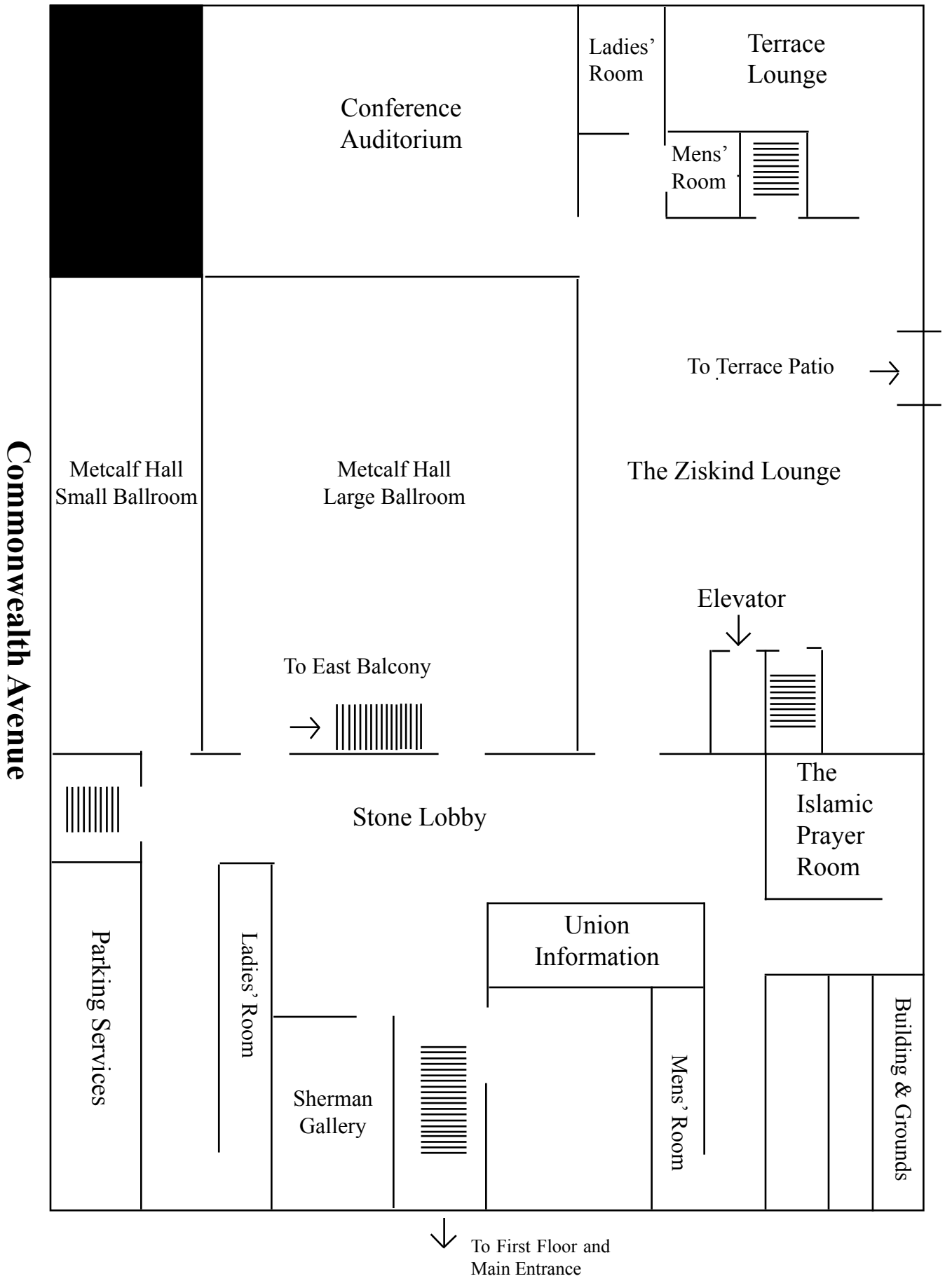
BUCLD 36

The 36th Annual

Boston University Conference on Language Development

November 4-6, 2011

Map of George Sherman Union (Second Floor)



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Welcome

Our 36th Year

Welcome to the thirty-sixth Annual Boston University Conference On Language Development. Since 1976, BUCLD has been organized by graduate students in Boston University's Program in Applied Linguistics. With years of student work and the help of faculty advisors, the conference has become an international gathering of linguists, psychologists, and other researchers of language acquisition and development. We thank our participants for the research accomplishments they have shared with us over the past thirty-five years.

New This Year

Please note that this year, the NIH and NSF session entitled **"What's Hot and How to Apply"**, to be facilitated by Peggy McCardle (NIH) and Joan Maling (NSF), will be held on on **Friday at 8:00 AM** in the Conference Auditorium.

Please also note that this year the book exhibits will run from 9:00 AM to 5:00 PM on Friday, and from 10:00 AM to 6:00 PM on Saturday. There will be no exhibits on Sunday; purchased books may be picked up on Sunday before 1:00 PM.

Invited Speakers

At this year's conference, we are honored to have Sandra Waxman and Cornelia Hamann as our featured speakers. Sandra Waxman will present Friday's keynote address, entitled "What's in a word? Links between linguistic and conceptual organization in infants and young children." Saturday's program will close with Cornelia Hamann's plenary address, "Bilingual development and language assessment." This year's symposium, to be held during Saturday's lunch period, is entitled "Morphology in second language acquisition and processing" and will feature speakers Harald Clahsen, Holger Hopp, Donna Lardiere, and Silvina Montrul.

Paper and Poster Presentations

The rest of the program is devoted to a wide range of papers and posters chosen from submitted abstracts. This year we received 479 submissions, each of which was sent out to five reviewers for anonymous review. Of these, 81 papers and 72 posters were selected for presentation, with an acceptance rate of 34%. We are sorry not to have had space to include more of the many excellent submissions we received. We have also included abstracts for those who generously agreed to serve as alternates in case of cancellations.

Proceedings

Once again this year we will be publishing the Proceedings of the Conference, which includes papers presented and those selected for alternate status. Information about ordering copies is available in your handbook and at the Cascadilla Press table during the book exhibit. We will also have an online supplement to the proceedings for papers given as posters, which will be published on the web by BUCLD.

Here at Boston University, we are committed to providing an ongoing forum for work in the diverse field of language development. We hope you will enjoy the conference!

The 2011 Conference Organizing Committee

Alia Biller
Esther Chung
Amelia Kimball

Faculty Advisors

Paul Hagstrom
Cathy O'Connor

Chairs

Sarah Baiz
Rachel Benedict
Nora Goldman
Rachel Hawkes
Pengfei Li
Jason Lucas
Hyunsuk Sung

Boston University Conference on Language Development
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Boston, MA 02215
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For general information about the conference, visit our website at http://www.bu.edu/bucld.

Acknowledgements

The Boston University Conference on Language Development is organized each year by students from the Program in Applied Linguistics. Every year, we depend upon the proceeds generated by registration and exhibition fees to cover the costs of hosting the conference, and we are very grateful to all of our participants for providing this support. In addition, this year's conference is supported in part by the National Science Foundation under Grant No. BCS-0548399 and the National Institutes of Health under Grant No. R13 HD042130-09, for which we are also grateful.

We would like to thank the many graduate and undergraduate students who contributed their time and effort both throughout the past year and during this weekend. We are particularly thankful to the faculty and staff of the Program in Applied Linguistics and the School of Education for their support and encouragement.

We extend special thanks to our faculty advisors, Paul Hagstrom and Cathy O'Connor, for the care and guidance that have helped to ensure a successful conference. Their expertise and support have been invaluable.

We would also like to acknowledge the efforts of several vital offices at Boston University. Our thanks go to Dawn Quinlan of Events and Conferences, whose skill and experience have provided us with the proper equipment, facilities, and refreshments for the conference. We would also like to thank Jeanette Ocampo Welch and Rafael Trevino of Disability Services for providing American Sign Language interpreters, and Stan Gurczak of Student Production Services for bringing us a new lighting system for the interpreting team. Finally, our thanks go to Marianne Taylor and Liz Politis for their support in managing the conference finances, and to Benjamin Fenster, Lisa Wong, and Jennifer Pereira for collaborating on the maintenance of our online registration system.

Once again, we were fortunate to be able to use Pasha, the abstract review software developed by Ezra Van Everbroeck at the University of California at San Diego, in our online review process. We continue to be grateful for the generosity of our colleagues in the Linguistics Department at UCSD.

Finally, we would like to thank the 166 reviewers listed below who read and rated the abstract submissions we received this year. The high quality of the abstracts makes it especially difficult to assemble a program of just 81 papers and 72 posters. We are particularly grateful for their thoughtful attention to each submission.

Nameera Akhtar
Shanley Allen
Ben Ambridge
Inbal Arnon
Richard Aslin
Jessica Barlow
David Barner
Edith Bavin
Misha Becker
Heike Behrens
David Birdsong
Gerard Bol
Patrick Bolger
Ellen Broselow
Nancy Budwig
Ann Bunger
Helen Cairns
Catherine Caldwell-Harris
Kyle Chambers
Molly Collins
Erin Conwell
Peter Coopmans
Stephen Crain
Suzanne Curtin
Barbara Davis
Cecile De Cat
Kamil Deen
Laurent Dekydtspotter
Heiner Drenhaus
Ken Drozd
Nigel Duffield
Catherine Echols
Neiloufar Family
Anne Fernald
Michael Frank
Maria Joao Freitas
Alison Gabriele
Anna Gavarro
Lisa Gershkoff-Stowe
Judit Gervain
Heather Goad
Adele Goldberg
Roberta Golinkoff
Janet Grijzenhout
John Grinstead
Theres Gruter
Ayse Gurel
Martin Hackl
Cornelia Hamann
Makiko Hirakawa
Kathy Hirsh-Pasek
Miren Hodgson
Barbara Hoehle
Bart Hollebrandse
Yi Ting Huang
Felicia Hurewitz
Nina Hyams
Tania Ionin
Elizabeth Johnson
Rene Kager
Dorit Kaufman
Nina Kazanina
Evan Kidd
Grzegorz Krajewski
Tanja Kupisch
Usha Lakshmanan
Laura Lakusta
Donna Lardiere
Thomas Lee
Beth Levin
Casey Lew-Williams
Juana Liceras
Jeffrey Lidz
Heather Littlefield
Conxita Lleo
Molly Losh
Theo Marinis
Lori Markson
Danielle Matthews
Rachel Mayberry
Corrine McCarthy
Tamara Nicol Medina
Luisa Meroni
Toben Mintz
Maria Mody
Silvina Montrul
James Morgan
Alan Munn
Julien Musolino
Letitia Naigles
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Elissa Newport
Claire Noble
Rama Novogrodsky
Cathy O'Connor
William O'Grady
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Lisa Pearl
Sharon Peperkamp
Ana Perez-Leroux
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Nuria Sebastian Galles
Amanda Seidl
Ann Senghas
Joan Sereno
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Rushen Shi
Yasuhiro Shirai
Leher Singh
Roumyana Slabakova
William Snyder
Melanie Soderstrom
Hyun Joo Song
Antonella Sorace
Rex Sprouse
Jeffrey Steele
Carol Stoel-Gammon
Kristen Syrett
Kriszta Szendroi
Helen Tager-Flusberg
Anne-Michelle Tessier
Margaret Thomas
Rosalind Thornton
Ruth Tincoff
John Trueswell
Ianthi Maria Tsimpli
Sharon Unsworth
Sigal Uziel-Karl
Elena Valenzuela
Heather van der Lely
Angeliek van Hout
Spyridoula Varlokosta
Joshua Viau
Laura Wagner
Daniel Weiss
Juergen Weissenborn
Lydia White
Elizabeth Wonnacott
Charles Yang
Chen Yu
Andrea Zukowski
Kie Zuraw
Barbara Zurer Pearson

General Information

Registration and Session Locations

All sessions will be held in the George Sherman Union located at 775 Commonwealth Avenue. Registration will take place in the second floor lobby (see diagram on the back of the front cover). You may register on Friday starting at 8:00 AM, or Saturday and Sunday starting at 8:30 AM. Please register before attending any sessions. We rely greatly upon registration fees to cover the costs of the conference. We appreciate your willingness to wear your name badge; you may be asked to present it before entering sessions.

Plenary Events

- The **Keynote Address** will be delivered by Sandra Waxman on Friday at 7:45 PM in Metcalf Large. Poster Session I (unattended) will immediately follow in Metcalf Large. Desserts will be served in the Ziskind Lounge.

- The **Plenary Address** will be given by Cornelia Hamann on Saturday at 5:45 PM in Metcalf Large. Poster Session II (unattended) will immediately follow in Metcalf Large. Hors d'oeuvres will be served in the Ziskind Lounge.

- A **Lunchtime Symposium** entitled "Morphology in second language acquisition and processing" with presentations from Harald Clahsen, Holger Hopp, Donna Lardiere, and Silvina Montrul will be held on Saturday at 12:15 PM in Metcalf Large.

Poster Sessions

- **Poster Session I:** On Friday, 41 posters will be on display in Metcalf Large. There will be one attended Poster Session at 3:00 PM, and an additional unattended session at 9:00 PM. Refreshments will be available at both sessions.

- **Poster Session II:** On Saturday, 39 posters will be on display in Metcalf Large. There will be one attended Poster Session at 3:15 PM, and an additional unattended session at 7:00 PM. Refreshments will be available at both sessions.

Special Sessions

- A special session entitled **"What's Hot and How to Apply"** will be facilitated by Peggy McCardle (NIH) and Joan Maling (NSF) on Friday at 8:00 AM in the Conference Auditorium.

