyna Węsierska and Iwona Michalak-Widera involved the examination of understanding and speech production (articulation of sounds which should be pronounced correctly by children at a particular age) and efficiency of their speech organs (articulators).

The results revealed that the NNB does not have a negative impact on speech development in L1. In comparison with their monolingual peers, the NNB children do not start speaking later, nor do they speak less, more slowly or use simpler constructions. Any speech problems which should arise can also be observed in children who speak only Polish. Moreover, the non-native speaking can cure stutter according to the New Speech ®.

The socialisation process of two multilingual children with Autism Spectrum Disorders: Ethnographic study.

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From the first year of life, interaction between adult and child is an essential foundation for the acquisition of language. The differences in the language development of an autistic child
raise questions about the possible differences underlying the interactions in which he/she is involved.

Moreover, the language practices to which the child participates vary not only according to its typical or atypical development, but also according to the different cultures.

Our contribution describes an exploratory research on the role of the language environment in the development of social ties for two multilingual (with a multicultural family background) 9-year-olds displaying autism spectrum disorders.

To do so, we chose the method of triangulation of points of view (Olsen, 2004). The socialisation processes of the subjects were thus explored by cross-referencing various perspectives. Indeed, through an ethnographic approach, we examined the verbal and non-verbal conducts of the two children in various realms of their daily life. We collected data through audio recordings during interactions at school, a focal sampling (Altmann, 1974) in the playground (over 4 months), and through clinical and individual interviews with one of their parents.

The whole resulting body of research allowed us to outline the language environment and to understand its complexity. Our results underline the importance of language in the socialisation processes. In particular, it suggests that children with a more advanced language knowledge have larger social networks than other children whose development is less advanced.

From these results, we propose perspectives of work centered on the language awareness ("eveil aux langues") for a population affected by autism spectrum disorders.
Maps
Campus Map

Key:
Conference space: 9 (Chemistry) and 48 (Physics)
Conference dinner and B&B dining: 55 (Rootes)
Conference accommodation: 31 (Jack Martin), 3 (Arthur Vick), 7 (Bluebell)
Other dining: 68 (Arts Centre: Le Gusta), 63 (Student’s Union: The Dirty Duck pub, Xananas, Curiositea, The Bread Oven, The Terrace Bar), 60 (Rootes grocery store)
Visitor parking: 7, 8, 8a, 9, 10, 10a, 15
Sports Centre: 62

Towards Coventry, A45, M6

Towards Kenilworth, Leamington Spa, M40, M1