- The **Society for Language Development** will hold its annual symposium, "Connections between written language and spoken language," on Thursday, November 3 at 1:00 PM in Metcalf Large, with a reception following immediately in Metcalf Small. Speakers include Charles Perfetti, Rebecca Treiman, and Mark Seidenberg.

- **NSF and NIH consultation** hours will be held in the Ziskind Lounge. NIH hours will be held on Friday from 9:30 AM to 12:00 PM and from 2:30 to 5:00 PM. NSF hours will be held on Saturday from 9:30 AM to 12:00 PM and from 2:30 to 5:00 PM.

- A **BUCLD Business Meeting** will be held on Friday from 12:30 to 1:45 PM in the Conference Auditorium.

Additional Information

- **Parking** is available at the Agganis Arena Garage (925 Commonwealth Avenue) for $1 per hour and at the Warren Towers Garage (700 Commonwealth Avenue) for $12 per car per day. Please mention that you are with BUCLD, if asked. Free on-street parking is also available on Sunday. More information can be found at http://www.bu.edu/parking.

- **Temporary luggage storage space** is available next to the registration desk. The area will be staffed during conference sessions only. Although a student volunteer will be present in the registration area, participants leave their luggage at their own risk.

General Information

- A **nursing room** will be available for nursing mothers in GSU 310-311.
- **Wireless internet access** is available throughout the GSU. Information for connecting is given in the box below.
- **Refreshments** will be served in Ziskind Lounge before the morning sessions and during breaks, and during poster sessions. A list of local restaurants is available at the information table. The Food Court on the ground floor of the George Sherman Union offers a wide selection, but is cash-only.
- **The 37th Annual Boston University Conference on Language Development** is tentatively scheduled for November 2 - 4, 2012, at Boston University.

The Registration desk provides the following services:
ASL Interpreters (Please inquire when you arrive) * Lost and Found * Campus Maps * MBTA Maps * General Information

INTERNET INFO

Guest ID: 126080

Account Name: bucld36

NIH/NSF Consultation Hours

Peggy McCardle (NIH) and Joan Maling (NSF)

NIH: Friday 9:30 AM - 12:00 PM & 2:30 - 5:00 PM

NSF: Saturday 9:30 AM - 12:00 PM & 2:30 - 5:00 PM

Schedule at a Glance

Thursday, November 3

1:00 PM - 5:00 PM	Society for Language Development Annual Symposium

Friday, November 4

8:00 AM	Registration begins
8:00 AM - 9:00 AM	Funding Symposium
9:00 AM - 5:00 PM	Book exhibits
9:00 AM - 10:30 AM	Talks
10:30 AM - 11:00 AM	Morning break with refreshments
11:00 AM - 12:30 PM	Talks
12:30 PM - 2:00 PM	Lunch break / BUCLD business meeting
2:00 PM - 3:00 PM	Talks
3:00 PM - 4:15 PM	Poster Session I attended with refreshments and afternoon break with refreshments
4:15 PM - 5:45 PM	Talks
5:45 PM - 7:45 PM	Dinner break
7:45 PM - 9:00 PM	Keynote Address
9:00 PM - 9:45 PM	Poster Session I unattended with refreshments

Saturday, November 5

8:30 AM	Registration begins
9:00 AM - 10:30 AM	Talks
10:00 AM - 6:00 PM	Book exhibits
10:30 AM - 11:00 PM	Morning break with refreshments
11:00 AM - 12:00 PM	Talks
12:15 PM - 2:15 PM	Lunch Symposium
2:15 PM - 3:15 PM	Talks
3:15 PM - 4:30 PM	Poster Session II attended with refreshments and afternoon break with refreshments
4:30 PM - 5:30 PM	Talks
5:45 PM - 7:00 PM	Plenary Address
7:00 PM - 7:45 PM	Poster Session II unattended with refreshments

Sunday, November 6

8:30 AM	Registration begins
9:00 AM - 10:30 AM	Talks
10:30 AM - 11:00 AM	Morning break with refreshments
11:00 AM - 1:00 PM	Talks

FRIDAY, NOVEMBER 4

Time	Session A (Metcalf Small)	Session B (East Balcony)	Session C (Conference Auditorium)
8:00	NSF/NIH Funding Symposium: What's hot and how to apply (Conference Auditorium)		
9:00 - 5:00	**BOOK EXHIBIT**		
9:00	R. Scott, C. Fisher: Lexical pre-exposure facilitates the use of cross-situational information in verb learning	J. de Villiers, T. Roeper, E. Harrington, E. Gadilauskas: Tense and Truth in Children's Question Answering	J. Hochmann, S. Benavides-Varela, M. Nespor, J. Mehler: Emergence of the functional specialization of consonants and vowels in language acquisition
9:30	S. Arunachalam , K. Syrett, S. Waxman: Can adverbs call attention to manner of motion for 2-year-olds learning verbs?	K. Miller: Variable Input: What Sarah reveals about the link between the RI Stage and the use of non-agreeing *don't*	L. Nishibayashi, T.Nazzi: Asymmetry in consonant/vowel processing: evidence from early word segmentation
10:00	M. Kline, J. Snedeker, L. Schulz: Preschoolers prefer to map novel transitive verbs to events with spatiotemporal features that mark causation	F. Arosio, B. Hollebrandse, W. Dressler et al.*: The acquisition of tense in 17 languages	N. Gonzalez Gomez, T. Nazzi: Evidence of phonological feature constraints on the acquisition of phonological dependencies
10:30	**BREAK (Ziskind Lounge)**		
11:00	J. Trueswell, D. Kaufman, A. Hafri, J. Lidz: Development of parsing ability interacts with grammar learning: Evidence from Tagalog and Kannada	S. Armon-Lotem, S. Chiat: How do sequential bilingual children perform on non-word repetition tasks?	A. Cristia, S. Peperkamp: Generalizing without encoding specifics: Infants infer phonotactic patterns on sound classes
11:30	A. Bunger, J. Trueswell, A. Papafragou: Information Packaging for Causative Events: Cross-Linguistic Differences and Implications for Language Production and Attention	M. Woodley: Word and Sound Processing in Bilingual Preschoolers	J. Ren, J. Morgan: The Devil in the Details: Underspecification in Infants' and Adults' Lexical Representations
12:00	W. Lee, H.Song: Korean children's sensitivity to case markers when interpreting a novel verb	I. Elgort: The what, the why and the how: Second language vocabulary development from reading	R. van de Vijver, D. Baer-Henney: Voice less, front more. On the development of knowledge of voicing and vowel alternations in German nouns by 5 year-olds, 7 year-olds and adults
12:30	**LUNCH BREAK/ BUCLD BUSINESS MEETING (Conference Auditorium)**		
2:00	C. Schroeder, J. Holzgrefe, I. Wartenburger, B. Hoehle: Perception and weighting of prosodic boundary cues in eight-month-old German infants	E. Kim: The role of islands in processing English as a second language	J. Pyers, J. Lu, R. Magid, D. Gentner, K. Emmorey: Acquisition of spatial language in American Sign Language is linked to spatial cognition
2:30	S. Frota, J. Butler, S. Correia, C. Severino, M. Vigário: Pitch first, stress next: Prosodic effects on word learning in an intonation language	S. Baek: Locus of difference in sentence processing between native and second language	R. Montana, L. Abarbanell, P. Li: Revisiting the plasticity of human spatial cognition
3:00	**ATTENDED POSTER SESSION I (Metcalf Large and Ziskind Lounge)**		
4:15	D. Yurovsky, L. Smith, C. Yu: Statistical Word Learning from a First-Person Perspective	S. van der Feest, E. Johnson: Input driven differences in Dutch toddler's perception of a disappearing phonological contrast	M. Sutton, M. Fetters, J. Lidz: Parsing for Principle C at 30 Months
4:45	T. Poepsel, C. Gerfen, D. Weiss: Context, mutual exclusivity and the challenge of multiple mappings in word learning	K. Gonzales, R. Gomez, L. Gerken: 12-month-olds use voice and temporal cues to extract structure that only one of two speakers produces consistently	S. Nitschke, S. Brandt, E. Kidd: Experience and Processing of Relative Clauses in German
5:15	B. Malt, E. Ameel, G. Storms: Comprehension and Later Lexical Development	S. Jiménez, S. Creel: Factors affecting talker recognition in preschoolers and adults	N. Hahn, J. Snedeker: 6-9 year olds use prosody to resolve temporary syntactic closure ambiguity
5:45	**DINNER BREAK**		
7:45	**KEYNOTE ADDRESS: (Metcalf Large)** "What's in a word? Links between linguistic and conceptual organization in infants and young children" Sandra Waxman, Northwestern University		
9:00	**UNATTENDED POSTER SESSION I (Metcalf Large and Ziskind Lounge)**		

Time	Session A (Metcalf Small)	Session B (East Balcony)	Session C (Conference Auditorium)
10:00 - 6:00	**BOOK EXHIBITS**		
9:00	A. Finn, C. Hudson Kam: When it hurts (and helps) to try: What happens when adult learners try to learn novel statistics to segment words and categories	L. Dominguez, H. Song, G. Hicks: Reanalysing the L2 acquisition of English anaphoric binding: A feature-based approach	C. Noble, C. Rowland, A. Chan: Competition all the way down: How children learn word order cues to sentence meaning
9:30	C. Kurumada, S. Meylan, M. Frank: Statistical word segmentation of Zipfian frequency distribution	K. Park, B.D. Schwartz: L1-Korean L2ers' Sensitivity to Givenness in the English Dative Alternation	B. Ambridge: The retreat from overgeneralization: Frequency, verb semantics or both?
10:00	C. Lignos: The Journey to Word Segmentation	J. Culbertson, P. Smolensky, G. Legendre: Statistical learning constrained by syntactic biases in an artificial language learning task	G. Krajewski, A. Siebenborn, E. Lieven: The shape of frequency distribution and novel construction learning
10:30	**BREAK (Ziskind Lounge)**		
11:00	K. Graf Estes, S. Bowen: Constraints on infant word learning: The effects of stress and phonotactic patterns	R. Orfitelli: 'Experiencing' a slight delay: Intervening arguments and the acquisition of subject-to-subject raising	J. Rothman, D. Pascual y Cabo, A. Lingwall: Applying the Interface Hypothesis to Heritage Speaker (HS) Acquisition: Evidence from Spanish Mood
11:30	C. Fennell, K. Byers-Heinlein: Monolingual and Bilingual Infants' Use of Atypical Phonetic Information in Word Learning	S. Kirby: Raising is Birds, Control is Penguins: Solving the learnability paradox	D. Lillo-Martin, H. Koulidobrova, R. de Quadros, D. Chen Pichler: Bilingual Language Synthesis: Evidence from Wh-questions in Bimodal Bilinguals
12:15	**LUNCH SYMPOSIUM: (Metcalf Large)** "Morphology in second language acquisition and processing" Harald Clahsen, University of Essex/University of Potsdam Holger Hopp, University of Mannheim Donna Lardiere, Georgetown University Silvina Montrul (organizer), University of Illinois at Urbana-Champaign		
2:15	L. Mesite, J. Dixon, S. Tek, D. Fein, L. Naigles: Early grammatical growth over time distinguishes two subgroups of children with ASD	A. Perez-Leroux, A. Castilla, D. Massam, S. Bejar: The acquisition of NP recursion in English-speaking children	J. Sullivan, K. Davidson, D. Barner: Conversational implicature in 3- to 8-year-old children
2:45	J. Park, S. Tek, D. Fein, L. Naigles: Early joint attention predicts children's subsequent performance on preferential looking tasks	K. Sugisaki: A Constraint on Argument Ellipsis in Child Japanese	U. Minai, N. Takami: Semantic and Pragmatic Meaning of the Existential Quantifier *Some* in Second Language Acquisition
3:15	**ATTENDED POSTER SESSION II (Metcalf Large and Ziskind Lounge)**		
4:30	M. Connor, C. Fisher, D. Roth: The Origins of Syntactic Bootstrapping: A Computational Model	T. Sano: Abstract CP/IP configuration in child Japanese	D. Tanner, J. Nicol, J. Herschensohn, L. Osterhout: Electrophysiological markers of interference and structural facilitation in native and nonnative agreement processing
5:00	C. Yang: Usage Uneveness in Child Language Supports Grammar Productivity	S. Unsworth: Testing for crosslinguistic influence and exposure effects in the bilingual acquisition of specific indefinite objects	Z. Wen, B.D. Schwartz: Task effects in L2 online processing of subject verb number agreement
5:45	**PLENARY ADDRESS: (Metcalf Large)** "Bilingual development and language assessment" Cornelia Hamann, University of Oldenburg		
7:00	**UNATTENDED POSTER SESSION II (Metcalf Large and Ziskind Lounge)**		

SUNDAY, NOVEMBER 7

Time	Session A (Metcalf Small)	Session B (East Balcony)	Session C (Conference Auditorium)
9:00	C. Cantiani, M.T. Guasti, P. Perego, M.L. Lorusso: Impaired inflectional morphology in children with Developmental Dyslexia: converging evidence from behavioral and electrophysiological measures	J. Hartshorne, D. Barner: How do children interpret number words before learning their exact meanings?	B. Pajak, R. Levy: Distributional learning of L2 phonological categories by listeners with different language backgrounds
9:30	Y.H. Yu, N. Choudhury, C. Cantiani, V.L. Shafer, , M. MacRoy-Higgins, R.G. Schwartz, A. A. Benasich: Electrophysiological correlates of picture-word processing in three-to-seven year old non-verbal children with Autism	K. Syrett, H. Baker, A. Kalkstein, J. Musolino: Let's disambiguate sentences *together*: What children know about the semantics of *together*, and where pragmatics steps in	C. Quam, S. Creel: What's in a Rise? Effects of Language Experience on Interpretation of Lexical Tone
10:00	M. Maguire, D. Ogiela, G. Magnon, B. Delarosa, L. Sides: Developmental differences in noun-object and verb-action identification: An Event Related Potentials study	N. Katsos et al**: To what extent does the development of conceptual categories depend on language?	R. Mayberry, M. Hatrak, H. Morgan: Age of Acquisition Affects the Learning of Phonological Structure in ASL
10:30	**BREAK (Ziskind Lounge)**		
11:00	C. Ngon, A. Martin, E. Dupoux, S. Peperkamp: Words, words, and non-words: Learning a pseudo-lexicon during the first year of life	N. Vasić, V. Chondrogianni, T. Marinis, E. Blom: Production and processing (a)symmetries in the acquisition of gender by Dutch and Greek sequential bilingual children	L. Shneidman, S. Goldin-Meadow: Mayan and US Caregivers Simplify Child Directed Speech
11:30	A. Mitchel, D. Weiss: Visual speech segmentation: Using facial cues to locate word boundaries in continuous speech	J. Alemán Bañón, A. Gabriele, R. Fiorentino: Examining development in second language processing: An ERP investigation of gender and number agreement in L2 Spanish	E. Cartmill, T. Medina, B. Armstrong, S. Goldin-Meadow, J. Trueswell, L. Gleitman: Quality and Quantity of Early Word Learning Environments Together Predict Child Vocabulary Size at 50 Months
12:00	C. Lew-Williams, J. Saffran: All words are not created equal: Expectations about word length guide infant statistical learning	B. Lopez Prego, A. Gabriele: Examining the nature of variability in gender and number agreement in native and nonnative Spanish	A. Weisleder, A. Fernald: Richer language experience leads to faster understanding: Language input and processing efficiency in diverse groups of low-SES children
12:30	T. Mintz: Fifteen-month-old infants can categorize words using distributional information alone and retain the categories after 1 week	C. Renaud: Pronoun resolution in L2 French: Processing evidence for the role of (grammatical) gender	E. Ko: Nonlinear development of speaking rate in child-directed speech

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ALTERNATES

A. Stiller, N. Goodman, M. Frank	Ad-hoc scalar implicature in adults and children
N. Parr, R. Breheny	Semantic bootstrapping and the role of meta-cognition
L. Stites, Ş. Özçalışkan	Teasing apart the role of cognitive and linguistic factors in children's emerging metaphorical abilities
A. Terzi, T. Marinis, K. Francis, A. Kotsopoulou	Crosslinguistic differences of autistic children's reflexive pronouns: English vs. Greek
T. Gruter, N. Hurtado, A. Fernald	Interpreting object clitics in real-time: eye-tracking evidence from 4-year-old and adult speakers of Spanish
K. Skoruppa, F. Pons, S. Peperkamp, L. Bosch	Win it or lose it? The development of word stress perception in French and Spanish infants
M. Pirvulescu, A. Perez-Leroux, Y. Roberge, N. Strik	Clitic production across tasks in young French-speaking children
T. Bonner	Phonotactic Interference and Performance Factors Trump Representational Deficits: Perception and Production of English Inflections by L1 Mandarin Speakers
E. Pagliarini, G. Fiorin, J. Dotlacil	The acquisition of distributivity and plurality
L. Almeida, M. JoãoFreitas, Y. Rose	Prosodic influence in bilingual phonological development: Evidence from a Portuguese-French first language learner
S. Brandt, D. Buttelmann, E. Lieven, M. Tomasello	First and Third Person Perspective in Complement Clauses and Theory of Mind
H. Ahn	The Role of Prosody in Thematic Role Disambiguation in L2 Korean

POSTER SESSION I

Friday, November 4
Metcalf Large and Ziskind Lounge
Posters will be attended from 3:00 PM - 4:15 PM and unattended from 9:00 PM - 9:45 PM

Authors	**Title**
F. Adriaans	The Discovery of Word Boundaries in Variable Input Representations
E. Carrigan, M. Coppola	Communication partners' comprehension of family-based homesign gesture systems
K. Lam, X. Chen	The Contribution of Cognate Awareness and English Orthographic Processing to English-French Bilingual Children's French Literacy Outcomes
J. Bhaskaran, M. Soderstrom	Infants and implicit dependency relationships: The infant *can* show__ preferences
E. Tenenbaum, R. Shah, D. Sobel, B. Malle, J. Morgan	Gaze Following and Attention to Faces in Infancy Predict Language Development
X. Zhao, I. Berent	Are markedness constraints universal? Evidence from Mandarin Chinese speakers
R. Nappa, J. Hartshorne, J. Snedeker	She and Her: Online and Offline Pronoun Comprehension in Children with an ASD
H. MacKenzie, K. Ostergaard, S. Curtin, S. Graham	Is the ability to form word-object associations equivalent to word learning?
M. Coppola, D. Brentari, A. Jung, S. Goldin-Meadow	The acquisition of handling and object handshapes in lexical nouns and classifier predicates in ASL
G. Jarosz, S. Calamaro, J. Zentz	Measures of Frequency and the Acquisition of Syllable Structure in Polish
M. Johnson, J. Boyd, A. Goldberg	Language Generalization in Children with Autism
R. Shi, J. Gao, A. Li	Perception of Lexical Tones in Infants
H. Yeung, L. Chen, J.F. Werker	Early lexical abilities guide phonetic learning in 9-month-old infants
M. Frank, N. Goodman	Learning words by assuming speakers are informative
A. Kowalski, C. Yang	Verb Islands in Child and Adult Language
J. Willits, J. Lany, J. Saffran	Semantic Cues Facilitate Learning and Generalizing Nonadjacent Dependencies
C. Chang	Rediscovering a Childhood Language: A Case Study of Two Korean Adoptees
A. Gagliardi, J. Lidz	The power of the prior: asymmetries in word learning vs. word-class learning
D. Skordos, A. Papafragou	Lexical alternatives improve 5-year-olds' ability to compute scalar implicatures
L. Lakusta, K. Yuschak, J. Batinjane, S. Carey	Foundations of Language Learning: Infants' Categorization of Sources and Goals in Motion Events

POSTER SESSION I

Friday, November 4
Metcalf Large and Ziskind Lounge
Posters will be attended from 3:00 PM - 4:15 PM and unattended from 9:00 PM - 9:45 PM

Authors	**Title**
M. Goldwater, S. Friedman, D. Gentner, K. Forbus, J. Taylor	An Analogical Learning Model of the Development of Thematic Roles & Structural Priming
M. Echelbarger, N. Modyanova, A. Perovic, K. Wexler	Investigation of linguistic endophenotypes as autism spectrum disorders (ASD) classifiers
N. Modyanova, A. Perovic, K. Wexler	Binding in Autism Spectrum Disorders (ASD)
O. Ozturk, M. Krehm, A. Vouloumanos	Sound-Shape Correspondences: Biased?
S.A. Lee, G. Iverson	English and Korean stop productions of monolingual versus bilingual children
J. Viau, B. Landau, A. Papafragou	The development of spatial language: Asymmetries between Containment and Support
S. Geffen, T. Mintz	Seven-month-old English learners can discriminate declaratives and interrogatives
E. Maloney, D. Payne, M. Redford	The Development of Children's Pausing Patterns: Effects of Syntactic Boundary Strength
S. Creel	Mutual Exclusivity in Preschoolers' Processing of Accented Words
A. Cuza, M. Barbosa	Does structural overlap matter? Evidence from object drop in English-Brazilian Portuguese bilinguals
A. Munn, K. Ayres, K. Brewer, K. Torgerson, C. Schmitt	You must be as tall as this line to ride the roller coaster: "*exactly*" readings of "*as*"-comparatives
K. Geraghty, S. Arunachalam, S. Waxman	Two-Year-Olds Rapidly Access Newly-Learned Verb Representations
M. Fedzechkina, T.F. Jaeger, E.L. Newport	Functional biases in acquisition: Language learners restructure input to reduce uncertainty
B. Kim	Processing Relative Clauses in Heritage Korean
J. Ference, S. Curtin	Differential Processing of Rhythm by Infant Siblings of Children with Autism
M. Krehm, A. Buchwald, A. Vouloumanos	The Effect of Variation on Phonetic Category Learning
A. Stiller, N. Goodman, M. Frank	Ad-hoc scalar implicature in adults and children†
L. Stites, Ş. Özçalışkan	Teasing apart the role of cognitive and linguistic factors in children's emerging metaphorical abilities†
T. Gruter, N. Hurtado, A. Fernald	Interpreting object clitics in real-time: eye-tracking evidence from 4-year-old and adult speakers of Spanish†
K. Skoruppa, F. Pons, S. Peperkamp, L. Bosch	Win it or lose it? The development of word stress perception in French and Spanish infants†
N. Parr, R. Breheny	Semantic bootstrapping and the role of meta-cognition†

† Also alternates

POSTER SESSION II

Saturday, November 5
Metcalf Large and Ziskind Lounge
Posters will be attended from 3:15 PM - 4:30 PM and unattended from 7:00 PM - 7:45 PM

Authors	Title
T. Kobayashi, T. Murase	Learning multiple labels for a single object in Japanese children
F. Nihan Ketrez	Harmonic Cues for Speech Segmentation: A Cross-linguistic Corpus Study on Child-directed Speech
K. Byers-Heinlein	Does bilingual infants' input provide consistent cues to the language being spoken?
T. Goro, U. Minai	Conjunction, Disjunction, and Negation in Second Language Acquisition: A Study of L2 English and Japanese
Y.T. Huang, J. Snedeker	Processing and prediction in pragmatic inferencing: Understanding task-dependent effects in the generation of scalar implicatures
R. Mugitani, A. Hayashi	Word-identification and discrimination of Japanese pitch accent in preschoolers
M.J. Gutierrez-Mangado, M.J. Ezeizabarrena	Asymmetry in child comprehension and production of Basque SRs and ORs
P. Brusini, G. Dehaene, A. Christophe	18-month-old toddlers don't utter words but they know where noun and verbs must occur
Ş. Özçalışkan	Do gestures follow speech in bilinguals' description of motion?
T. Okuma	Acquisition of discourse constraints on the use of Japanese null pronouns
K. Gorman, D. Faber	Evidence for schemas from children's English irregular past tense errors
K. Kim, H.Yang	Why "Jisung is play soccer" sounds natural for L2 learners
M. Becker, B. Estigarribia, D. Gylfadottir	*Tough*-Adjectives are Easy to Learn
A. Bentea	Does "Case" Matter in the Acquisition of Romanian Relative Clauses?
A.X. He, J. Lidz	Mapping Intransitive Verbs to Self-Propelled Actions
M.T. Guasti, A. Fabrizio, B. Chiara, V. Mirta, M. Perugini	Production of movement derived structures in Developmental Dyslexia
S. Girlich, E. Lieven, M. Tomasello	Children's production of person and number inflectional transitions in the German verb paradigm
K. Von Holzen, N. Mani	Learning phonemes from faces: The role of speaker identity in non-native phoneme discrimination
L. Koring, H. De Mulder	The relation between linguistic and conceptual development: acquiring evidentiality
M. Anderssen, P. Fikkert, R. Mykhaylyk, Y. Rodina	Dative Alternation in Norwegian Child Language

POSTER SESSION II

Saturday, November 5
Metcalf Large and Ziskind Lounge
Posters will be attended from 3:15 PM - 4:30 PM and from 7:00 PM - 7:45 PM

Authors	Title
M. Tice, E.V. Clark, S.C. Bobb	Taking their time: Access and planning in children's response to questions
H. Kwak	Interpretation of scope ambiguity by Korean-speaking learners of English: The case of numerically quantified NPs and negation
B. Sumer, I. Zwitserlood, P. Perniss, A. Ozyurek	Development of locative expressions by Deaf and hearing Turkish children: Are there modality effects?
E. Valenzuela, J. Liceras, L.P. Lopez	Ambiguous anaphora in the L2 English and L2 Spanish
J. Roberts, E. Altenberg, H. Scarborough	Evaluating syntactic production in young children with and without language delays
E. Fleischhauer, H. Clahsen	Speeded Production of German Past Participles in Children and Adults
I. Gómez Soler	Acquiring Spanish Psych-Verbs: Maturation or Continuity?
E. Blom, J. Paradis	Past tense marking in English L2 children with and without SLI: Evidence for a Usage-Based approach
M. Khan, A. Geojo, S. Wang, J. Snedeker	Spontaneous verbal encoding of visual objects in 24 month olds
K. Kelly	The Influence of Attachment on Mother-Child Narrative Co-Construction and Young Children's Narrative Ability
M. Imai, M. Asano, M. Arata, S. Kita, H. Okada, K. Kitajo, G. Thierry	Eleven month-old infants detect sound symbolism: Evidence from an ERP study
D.M. Gomez, S. Benavides-Varela, R.A. H. Bion, F. Macagno, M. Nespor, I. Berent, J. Mehler	Sonority hierarchy in one-month-old infants' brains
E. Keuleers, B. Ambridge	Modelling the acquisition of the English past-tense
A. Terzi, T. Marinis, K. Francis, A. Kotsopoulou	Crosslinguistic differences of autistic children's reflexive pronouns: English vs. Greek†
M. Pirvulescu, A. Perez-Leroux, Y. Roberge, N. Strik	Clitic production across tasks in young French-speaking children†
E. Pagliarini, G. Fiorin, J. Dotlacil	The acquisition of distributivity and plurality†
L. Almeida, M, João Freitas, Y. Rose	Prosodic influence in bilingual phonological development: Evidence from a Portuguese-French first language learner†
S. Brandt, D. Buttelmann, E. Lieven, M. Tomasello	First and Third Person Perspective in Complement Clauses and Theory of Mind†
H. Ahn	The Role of Prosody in Thematic Role Disambiguation in L2 Korean†

† Also alternates

Session A--Metcalf Small

Lexical pre-exposure facilitates the use of cross-situational information in verb learning

Rose Scott, University of California Merced
Cynthia Fischer, University of Illinois - Urbana-Champaign

While 31-month-olds can use cross-situational information to identify a verb's referent, this ability is limited. Here we examined whether pre-exposure to verbs and their syntactic contexts can support cross-situational verb learning. 25-month-olds (who could not identify verbs' referents via cross-situational observation when tested without pre-exposure) watched videos showing two women conversing using four made-up verbs in transitive sentences. Next, children saw a series of trials in which pairs of transitive verbs accompanied pairs of object-directed actions. Children looked longer at the action consistently paired with each verb, suggesting that the pre-exposure enabled them to use cross-situational information. However, when children saw dialogues containing the verbs in *intransitive* sentences and were then tested with *transitive* sentences accompanied by object-directed actions, they failed to identify the verbs' referents. These and control results suggest that linking a new verb's sound-pattern to useful subcategorization information facilitates children's use of cross-situational information in verb learning.

Session B--East Balcony

Tense and Truth in Children's Question Answering

Jill de Villiers, Smith College
Tom Roeper, University of Massachusetts - Amherst
Ellen Harrington, Smith College
Elizabeth Gadilauskas, Smith College

Young children mis-answer long distance wh-questions with a false embedded tensed clause, with the truth. Why? The TENSE marker commits the sentence to being a proposition, unlike an infinitive, encouraging completion of interpretation at the first phase by the child. In tensed but not infinitival complements, preschool children are predicted to answer wh-questions with the lower verb only in tensed cases and if they employ Partial Movement, to answer the medial wh question in a yes/no question with the lower clause. 16 stories, four of each type, all using the verb *say,* were presented to each child in the form of a picture book. 33 children were tested aged 3-5 with the mean age of 4;3. Errors of answering the LD question with reality were more common for tensed complements than for infinitivals. Children answered the medial only in connection to the lower clause (a reality answer) for tensed clauses.

Session C--Conference Auditorium

Emergence of the functional specialization of consonants and vowels in language acquisition

Jean-Remy Hochmann, Harvard University
Silvia Benavides-Varela, Scuola Internazionale Superiore di Studi Avanzati (SISSA)
Marina Nespor, University of Milan - Bicocca
Jacques Mehler, Scuola Internazionale Superiore di Studi Avanzati (SISSA)

Linguistic and experimental evidence suggest that consonants are more important for the lexicon, and vowels are more important for learning abstract structures. In a series of experiments, we asked when these biases emerge in the course of language acquisition. We tested 12-month-olds, at the onset of lexical acquisition, and 6-month-olds who just started acquiring the phonology of their language. In a series of experiments, we taught infants to predict the location of a toy's appearance after hearing speech sequences. Twelve-month-olds relied mainly on consonants when they needed to base their predictions on words, but they were better at using vowels when they needed to base their predictions on the abstract structure of the speech sequences. Six-month-olds, in contrast, appeared to always rely on vowels. Further results suggest that younger infants may not make a categorical distinction between consonants and vowels. We discuss the possible origins of these developmental changes.

Notes

Session A--Metcalf Small

Can adverbs call attention to manner of motion for 2-year-olds learning verbs?

Sudha Arunachalam, Boston University
Kristen Syrett, Rutgers University - New Brunswick
Sandra Waxman, Northwestern University

Recent work has documented that verb learning poses a special challenge to young learners, but that informative linguistic contexts can be a powerful information source supporting learning. The current study investigates a poorly studied linguistic cue to verb meaning: adverbs. Adverbs encode information about the event denoted by the verb, such as the manner in which it occurs. Moreover, adverbs appear in the salient utterance-final position and have readily identifiable –ly morphology. We hypothesized that a common manner-of-motion adverb ("slowly") would draw children's attention to the action being performed and, consequently, help them identify the verb's meaning. We taught 2-year-olds novel verbs in sentences containing an adverb ("slowly" or "nicely"). The results showed that "slowly," but not "nicely," supported learning. This finding provides the first evidence that adverbs facilitate verb learning in 2-year-olds, and points the way for research exploring what properties of particular adverbs make them an effective cue.

Session B--East Balcony

Variable Input: What Sarah reveals about the link between the RI Stage and the use of non-agreeing *don't*

Karen Miller, Pennsylvania State University

Two recent proposals link the use of non-agreeing *don't* to the root infinitive (RI) stage. Guasti & Rizzi (2002) argue for a misset parameter involving how agreement is spelled out. Schütze proposes that Infl is underspecified in child language and that *do* surfaces to support the contracted clitic/affix *n't*. Both proposals rely on the Sarah (Brown 1973) and Nina (Suppes 1974) corpora and neither proposal took into account Sarah's parents' use of nonstandard, non-agreeing *don't*. In this paper we show that **the RI stage and non-agreeing *don't* are not part of the same phenomenon for Sarah, even though it is for Nina.** The difference lies in the input the children were exposed to: Sarah was exposed to an input with variable amounts of non-agreeing *don't* (Labovian-type variation 1994), while Nina wasn't.

Notes

Session C--Conference Auditorium

Asymmetry in consonant/vowel processing: evidence from early word segmentation

Léo-Lyuki Nishibayashi, University of Paris V
Thierry Nazzi, CNRS and University of Paris V

Many studies have shown that consonants are more important than vowels for lexical learning/processing from 16 months onward. Does this consonant bias emerge after infants have learned a sizeable lexicon, or is it present earlier in development? Accordingly, we explored the phonetic specificity of early segmented word forms in French-learning 8-month-olds. Infants were familiarized with passages containing CV target words, and then tested on repetitions of control words versus either target words, consonant mispronunciations of the target words or vowel mispronunciations. A segmentation/recognition effect was found for the target words and vowel mispronunciations, but not for the consonant mispronunciations. These findings establish that by 8 months, word form representations are specified in terms of consonants, but are either not specified in terms of vowels, or infants tolerate vowel mispronunciations more than consonant mispronunciations. The consonant bias at the lexical level is thus present before infants have built a sizeable lexicon.

Session A--Metcalf Small

Preschoolers prefer to map novel transitive verbs to events with spatiotemporal features that mark causation

Melissa Kline, Massachusetts Institute of Technology
Jesse Snedeker, Harvard University
Laura Schulz, Massachusetts Institute of Technology

2-year-olds' choices of novel verb referents are affected by syntax (Naigles, 1990). Previous studies examining the connection between transitive syntax and caused motion have used broad, categorical scene contrasts. We manipulate individual event features to determine whether cues influencing causal perception also drive verb interpretation; this is predicted if children associate transitive syntax with causation. Alternately, children might require multiple cues, or map transitive syntax to any event with asymmetric participant roles. Study 1 manipulated causal continuity, inserting a spatiotemporal gap between agent and patient. Study 2 manipulated temporal order: in causal scenes, agent actions preceded outcomes; in the controls, outcomes preceded actions. In both studies, 3 and 4-year-olds who heard transitive prompts preferentially chose causal scenes. These results show that preschoolers' expectations about transitive verbs are sensitive to causality. This paradigm can be used to study children's syntactic-semantic expectations in greater detail across a range of syntactic constructions.

Session B--East Balcony

The acquisition of tense in 17 languages

Fabrizio Arosio, University of Milan - Bicocca
Bart Hollebrandse, University of Groningen and Center for Language and Cognition Groningen
*Wolfgang Dressler, University of Vienna**

Different temporal forms can be used to describe one temporal relation (IT: *camminava* vs. *camminò*, walk-past-imperfective vs. walk-past-perfective); one form can be used to describe different temporal relations (D: *life*, walk-past-imperfective vs. walk-past-perfective); these relations concern objects not directly perceivable. This can make their acquisition a complicated task. We tested 355 children, 5 years-old, on tense comprehension in 17 languages. Participants watched movies where a protagonist walks along a road performing the same action at different locations (Wagner 2001). The test-questions were of the form: *Where V-past?; Where V-present?*; *Where V-future?* We found differences across languages ($\chi2(16)=100.14$, $p<.0001$) and tenses ($\chi2(16)=100.14$, $p<.0001$) and an interaction between the two ($\chi2(21)=103.31$, $p=.0203$). These differences concerned past ($\chi2(5)=53.08$, $p<.0001$) and future ($\chi2(5)= 57.78$, $p<.0001$) tenses. We argued that children acquire tense earlier in languages where we find small domains of synonymy and ambiguity in conveying temporal meanings than in languages with larger domains.

*Complete list of authors can be found on page 10

Session C--Conference Auditorium

Evidence of phonological feature constraints on the acquisition of phonological dependencies*

Nayeli Gonzalez Gomez, University of Paris V
Thierry Nazzi, CNRS and University of Paris V

The present study used HPP to explore whether the perceptual labial-coronal bias found in French-learning 10-month-olds applies (a) to all sounds (corresponding to an overall LC bias in the French lexicon), (b) differently to different manners of articulation (corresponding to an overall LC bias for plosives and nasals versus an overall CL bias for fricatives), or (c) is learned for each pair of consonants separately (by contrasting results for individual pairs of plosives and fricatives with an LC versus CL bias). The results show an LC bias for nasals and for all plosive experiments, but a CL bias for all fricative experiments, thus establishing that this perceptual bias is acquired at the level of classes of consonants defined by their manner of articulation. These results extend previous findings on the influence of "natural" classes on infants' learning of artificial phonotactic regularities to the acquisition of native language phonotactic regularities.

*The talk will be given by Thierry Nazzi

Notes

Session A--Metcalf Small

Development of parsing ability interacts with grammar learning: Evidence from Tagalog and Kannada

John Trueswell, University of Pennsylvania
Daniel Kaufman, Endangered Language Alliance
Alon Hafri, University of Pennsylvania
Jeffrey Lidz, University of Maryland - College Park

Children under six years have difficulty recovering from misinterpretations of ambiguity, often preferring their initial interpretation despite later disambiguating evidence. Here we show this 'kindergarten-path effect' impacts grammar acquisition. We re-examined the observation that Kannada-speaking children have difficulty interpreting causative verb morphology, which has been argued to derive from a universal reliance on the number of NPs to determine argument structure. Kannada, however, is a verb-final language, with causative morphology arriving after other linguistic cues to causativity (e.g., NP number). Children's insensitivity to causative morphology might instead reflect an inability to recover from garden-paths. We compared Kannada to Tagalog, a verb-initial language where causative morphology precedes argument NPs. In an act-out task, Tagalog-speaking children (N=47) showed sensitivity to causativity whereas Kannada-speaking children (N=20) did not. Thus the order of linguistic cues impacts interpretation and perhaps acquisition, such that cues that guide meaning are more effective than cues that revise meaning.

Session B--East Balcony

How do sequential bilingual children perform on non-word repetition tasks?

Sharon Armon-Lotem, Bar Ilan University
Shula Chiat, City University, London

Non-word repetition (NWR) tests morphophonological processing as well as short-term memory, both of which are impaired in children with language impairment (LI). Neither is expected to be influenced by bilingualism. However, success on NWR is influenced by wordlikeness of items and has been correlated with vocabulary size, which is often more restricted in the second language of sequential bilingual children and might yield a difference between monolinguals and bilinguals and between the first and second language. The present study tests preschool children: Russian-Hebrew bilinguals with at least a year of exposure to Hebrew, as well as Hebrew and Russian monolinguals, with items that vary in length, clusterhood and wordlikeness. Our findings suggest that the level of success on NWR is not affected by the bilingualism of our participants and therefore has potential for identifying LI in both populations. Differences between the two languages are attributed to a linguistic difference rather than different proficiency levels.

Notes

Session C--Conference Auditorium

Generalizing without encoding specifics: Infants infer phonotactic patterns on sound classes

Alejandrina Cristia, Laboratoire de Sciences Cognitives et Psycholinguistique (EHESS-DEC(ENS)-CNRS)
Sharon Peperkamp, CNRS

In languages, patterns often concern sets of sounds that have the same phonological features. Learners may acquire such regularities through a *serial* process, learning how each individual sound behaves, and later inducing the common featural description; or in a *parallel* fashion, if patterns are tracked in terms of sounds and features simultaneously. To adjudicate between these hypotheses, two groups of six-month-olds were exposed to a sound pattern instantiated in a subset of a class (e.g., the voiced obstruents /b,g,z/). The first group later showed a robust preference for words that broke the feature-based pattern (e.g., /t,f,ʃ/) over others containing untrained legal sounds (i.e., /d,v,ʒ/). In contrast, a second group showed no preference between items containing legal sounds (/d,v,ʒ/) and novel items containing the trained sounds (/b,g,z/). Thus, infants could more easily abstract a feature-based pattern than encode it in terms of the individual sounds, providing evidence against the *serial* model.

Session A--Metcalf Small

Information Packaging for Causative Events: Cross-Linguistic Differences and Implications for Language Production and Attention

Ann Bunger, University of Delaware
John Trueswell, University of Pennsylvania
Anna Papafragou, University of Delaware

This study investigates the implications of language-specific constraints on event packaging for the online inspection and description of causative events by adult and preschool-aged speakers of English and Greek. English-speaking and Greek-speaking adults, 3-year-olds, and 4-year-olds viewed and described causative events in an eyetracking study. Data were assessed for mention-of and looks-to the means and result subevents of causative targets. The results demonstrate crosslinguistic differences in the informational content of causative event descriptions: overall, Greek-speakers were more likely than English-speakers to omit subevents from causative event descriptions. Developmental changes in the ability to efficiently package information about complex events were also evident: in both language groups, adults were more likely than children to mention both subevents, even when this required a more complex packaging strategy. Finally, the results show that, for both adults and children, preparing to speak changes the way events are inspected, shifting attention toward to-be-encoded event elements.

Session B--East Balcony

Word and Sound Processing in Bilingual Preschoolers

Melinda Woodley, University of California - Berkeley

Within the phonological acquisition literature, it has been suggested that increased competition between word forms may lead to segmentally-based lexical representations (e.g. Charles-Luce & Luce, 1995). The present study therefore tested the hypotheses that 1) young children would identify words from high density phonological neighborhoods more slowly than words from low density neighborhoods, and 2) any such competition between word forms would be evident *prior* to the advent of processing facilitation due to segmental frequency. Contrary to predictions, reaction times indicated no significant competition between word forms, yet native English children's repetition errors resulted in phonotactically more probable sequences. Simultaneous bilingual children patterned with monolinguals regarding their repetition errors, but with sequential bilinguals regarding their response times. The results are interpreted with respect to Bialystok's "analysis and control" framework, and I argue that both amount and type of English exposure affect children's word and sound processing strategies.

Session C--Conference Auditorium

The Devil in the Details: Underspecification in Infants' and Adults' Lexical Representations

Jie Ren, Brown University
James Morgan, Brown University

Theories of underspecification have claimed that lexical representations are *selectively* detailed, with certain unmarked feature values left blank. This predicts asymmetries in processing. Tokens of /pan/ and /kan/ can putatively activate the lexical entry /tan/, but tokens of /tan/ will not activate lexical entries /pan/ or /kan/. We examined infants' and adults' online sensitivities to two types of mispronunciations. Some involved changes from underspecified to specified consonants (/**d**^k/→/**g**^k/), others involved changes from specified to underspecified consonants (/**b**æθ/→/**d**æθ/). In experiments manipulating onsets and codas, 19-month-olds showed significant effects of mispronunciations, but no asymmetries attributable to underspecification. Results from adults were similar: sensitivity to mispronunciations but no interactions due to direction of mispronunciation. In assessments of quantity and quality (selective specification), infants' lexical representations appear to be as detailed as those of adults. Our findings suggest a striking developmental continuity in phonological representational across development.

Notes

Session A--Metcalf Small

Korean children's sensitivity to case markers when interpreting a novel verb

Woo-yeol Lee, Yonsei University
Hyun-joo Song, Yonsei University

Case markers can be a more reliable cue to sentence structures than the number of noun phrases in languages like Korean which permit argument omission. We examined Korean children's sensitivity to case markers when understanding sentence meaning. As they watched two videos side-by-side, 21- and 24-month-old children listened to sentences including one noun phrase and one novel verb. The noun phrase in the sentence was marked by either a nominative or an accusative case marker. In one video, two characters acted independently of each other. The other video showed a caused-action event. The results showed that 24-month-olds looked reliably less at caused-action than at independent-action events in the intransitive condition whereas they looked at the two events about equally in the transitive condition. Children 21 months old did not show such pattern. The results are discussed in terms of the development of children's sensitivity to language-universal and language-specific structural cues.

Session B--East Balcony

The what, the why and the how: Second language vocabulary development from reading

Irina Elgort, Victoria University of Wellington

This study investigates incidental acquisition of vocabulary from reading in a second language (L2). After reading an authentic text, adult participants completed three priming tasks that probed their knowledge of orthographic, phonological and semantic representations of the target items (pseudowords), and were also given two 'traditional' tests of explicit knowledge of these items (active recall of form and meaning). Mixed effects modeling with random effects for participants and items was used in data analyses. Experimental results show that development of all three types of lexical representations was triggered through reading, but that the development of formal-lexical representations was more advanced than that of lexical-semantic representations. Response latencies and accuracy were modulated by such *text factors* as item saliency and frequency of occurrence, and by such *reader factors* as L2 proficiency, vocabulary size and age of L2 acquisition, as well as by their text comprehension levels and use of vocabulary strategies.

Notes

Session C--Conference Auditorium

Voice less, front more. On the development of knowledge of voicing and vowel alternations in German nouns by 5 year-olds, 7 year-olds and adults

Ruben van de Vijver, University of Potsdam
Dinah Baer-Henney, University of Potsdam

We present the results of three Wug tests with which we studied the production of voicing and vowel alternations in German noun nonces by 5 year-olds, 7 year-olds and adults. The proportion of voicing alternations decreases from 5 year-olds to adults, whereas the proportion of vowel alternations increases from 5 year-olds to adults. Alternations in nonces are the result of markedness constraints, and we propose that there are two kinds of markedness constraints: phonetically-based markedness constraints and statistically-based markedness constraints. The phonetically-based markedness constraints are deduced by learners on the basis of their knowledge of phonetic difficulty. The statistically-based constraints are based on pairs of related specific lexical items. The phonetically-based constraints are more general and will cause overgeneralizations of alternations. This overgeneralization is constrained by statistically-based constraints that are more narrowly defined. This account predicts overgeneralization of phonetically-based alternations in smaller lexicons and lexical frequency matching in larger lexicons.

Session A--Metcalf Small

Perception and weighting of prosodic boundary cues in eight-month-old German infants

Caroline Schroeder, University of Potsdam
Julia Holzgrefe, University of Potsdam
Isabell Wartenburger, University of Potsdam
Barbara Hoehle, University of Potsdam

Infants' perception of the three main prosodic boundary pitch cues, final lengthening and pause has been shown to differ crosslinguistically (Seidl, 2007; Johnson & Seidl, 2008). Using the headturn preference procedure we explored how German 8-month-old infants weight prosodic boundary cues. We used sequences of coordinated names that either contained an internal prosodic boundary *[Moni und Lilli]IP # [und Manu]* or did not contain a boundary *[Moni und Lilli und Manu]*. Our results show that infants perceived the boundary when all three prosodic cues were present (Experiment 1) as well as when only pitch and final lengthening (Experiment 2) signaled the boundary. Thus, pause was not a necessary cue. Interestingly, a shift in preference occurred from a novelty effect in Experiment 1 to a familiarity effect in Experiment 2. We assume that fewer cues increase the task difficulty which in turn leads to a familiarity effect (Hunter & Ames, 1988).

Session B--East Balcony

The role of islands in processing English as a second language

Eunah Kim, University of Illinois - Urbana-Champaign

This study investigates how island constraints influence L2 processing. Native speakers of English and Korean-speaking L2 learners of English participated in an eye-movement monitoring task, which examined the role of two different islands (subject island with an infinitival complement vs. subject island with a relative clause modifier) in blocking the usual 'active' filler-gap association. First-pass reading times suggest that native speakers are sensitive to the difference between the two islands at an early stage of processing, establishing filler-gap dependency within the former, but not within the latter (cf, Phillips, 2006). L2 learners, however, formed filler-gap dependency within both islands, potentially suggesting that they did not rely on grammatical information at an early stage of processing. Possible roles of grammatical knowledge and processing demands are discussed.

Session C--Conference Auditorium

Acquisition of spatial language in American Sign Language is linked to spatial cognition

Jennie Pyers, Wellesley College
Jenny Lu, Wellesley College
Rachel Magid, Wellesley College
Dedre Gentner, Northwestern University
Karen Emmorey, San Diego State University

ASL signers typically do not describe spatial relations with prepositions but rather use classifier constructions that iconically map real world spatial relations onto the relative placement of the hands. Such constructions are typically mastered after age five. We hypothesized that the acquisition of these constructions depends on the development of spatial mapping abilities, which hearing children do not master until age five. We tested 11 ASL-English bilingual deaf children (M_{age}=5.3ys) on nonlinguistic spatial mapping and assessed their production and comprehension of spatial language. Children who produced more spatial classifier constructions had significantly stronger spatial mapping abilities than children who primarily produced prepositions. We suggest that this relationship between spatial language and cognition is specific to sign languages and reflects the fact that the production of spatial classifiers is, itself, a spatial mapping task requiring the understanding that the relative position of objects maps onto the relative position of the hands.

Notes

Session A--Metcalf Small

Pitch first, stress next: Prosodic effects on word learning in an intonation language

Sónia Frota, University of Lisbon and Laboratório de Fonética & Lisbon Babylab (CLUL/FLUL)
Joseph Butler, University of Lisbon and CLUL/FLUL
Susana Correia, University of Lisbon and CLUL/FLUL
Cátia Severino, University of Lisbon and CLUL/FLUL
Marina Vigário, University of Lisbon and CLUL/FLUL

The acquisition of phonology requires learning to interpret phonetic variation. Cross-linguistically, prosodic properties may vary both in their acoustic correlates and the phonological domains they signal. Stress in European Portuguese is a word-level property and pitch signals phrasal-level meanings, like in English, but pitch accents are not a cue to stress. Using an eyegaze-based procedure, we examined whether EP-young learners were sensitive to the penult/final word stress contrast and to the declarative/interrogative pitch contrast, in a word learning task. Results show that 1 year-olds are sensitive to the pitch contrast, but sensitivity to pitch decreases with age whereas sensitivity to stress increases, emerging at 2- and becoming well established at 3-years of age. These results suggest that children start to constrain their hypotheses about lexical prosody after 2;00, by learning to disregard pitch contour variation as relevant to lexical meaning and to interpret stress variation as lexically meaningful.

Session B--East Balcony

Reanalysis as a locus of difference between native and second language sentence processing

Soondo Baek, University of Illinois - Urbana-Champaig

Research on monolingual readers shows that object-extracted relative clauses (OR) are harder to comprehend than subject-extracted ones (SR), and this OR-difficulty is modulated by noun animacy (e.g., *the movie that the director watched* is easier than *the director that the movie pleased*). Traxler et al. (2002) attribute these results to an initial SR-preference and the modulating effect of noun animacy on the relative difficulty of reanalysis to OR: Animate subjects of ORs facilitate reanalysis because animate nouns are typically good subjects/agents. A series of self-paced reading experiments was conducted with native English speakers and adult L1-Korean L2-English learners processing English relative clauses with various animacy configurations. The results from native speakers were consistent with Traxler et al.'s explanation. The results from L2 learners indicated that they are in many ways native-like in L2 sentence processing but differ from native speakers in the ability to revise a plausible initial analysis.

Notes

Session C--Conference Auditorium

Revisiting the plasticity of human spatial cognition

Rachel Montana, Princeton University
Linda Abarbanell, Harvard University
Peggy Li, Harvard University

In a recent study by Haun et al. (2011), Dutch-speaking children who prefer an egocentric (left/right) reference frame when describing spatial relationships, and Hai||om-speaking children who use a geocentric (north/south) frame were found to vary in their capacity to memorize small-scale arrays using their language-incongruent system. In two experiments, we reconcile these results with previous findings by Li et al. (2011) which showed that English (egocentric) and Tseltal Mayan (geocentric) speakers can flexibly use both systems. In Experiment 1, attempting to replicate Haun et al., we found that English- but not Tseltal-speaking children could use their language-incongruent system. In Experiment 2, we demonstrate that Tseltal children can use an egocentric system when instructed nonverbally without left/right language. We argue that Haun et al.'s results are due to the Hai||om children's lack of understanding of left/right instructions and that task constraints determine which system is easier to use.

Session A--Metcalf Small

Statistical Word Learning from a First-Person Perspective

Daniel Yurovsky, Indiana University
Linda Smith, Indiana University
Chen Yu, Indiana University

Many modern theories of word learning -- especially computational models -- treat learning a word's meaning as a problem of tracking object co-occurrence. However, recent arguments question a key assumption of these theories: that the ability to track co-occurrence statistics scales up from the lab to the real world. To understand the input from which young children must learn language, we recorded naturalistic parent-child interactions simultaneously from a tripod-mounted camera and from a camera low on each child's forehead. The recorded naming events were presented to adult participants in a series of Human Simulation Paradigm experiments designed to assess the complexity of real-world naming events, and the plausibility of learning from cross-situational statistics. Results show that learning across ambiguous events is possible, especially from a first-person perspective, but also that ambiguity increases predictably as parent-child interactions progress. These findings point to a middle ground between winner-take-all hypothesis-testing and cross-situational statistics.

Session B--East Balcony

Input driven differences in Dutch toddler's perception of a disappearing phonological contrast

Suzanne van der Feest, University of Texas - Austin
Elizabeth Johnson, University of Toronto

How does phonological development in children exposed to two dialects compare to children exposed to a single dialect? We use a Language-Guided Looking Procedure to examine phonological development in children naturally exposed to either one or two dialectal variants of a single language: Dutch. Both dialects have a voicing contrast in word-initial stops. Only one maintains a voicing contrast in word-initial fricatives. When a contrast is not consistently maintained, toddlers could learn to treat it as allophonic; or they could learn to adjust category boundaries depending on which region the speaker they hear is from. We investigated this by testing Dutch 24-month-olds' perception of stop and fricative voicing. Our results show that children exposed to mixed input can adapt their lexical processing strategies for different speakers; in addition, we shows that exposure to a speaker who naturally produces fricative voicing contrasts can prompt toddlers to attend to fricative voicing mispronunciations.

Session C--Conference Auditorium

Parsing for Principle C at 30 Months

Megan Sutton, University of Maryland - College Park
Michael Fetters, University of Maryland - College Park
Jeffrey Lidz, University of Maryland - College Park

Previous research has shown that by 30 months children begin to show adult-like knowledge of Principle C, correctly interpreting sentences like *"she's patting Katie"* as non-reflexive. Further, covariate measures of vocabulary size and processing efficiency have been shown to reliably predict success on a Principle C task. Here, we further explore the effects of vocabulary, lexical access speed, and phrase structure integration speed on 30 month-olds' comprehension of Principle C. We show that all 30 month-olds appropriately represent Principle C, but that individual differences in vocabulary size and processing efficiency can mask this knowledge by affecting the speed with which it can be deployed.

Notes

Session A--Metcalf Small

Context, mutual exclusivity and the challenge of multiple mappings in word learning

Tim Poepsel, Pennsylvania State University
Chip Gerfen, Pennsylvania State University
Dan Weiss, Pennsylvania State University

A fundamental challenge for statistical learners is computing statistics when confronted with multiple inputs, as in bilingual language acquisition. Our previous speech segmentation research suggests that learners may form multiple representations for multiple inputs when provided with an adequate contextual cue. Here we explore this problem in the domain of adult word learning, using a cross-situational statistical learning paradigm. In four experiments, we explore how variable contextual cues modulate wordlearners' application of the mutual exclusivity constraint to input containing multiple mappings to both words and objects. In conditions lacking variation in contextual cues, learners formed mutually exclusive mappings; by changing speaker voice and accent over successive presentations of training input, we found that they formed multiple mappings. Our findings have two important implications for acquisition: language learners appear to 1) exploit contextual cues to detect and acquire multiple inputs and 2) track distributional statistics across multiple trials.

Session B--East Balcony

12-month-olds use voice and temporal cues to extract structure that only one of two speakers produces consistently

Kalim Gonzales, University of Arizona
Rebecca Gomez, University of Arizona
LouAnn Gerken, University of Arizona

Pooling statistics across proficient and nonproficient speakers might obscure grammatical patterns that are easily detected in any proficient speaker individually. Here we investigated whether and how children might segregate a proficient speaker's input. In four experiments, 12-month-olds were familiarized with artificial language input from both a speaker who adhered to the grammatical dependencies of the language (e.g., aXbY) and a speaker who produced grammatical and ungrammatical (e.g., aYbX) strings in random order. Following familiarization, infants were tested for discrimination of the grammatical and ungrammatical dependencies, produced by a novel speaker. Infants discriminated when the familiarization speakers' strings were distinguished by voice and block (Experiment 1) or either cue independently (Experiments 3 & 4), but not in the absence of cues (Experiment 2). Thus, infants appear to use both voice and temporal cues to extract grammatical structure from the more consistent of two speakers.

Notes

Session C--Conference Auditorium

Experience and Processing of Relative Clauses in German

Sanjo Nitschke, Max Planck Institute for Evolutionary Anthropology
Silke Brandt, University of Basel
Evan Kidd, University of Manchester

This study investigated whether children's well-attested comprehension preference for subject over object relative clauses (RCs) can be altered using syntactic priming. In a baseline condition 6 and 9-year-old German-speaking children were asked to interpret ambiguous RCs by pointing to a picture that corresponded to either the subject or object RC interpretation. In the test phase object RC readings were primed by presenting prime items with pictures where only an object RC reading was available, followed by ambiguous RC test items where both readings were available again. A post-test phase, which mimicked the baseline phase, tested for long-term priming. The results showed significant priming for the 9-year-old children in the test and post-test phase, but not for the 6-year-olds. The result extends priming phenomena to complex structures like RCs.

Session A--Metcalf Small

Comprehension and Later Lexical Development

Barbara Malt, Lehigh University
Eef Ameel, University of Leuven
Gert Storms, University of Leuven

Children's word use patterns continue to evolve well past the early years of language learning. However, production is cognitively more demanding than comprehension, and children may have more mature word knowledge than production reveals. We used a comprehension task (name acceptability judgments) to further evaluate knowledge about three names for common household objects in seven- to 13-year old Dutch-speaking children. The data showed continued evolution of word knowledge across these years. In contrast to production data in which under-extension of some words was found along with over-extension of others, all names were overextended. The mean number of objects that each name was accepted for decreased across ages, reducing overextension and decreasing overlap among the lexical categories. Later lexical development appears to entail adding discriminating features so that related word meanings become more distinct from one another.

Session B--East Balcony

Factors affecting talker recognition in preschoolers and adults

Sofia Jiménez, University of California - San Diego
Sarah Creel, University of California - San Diego

Alongside learning how words sound in their language, children are learning about how *people* sound, influencing both phonological and sociolinguistic development. Earlier studies have largely suggested that young children are unskilled relative to adults at distinguishing voices matched for age, gender, and dialect region, suggesting a long developmental trajectory for individual voice recognition. The current study, unlike earlier ones, tested children and adults' abilities to distinguish novel voices with identical amounts of exposure. While preschoolers were excellent at mapping one male and one female voice to novel cartoon referents (92% accuracy), they were less adept at distinguishing between two female voices that differed in their vowel spaces and fundamental frequency variability, even when trained on one sentence (approximately 60% accuracy in each case). Adults performed near ceiling (90%). This confirms reports that preschoolers distinguish voices less well than adults, and rules out degree-of exposure and task-difficulty explanations for children's performance patterns.

Session C--Conference Auditorium

6-9 year olds use prosody to resolve temporary syntactic closure ambiguity

Noemi Hahn, Harvard University
Jesse Snedeker, Harvard University

Snedeker and Yuan (2008) found that 5-year-olds could use prosody to resolve globally ambiguous sentences, but this ability was not adult-like. Children perseverated and failed to change their interpretation when prosody switched. In the current study, we tested if 6-9-year-old children can flexibly and rapidly use prosodic cues to guide syntactic interpretation when the demands on executive functions were decreased. Using the visual world paradigm, participants were presented with early closure (When the robot baked, the big postman delivered the mail) and late closure (When the robot baked the big muffin, the postman delivered the mail) sentences. Sentences had cooperative or neutral prosody in a within-subject design. Looks to the probable subject (postman) and the probable object (muffin) were measured in the ambiguous time window. Both children and adults looked to the probable object less often in the Early Closure/Cooperative condition than in the other three conditions resulting in a ProsodyXClosure ambiguity. We conclude that 6-9-year-olds, like adults, are capable of using alternating prosodic cues to parse temporarily ambiguous sentences.

Notes

KEYNOTE ADDRESS

Words and things: Linking infants' early conceptual and linguistic capacities

Sandra Waxman
Northwestern University

To learn the meaning of any novel word, infants must set their sights in two distinct directions. Facing the conceptual domain, they must identify concepts that capture the various relations among the objects and events that they encounter. Facing the linguistic domain, they must cull words and phrases from the melody of the human language in which they are immersed. Findings from our laboratory, among others, have revealed that even before they begin to speak, infants' advances in each of these domains are powerfully linked. In this talk, I will argue that infants begin with a broad universal initial link between the linguistic and conceptual systems, and that this sets the stage for increasingly precise links between different kinds of words (e.g., noun, verb) and different kinds of meanings. I will then present new evidence from infants as young as 3- and 4-months of age. Together, the work reveals that throughout development, naming is a powerful engine, fueling the acquisition of the essential, rich relations that characterize our most powerful concepts.

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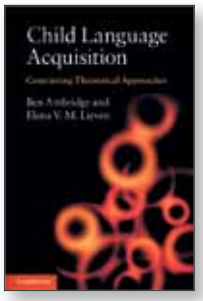

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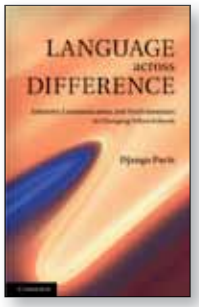

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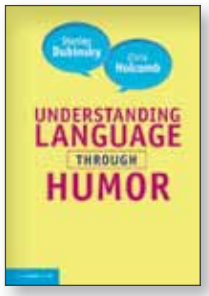

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POSTER SESSION I

The development of spatial language: Asymmetries between Containment and Support

Joshua Viau, University of Delaware
Barbara Landau, Johns Hopkins University
Anna Papafragou, University of Delaware

We examine the internal semantic organization of two major spatial relations, Containment and Support. Using a battery of 72 spatial scenes, we tested the hypothesis that the linguistic encoding of Containment in English exhibits constrained variation compared to Support (Levinson & Wilkins, 2006) and is therefore expected to be acquired earlier (Johnston & Slobin, 1979). Adult and four-year-old subjects were asked to describe the spatial relationship between Figure and Ground objects for a variety of sub-types of Containment and Support derived from the literature, and their encoding patterns were submitted to similarity matrix analyses (Levinson & Meira, 2003; Majid et al., 2008). Our results reveal a striking developmental asymmetry in terms of how English learners encode Support relative to their more adultlike encoding of Containment, suggesting that consistency of encoding in the adult spatial language does indeed predict the ease of acquisition of spatial prepositions.

POSTER SESSION I

The Contribution of Cognate Awareness and English Orthographic Processing to English-French Bilingual Children's French Literacy Outcomes

Katie Lam, University of Toronto and Ontario Institute for Studies in Education
Xi Chen, University of Toronto and Ontario Institute for Studies in Education

The present study examined whether cognate awareness and English orthographic processing contributes to English-French bilingual children's French literacy outcomes. Participants were 80 first graders enrolled in a French immersion program in Ontario, Canada. Children completed a cognate awareness task that asked them to distinguish English-French cognates from false friends and non-cognates. Measures of English and French sub-lexical orthographic processing were taken, in addition to French word reading, receptive vocabulary, and reading comprehension. Analyses using Structural Equation Modeling (SEM) revealed that children's cognate awareness significantly predicted French word reading, vocabulary, and reading comprehension. English orthographic processing significantly predicted French word reading beyond the effects of several metalinguistic skills; notably, it also predicted reading comprehension indirectly through word reading. Together, our findings contribute to the ongoing discussions about general cognitive mechanisms that operate across the boundaries between languages to facilitate biliteracy development. The conditions that support such cross-language effects are discussed.

POSTER SESSION I

The Development of Children's Pausing Patterns: Effects of Syntactic Boundary Strength

Erin Maloney, University of Oregon
Doris Payne, University of Oregon
Melissa Redford, University of Oregon

Previous pause research established that adults' pauses occur most frequently at major syntactic boundaries (Croft,1995; Nespor & Vogel,1986; Selkirk,1984), though we know pauses also occur within clauses at syntactically-weaker boundaries (Shattuck-Hufnagel & Turk,1996). A study by McDaniels et al. (2010) suggests that younger children pause more frequently at minor boundaries than older children and adults. The current study investigates the effect of syntactic boundary strength on pausing at within-clause boundaries in younger and older childrens' spontaneous speech. We analyzed 5-year-olds' and 7-year-olds' pause frequencies at three within-clause boundaries of decreasing syntactic strengths. Preliminary results showed a significant effect of age group [$F(1,22.01)=12.96$, $p<.01$] and boundary strength [$F(2,86.86)=6.00$, $p<.01$] on pausing. Furthermore, five-year-olds paused more frequently overall than 7-year-olds and showed systematic variation in pausing according to boundary strength. Our results suggest that syntactic structure influences the development of children's pause patterns; younger children do show sensitivity to syntactic boundary strength.

Notes

POSTER SESSION I

Infants and implicit dependency relationships: The infant *can* show__ preferences

Joanna Bhaskaran, University of Manitoba
Melanie Soderstrom, University of Manitoba

Eighteen-month-olds prefer grammatical relationships between the auxiliary "is" and the gerund "-ing" (the baker is baking), to ungrammatical ones (the baker can baking). However, this same study (Santelmann & Jusczyk, BUCLD22) found that infants showed a preference for ungrammatical is sentences. We replicated this experiment with the same sentences but using natural speech instead of the synthesized Dectalk speech. Infants in our study showed a significant preference ($t(28) = 2.3$, $p < .05$) for the ***grammatical*** passages with ***can*** over the ungrammatical passages with ***is.*** (**M*can*** = 7.6 s, **M*is*** = 6.4 s). This is the first direct evidence for sensitivity to an English dependency relationship involving an implicit inflection– i.e. the baker ***can*** bake_ bread, suggesting a degree of abstractness to the infants' representations. In follow-up work we are further examining the nature of these representations and exploring the difference in our finding to that of Santelmann & Jusczyk.

POSTER SESSION I

Seven-month-old English learners can discriminate declaratives and interrogatives

Susan Geffen, University of Southern California
Toben Mintz, University of Southern California

This study tested 12 typically developing English-learning seven-month-olds to determine whether they could distinguish between interrogatives and declaratives. Using the Head Turn Preference Procedure, we familiarized half of the infants to interrogatives and half to declaratives. All infants were then tested on trials comprised of novel sentences, half interrogatives and half declaratives. Infants listened significantly longer to familiar versus novel sentences, demonstrating discrimination between declaratives and interrogatives. To explore available prosodic cues, we measured pitch changes on the final syllable of each sentence. Mean pitch changes for interrogatives (243.60 Hz) and declaratives (156.89 Hz) were significantly different. Hence, infants could have used prosodic cues to discriminate sentence types, although marked word-order such as the presence/absence of fronted *wh-* words and AUX was an additional cue. This study suggests that as early as 7 months, infants can make distinctions among sentences that could provide an important foundation for acquiring syntactic knowledge.

Notes

POSTER SESSION I

Binding in Autism Spectrum Disorders (ASD)

Nadya Modyanova, Massachusetts Institute of Technology
Alexandra Perovic, University College London
Ken Wexler, Massachusetts Institute of Technology

Previously we showed that children with autism experience severe deficits with interpretation of reflexives, while demonstrating only moderate difficulty with personal pronouns (e.g. Perovic et al., 2007). Now, we explore binding in more detail with a Match-Mismatch (yes/no) task, and investigate not only comprehension of reflexive and personal pronouns, but also comprehension of quantifiers 'every' and 'all', and sentences where personal and reflexive pronouns were bound by a quantified antecedent (after Chien & Wexler, 1990). We tested 48 children with ASD and 144 TD MA-matched children. We find that while those with Asperger's show near-perfect knowledge of binding, 24 participants with mild autism (PDD-NOS) showed moderate deficits on all conditions (similar to controls), and 14 participants with autism showed severe deficits across all conditions (significantly different from controls on all conditions). Our results confirm severely impaired grammatical knowledge in children with autism.

POSTER SESSION I

Processing Relative Clauses in Heritage Korean

Boyoung Kim, University of California - San Diego

This study presents a self-paced reading investigation of how English-dominant heritage speakers of Korean process relative clauses in Korean. Specific focus is placed on the degree to which they show a nativelike subject/object asymmetry in four types of relative clauses with a genitive head noun, manipulating two factors: RC location in the matrix clause (left-branching vs. center-embedding) and gap type (subject vs. object). The results demonstrate heritage speakers' sensitivity to morphosyntactic information during online processing of relative clauses. In center-embedded relatives, both heritage and native groups exhibit a garden path effect for subject relatives, and a slowdown at the second NP of successive nominative NPs in object relatives, which indicates their use of case markers. However, heritage speakers' reading times display no subject/object asymmetry for left-branching relatives; by contrast, native controls exhibit a subject processing advantage. The results are discussed with regard to heritage speakers' processing strategies.

POSTER SESSION I

You must be as tall as this line to ride the roller coaster: "*exactly*" readings of "*as*"-comparatives

Alan Munn, Michigan State University
Kait Ayres, Michigan State University
Kara Brewer, Michigan State University
Katrina Torgerson, Michigan State University
Cristina Schmitt, Michigan State University

Huang et al. (2011) show that numerals behave differently from other quantifiers: children treat them as meaning "exactly *n*", rather than "at least *n*". This is consistent with Breheny's (2008) argument that the "at least" interpretations are pragmatically created, and that "exactly" readings are not scalar implicatures. We present the results of two experiments that show that children behave like adults with respect to treating *as* -comparatives as meaning "exactly equal" unless explicit context is provided. As with Huang et al.'s (2011) result with numerals, this is incompatible with accounts which treat the "exactly" readings of *as* -comparatives as scalar implicatures. If the ≥ interpretation of the *as* -construction were a scalar implicature, we would expect children to allow that interpretation in non-promoting contexts. However, this was not the case. Our data provide evidence that *as*-comparatives, like numerals, have "exactly" meanings, and the ≥ interpretation is derived through pragmatic means.

POSTER SESSION I

Foundations of Language Learning: Infants' Categorization of Sources and Goals in Motion Events

Laura Lakusta, Montclair State University
Kathryn Yuschak, Rutgers University - New Brunswick
Jessica Batinjane, Montclair State University
Susan Carey, Harvard University

What is the nature of infants' event representations such that these representations can support language development? Are they sufficiently abstract such that they can be readily mapped into the abstract semantic structures of language? Two experiments explored this question by testing whether 14-monthold infants categorize goals (endpoints) and sources (starting points) across motion events that include different paths, reference objects, and figures. The results showed that infants formed a goal category (Experiment 1); however, infants only formed a source category when the source objects in the events were made more salient (Experiment 2; e.g., bigger box with stripes). The findings suggest that there is an asymmetry between infants' abilities to categorize goals and sources. Yet, the presence of such categorization suggests that pre-linguistic representations of goal and source may reflect the abstract semantic structures of language.

Notes

POSTER SESSION I

Mutual Exclusivity in Preschoolers' Processing of Accented Words

Sarah Creel, University of California - San Diego

With increasing globalization, children will experience greater variability in the forms of spoken language, including the same language in differently-accented forms. Accented speech presents a puzzle for traditional theories of word learning because accented words may mismatch the child's representations. For instance, a child may hear accented *fish* as something like *feesh*, which might be a novel word. Two eye-tracked picture-selection experiments presented systematically vowel-shifted familiar words. Three-to-5-year-olds saw either four familiar pictures (Experiment 1) or three familiar and one novel (Experiment 2), and selected a response. Accuracy was near ceiling in Experiment 1, but eye movements to target pictures were slower than baseline. Accuracy was slightly lower in Experiment 2, with 11% novel-picture responses. Even when children selected the familiar picture, they still looked to the novel one above baseline, particularly in the second half of the experiment. Implications for mutual exclusivity and accent adaptation are discussed.

POSTER SESSION I

Investigation of linguistic endophenotypes as autism spectrum disorders (ASD) classifiers

Margaret Echelbarger, Northwestern University
Nadya Modyanova, Massachusetts Institute of Technolog
Alexandra Perovic, University College London
Ken Wexler, Massachusetts Institute of Technology

Communicative impairment is one of the defining characteristics of ASD however, it is not known to what extent linguistic deficiencies can distinguish children with ASD from those who are typically developing (TD). We analysed data from 63 children with ASD and 97 TD CA-matched controls (aged 7;0-14;11). Linear Discriminant Analysis (LDA) was used to model the best linear combination of scores that would classify the participant groups. We find that a function based on structural knowledge of reflexive pronouns and subject-experiencer-passives correctly classifies 65% of our participants, but that discriminant function based on pragmatic/reinterpretational knowledge of personal pronouns and actional passives correctly classifies only 34% of our participants. Thus our results suggest that knowledge of syntactic dependencies could contribute to distinguishing ASD from TD children. Thus, our study identifies syntactic linguistic endophenotypes that could add a fully objective measure to a battery used to detect pervasive language disorders in ASD.

Notes

POSTER SESSION I

Communication partners' comprehension of family-based homesign gesture systems

Emily Carrigan, University of Connecticut - Storrs
Marie Coppola, University of Connecticut - Storrs

Some profoundly deaf individuals without conventional linguistic input develop gestures, called "homesign," to communicate. We asked whether the Homesign Systems (HSs) used by four deaf Nicaraguan adults (ages 15-27) are shared by hearing Communication Partners (CPs) who engage them in gesture. We assessed sharedness by measuring CPs' comprehension of event descriptions ("A man pushes a woman") produced by the homesigner in their family. We compared CPs' comprehension to that of fluent Deaf ASL signers with no experience with these HSs. To rule out task effects, we also compared mothers' comprehension of productions in homesign vs. spoken Spanish. CP comprehension varied substantially (proportion correct .xx-.xx), with 3 mothers scoring lowest in their families. Mothers performed significantly worse than ASL signers, and comprehended spoken Spanish better than homesign descriptions. CPs, especially mothers, appear not to be sensitive to all the information in homesign descriptions, suggesting that adult HSs are not merely passed from mothers to homesigners.

POSTER SESSION I

Verb Islands in Child and Adult Language

Alix Kowalski, Northwestern University
Charles Yang, University of Pennsylvania

Under the usage based approach, children are believed to memorize concrete phrasal templates from their caregivers and the productivity of their speech is limited by comparison. This approach is most prominently featured in the Verb Island hypothesis (Tomasello, 1992), where children appear to use only one or very few frames for each verb (Lieven, Pine & Baldwin, 1997; Diessel & Tomasello, 2001). We analyze and compare verbal syntax of the three children and their mothers from the Harvard study (Brown, 1973) and the results do not support the usage based view. Children's agreement and tense usage diversities for *think* and *see* are at least as high as their mothers'. Similar findings are obtained for *be*, *have*, *go* and *put*, which additionally show comparable syntactic frame diversity across children and adults. The Verb Island Hypothesis cannot be maintained.

POSTER SESSION I

The acquisition of handling and object handshapes in lexical nouns and classifier predicates in ASL

Marie Coppola, University of Connecticut - Storrs
Diane Brentari, University of Chicago
Ashley Jung, Purdue University
Susan Goldin-Meadow, University of Chicago

Two handshape types in American Sign Language (ASL) appear both in lexical nouns and in classifier predicates: handshapes representing an object's features (*object-HSs*) and those representing how objects are handled (*handling-HSs*). Previous research (e.g., Supalla 1982, Schick 1990, Slobin et al. 2003) suggests that correct lexical forms generally precede correct classifier forms. We elicited *object-HSs* and *handling-HSs* in both lexical items and classifier predicates from native-signing 4-6 year-olds, 7-10 year-olds, and adults. Participants described 20 vignettes featuring objects whose nouns used *object-HSs (airplane, book), handling-HSs (pen, lollipop)*; half contained an agent, and half did not. Both child groups varied handshape type in appropriate, adult-like ways for noun types. However, unlike adults, 4-6 year-olds varied handshape type in classifiers for items whose nouns have *handling-HSs* but not for those with *object-HSs*. Four-year-olds thus can distinguish handshapes used in nouns vs. classifier predicates, but require time to master the full classifier system.

POSTER SESSION I

Is the ability to form word-object associations equivalent to word learning?

Heather MacKenzie, University of Calgary
Kim Ostergaard, University of Calgary
Suzanne Curtin, University of Calgary
Susan Graham, University of Calgary

We investigated whether 14-month-olds will extend a newly learned word-object mapping to other members of the same category (i.e., different color) in an associative learning task. Twenty 14-month-olds were habituated to two sets of word-object combinations and then presented with three test trials: a "Same" trial, a "Color Switch" trial, and a "Name Switch" trial. Results indicated that infants looked significantly longer during the "Name Switch" trial than the "Same" trial and significantly longer during the "Colour Switch" than the "Same" trial. That is, in an associative word-learning task, infants will make one-to-one word-object mappings, however they do not generalize this newly-learnt label to other members of the same category. This suggests that although the ability to associate novel words to objects is a critical step in word learning, infants may need additional input to understand the referential nature of labels in an associative learning task.

Notes

POSTER SESSION I

Early lexical abilities guide phonetic learning in 9-month-old infants

Henny Yeung, University of British Columbia and Université Paris Descartes
Lawrence Chen, University of British Columbia
Janet F. Werker, University of British Columbia

Infants learn to ignore phonetic contrasts absent in the lexicon of their native language by the end of their first-year. But how can infants' phonetic sensitivities reflect lexical knowledge before a sizable lexicon is acquired? Statistical information about the phonetic properties of one's native language may be available in the input, but statistical cues are likely supplemented by other kinds of information. Previous work suggests that word-labeling allows infants to associate speech tokens with different objects, contributing to phonetic learning. For example, pairing distinct visual objects with similar sounding labels (i.e., Object A with dental /da/; Object B with retroflex /Da/) increases the distinctiveness of phonetic contrasts between those labels. The present research further suggests that phonetic learning from these object-label associations is shaped by lexical factors (i.e., vocabulary size, referential cues). This suggests that phonetic learning in the first-year of life is guided by infants' early lexical abilities.

POSTER SESSION I

Measures of Frequency and the Acquisition of Syllable Structure in Polish

Gaja Jarosz, Yale University
Shira Calamaro, Yale University
Jason Zentz, Yale University

We present novel findings on the acquisition of syllable structure in Polish and explore abilities of various formulations of frequency to account for the acquisition results. We analyze the spontaneous productions of four children, examining accuracy of syllable margins at several levels of representation (CV, sonority, segment). We use mixed-effects modeling to examine differences in accuracy after controlling for effects of word frequency, age, subject, and word length. We also examine differences in acquisition between children. We then compare the observed differences in accuracy to various frequency measures calculated from the child-directed speech to these children. We consider both type and token frequencies calculated at each representational level as well as versions of these measures calculated from speech directed at each individual child. Our results suggest that while frequency can be a good predictor of accuracy, no single frequency measure can fully explain accuracy differences across children or representational levels.

Notes

POSTER SESSION I

Rediscovering a Childhood Language: A Case Study of Two Korean Adoptees

Charles Chang, University of Maryland - College Park

The manner in which interrupted linguistic experience from childhood may be accessed in adulthood has attracted growing attention in Heritage Language (HL) studies. The current study investigated the hypothesis that early HL experience benefits HL production by predisposing the HL relearner to attend to phonetic differences that are phonemically irrelevant in the dominant language. Two Korean adoptees to the U.S. (adopted at 0;4 and 5;0) were examined in comparison to native Korean speakers and native English speakers learning Korean as L2. Both adoptees' imitation of Korean auditory stimuli strongly resembled L2 learners', but showed a greater sensitivity to the acoustic differences between stimuli. These findings suggest that while HL production categories may be lost in the absence of continued HL exposure, perceptual sensitivity to the acoustic dimensions relevant to HL contrasts perseveres, thus providing an explanation for how early HL overhearing can lead to a production advantage for HL relearners.

POSTER SESSION I

Learning words by assuming speakers are informative

Michael Frank, Stanford University
Noah Goodman, Stanford University

Speakers and listeners rely on shared assumptions to allow them to communicate efficiently, including the Gricean assumption of informativeness. If word learners make the assumption that speakers say things that are informative with respect to the context, they should be able to learn words more effectively than if they simply assume that speakers' utterances are logically true. We study this hypothesis in simple naming games where a speaker must indicate one element of a set to a listener, formalizing informativeness using information theory. We show that adults can use contextual informativeness to guess the meaning of a novel word and that 3 – 5 year-old children also use informativeness in learning novel adjectives. This work takes a first step towards formalizing the role of children's pragmatic assumptions in word learning.

POSTER SESSION I

An Analogical Learning Model of the Development of Thematic Roles & Structural Priming

Micah Goldwater, Northwestern University
Scott Friedman, Northwestern University
Dedre Gentner, Northwestern University
Ken Forbus, Northwestern University
Jason Taylor, Northwestern University

A central issue in language learning is the nature of early thematic role representations. One view is that children's role representations are initially verb-specific. Here, we explore the hypothesis that analogical learning processes can account for the abstraction of thematic roles by applying SME & SAGE, computational models of analogical mapping and generalization. Our model compares specific examples to reveal their common structure, allowing the model to evolve abstract roles from verb-specific ones. Initially the model can align *giving* events only with other *giving* events, because the roles do not match those of other verbs. However, by gradual re-representation and generalization, the model develops more abstract roles. We assess the abstractness of the model's thematic roles by simulating structural priming. Because shared thematic structure is necessary to show priming, early in training there is only priming across sentences that share verbs, but as the model learns, across-verb priming is shown.

POSTER SESSION I

Gaze Following and Attention to Faces in Infancy Predict Language Development

Elena Tenenbaum, Brown University
Rajesh Shah, Independent scholar
David Sobel, Brown University
Bertram Malle, Brown University
James Morgan, Brown University

This longitudinal study explored two behaviors shown to predict language development: gaze following and attention to faces. Infants visited the lab at 6, 9 and 12 months for an eye tracking experiment which used videos of a woman describing one of two objects in front of her. Trials were counterbalanced for presence or absence of information in the mouth (speaking vs. smiling) and eyes (gaze toward object vs. straight ahead). Vocabulary size was then measured at 18 and 24 months. Results showed that both attention to the mouth and gaze following at 12 months predicted later vocabulary size. When combined, face scanning and gaze following behaviors together were the strongest predictor of language development. In addition to the importance of linguistically relevant information in the visual scene, we argue that these results reflect an underlying level of social engagement on the part of infants with accelerated vocabulary growth.

Notes

POSTER SESSION I

Semantic Cues Facilitate Learning and Generalizing Nonadjacent Dependencies

Jon Willits, University of Wisconsin-Madison
Jill Lany, University of Notre Dame
Jenny Saffran, University of Wisconsin-Madison

Previous research has found that infants have an easier time learning Nonadjacent Dependencies (NDs) when they correlate with semantic cues (e.g. *cookie*-x-*banana* > *cookie*-x-*kitty*). But do the semantic cues merely help learners *memorize* new strings, or do they facilitate acquiring abstract relations between linguistic structure and semantic classes? In Experiment 1, we tested whether 24-MOs transfer knowledge of newly-learned NDs to novel strings containing different intervening items. In Experiment 2, we tested whether 24-MOs were learning itemspecific NDs (e.g. *cookie*-x-*banana*), or were instead learning a more abstract relationship (e.g. FOOD-x-FOOD), by seeing if infants familiarized with *cookie*-x-*banana* showed preferential listening for strings like *cracker*-x-*apple*. In both experiments, infants showed evidence of learning and transfer to new but related stimuli containing NDs. The experiments suggest that associative learning mechanisms, when provided with a rich, redundant input, are capable of tracking complex linguistic structure and using it to acquire abstract, generalizable knowledge.

POSTER SESSION I

Are markedness constraints universal? Evidence from Mandarin Chinese speakers

Xu Zhao, Northeastern University
Iris Berent, Northeastern University

How do speakers acquire the sound structure of their language? Optimality theory asserts that all grammars share a set of well-formedness conditions called markedness constraints. To the extent that these constraints are (a) universal and (b) active in early development, they could further guide language acquisition. Our research examines this possibility. The present case study concerns the constraints on onset clusters. Across languages, certain onsets are preferred (e.g., more frequent) to others (preference: bl>bn>bd>lb). We investigate whether this full hierarchy is active in the grammar of Mandarin—a language that arguably bans onset clusters and strictly constrains clusters elsewhere. Results from an AX identity task showed a nearly full effect of markedness, which remained significant even after controlling for phonetic factors. We conclude that markedness constraints might be universally active in adult grammars. These findings converge with evidence from English-learning children to suggest that markedness constraints may guide language acquisition.

Notes

POSTER SESSION I

The power of the prior: asymmetries in word learning vs. word-class learning

Annie Gagliardi, University of Maryland - College Park
Jeffrey Lidz, University of Maryland - College Park

Bayesian models of learning incorporate two factors: the *likelihood* of the observed data given a hypothesis, and the *prior probability* of this hypothesis. Xu & Tenenbaum (2007) emphasized the importance of the likelihood in explaining children's bias to assign the most restricted meaning to novel nouns (i.e. to not generalize to higher level categories): the smallest hypothesis consistent with the observed data becomes more likely as the learner encounters more data. We present two experiments showing that children generalize differently when learning novel noun-classes, novel adjectives, and novel nouns. Prior hypotheses about the links between grammatical category and meaning are therefore required to capture the observed range of generalization patterns.

POSTER SESSION I

Differential Processing of Rhythm by Infant Siblings of Children with Autism

Jennifer Ference, University of Calgary
Suzanne Curtin, University of Calgary

Typically-developing infants can differentiate trochaic and iambic stress patterns by 2 months (Jusczyk & Thompson, 1978). Children with Autism Spectrum Disorders (ASD) often have difficulties correctly producing word stress, yet little is known about how they perceive it (Wilkinson, 1998). Since the perception of word stress is believed to facilitate language development (Herold, Höhle, Walch, Weber, & Obladen, 2008), it follows that a difficulty perceiving it could negatively impact early word learning. The present study tested 4 to 6 month old infants with typically-developing older siblings (Low-Risk) and infants with older siblings diagnosed with ASD (High-Risk) on their ability to differentiate the trochaic and iambic sounds of the word-form *'gaba'*. The Low-Risk infants showed an increased interest in attention to the trochaic stress pattern, suggesting an emergent trochaic bias. In contrast, high-risk infants attended to these stress patterns equally.

POSTER SESSION I

Does structural overalp matter? Evidence from object drop in English-Brazilian Portuguese bilinguals

Alejandro Cuza, Purdue University
Mara Barbosa, Purdue University

We examine the role of transfer in the acquisition of the semantic restrictions of object drop in spoken Brazilian Portuguese among English natives. Whereas in English or Spanish null objects are generally not allowed, object drop in BP is constrained by animacy and specificity features. Inanimate objects must be dropped while animate specific objects must be overt. Will crosslinguistic influence from English L1 or Spanish L2 result in less sensitivity to ungrammatical overt objects in contexts of no structural overlap (-animate, ±specific) and more sensitivity to ungrammatical omission in contexts where the three languages require an overt object (+animate, +specific)? An acceptability task shows overextension of overt objects to inanimate contexts, as predicted. In controlled production, there was an overextension of ungrammatical null objects to animate specific contexts regardless of language background. Target behavior was found with null objects in inanimate contexts. Cross-linguistic influence alone cannot account for the findings. Results are discussed in terms of form-meaning mapping issues and the role of input frequency.

POSTER SESSION I

Lexical alternatives improve 5-year-olds' ability to compute scalar implicatures

Dimitrios Skordos, University of Delaware
Anna Papafragou, University of Delaware

Young children typically fail to spontaneously generate scalar implicatures (SIs;"Some elephants have trunks" = Not all elephants have trunks), without the assistance of training or context. Here we explore the possibility that children's difficulty lies with generating appropriate scalar alternatives (e.g., *all* when *some* has been uttered) rather than inability to calculate SIs. On this *Accessibility* hypothesis, it should be possible to lower the age at which SIs seem to be available to children, by providing a simple task that creates an implicit contrast between strong *(all)* and weak *(some)* scalar alternatives, without contextual assistance or training. Children were tested in an acceptability judgment task, where a silly puppet provided pragmatically infelicitous statements sometimes. We find that, when scalar alternatives are highlighted, even 5-year-olds are capable of spontaneously computing SIs, without training or context. These results support the Accessibility hypothesis and lower prior estimates for the emergence of pragmatic abilities.

Notes

POSTER SESSION I

Sound-Shape Correspondences: Biased?

Ozge Ozturk, New York University
Madelaine Krehm, New York University
Athena Vouloumanos, New York University

The cross-sensory mapping of labels and objects has long been assumed to be arbitrary. Recent research suggests otherwise: Adults and toddlers consistently map nonsense words with rounded vowels and voiced bilabials (*e.g., bouba*) to rounded, amoeboid shapes and nonsense words with unrounded vowels and voiceless velars (*e.g., kiki*) to angular, star-like shapes. However, since adults and toddlers have had significant experience with language mappings in their environment, it is unclear whether these correspondences are a product of an initial proclivity or the result of language exposure. We studied the bouba/kiki phenomenon in 4-month-olds by examining looking behavior to congruent (round shape+*bubu*, angular shape+*kiki*) or incongruent (round shape+*kiki*, angular shape+*bubu*) trials. Four-month-olds consistently distinguished between congruent and incongruent sound-shape mappings in a looking time task. This finding supports the hypothesis that some naturally biased cross-modal mappings are evident even in prelinguistic infants and these biases may facilitate language acquisition.

POSTER SESSION I

Two-year-olds Rapidly Access Newly-Learned Verb Representations

Kathleen Geraghty, Northwestern University
Sudha Arunachalam, Boston University
Sandra Waxman, Northwestern University

By 24 months, toddlers successfully extend the meaning of a novel verb (e.g., *larping*) from one instance (e.g., girl petting a dog) to new instances of the same action involving different participant objects (e.g., girl petting a blanket) (A&W, 2011; WLBL, 2009). Here we advance this work, using time-course analyses to consider (a) how abstract toddlers' representation of newly-learned verbs might be, and (b) how rapidly toddlers are able to extend the meaning of newly-learned verbs. If toddlers' representation of meaning is abstract from the beginning, they should quickly extend the verb and attend to a scene involving a different object. But if their representation is initially tied to the scene with which it was introduced, then they should require additional processing time to extend its meaning. Our results suggest that toddlers rapidly extend the verb, fixating on a test scene involving a new object even before being prompted to do so.

Notes

POSTER SESSION I

Language Generalization in Children with Autism

Matt Johnson, Princeton University
Jeremy Boyd, University of Illinois - Urbana-Champaign
Adele Goldberg, Princeton University

While much research has been focused on how social deficits impede autistics' language, little work has considered how other, non-social aspects of autism may affect its development. In this study, oft-noted difficulty in generalization is explored as a potential factor in autistic language delay. In order to address this, we examined the ability of autistic children to generalize over linguistic exemplars en route to learning a novel abstract phrasal construction. In this non-social, computer based design, participants were exposed to videos pairing a novel action (an agent approaching another person) with a novel abstract phrasal form (NP NP V). While children with autism displayed a comparable memory for these original examples as a typically developing control group, they displayed a distinct inability to abstract over them. Our results suggest that generalization deficits play a contributing role in both hindering and shaping autistic language.

POSTER SESSION I

She and Her: Online and Offline Pronoun Comprehension in Children with an ASD

Rebecca Nappa, Harvard University
Joshua Hartshorne, Harvard University
Jesse Snedeker, Harvard University

In two experiments, we compare pronoun comprehension abilities in highly-verbal children with autism and controls matched on syntactic abilities. To the extent that pronoun resolution depends on linguistic heuristics (rather than social cognition or inhibitory control), we might expect it to be unimpaired in highly-verbal ASD individuals. Experiment 1 investigated effects of working memory load on participants' ability to maintain a representation of discourse focus, and Experiment 2 pitted discourse focus against recency using an order-of-mention manipulation. Controls showed a much stronger first-mention bias than ASD participants, but both groups performed equally well on unambiguous gender-differentiated trials and all memory load conditions. Eye movement analyses of the order-of-mention condition reveal that ASD participants look to the focused character early, shifting gaze to the most recently mentioned character only once a response is requested. Findings are considered in terms of potential linguistic heuristics, as well as social impairments and executive function.

POSTER SESSION I

The Discovery of Word Boundaries in Variable Input Representations

Frans Adriaans, University of Pennsylvania

It is widely acknowledged that infants' word segmentation is supported by statistical learning. This view has gained support from computational models showing that word boundaries can be inferred from phoneme co-occurrence statistics. Such models, however, operate on transcriptions that lack the variability that is found in speech (reductions, assimilations). This study examines the effects of variable input representations on the detection of word boundaries. Computer simulations compare the performance of various biphone-based segmentation models on canonical and variable transcriptions of the Spoken Dutch Corpus. The results indicate that, in contrast to claims in earlier studies, biphones do not show the bimodal tendency to either always or never contain a word boundary. Moreover, while both supervised and unsupervised statistical models show decreased performance on variable input, models that employ feature-based generalization are more robust to variability. This suggests that generalizations may help the infant to locate word boundaries in variable input.

POSTER SESSION I

The Effect of Variation on Phonetic Category Learning

Madelaine Krehm, New York University
Adam Buchwald, New York University
Athena Vouloumanos, New York University

When learning new phonetic categories, learners must process acoustic variation on dimensions that are irrelevant to language. Previous work has shown that adults can learn phonetic contrasts from the statistical distribution of Voice-Onset-Times (VOT) during a familiarization phase (Maye 2000). We tested whether participants could learn a phonetic contrast when the input includes additional pitch variation, mimicking two speakers with voices of different pitches. When this variation was included, participants did not show an effect of statistical distribution (bimodal vs. unimodal) on VOT discrimination. We confirmed that participants in the bimodal group could learn the new phonetic categories when the statistical distribution varied on a single dimension without any pitch variation (Exp. 2). These results provide evidence that real-world variation may affect the ability to learn a new phonetic contrast from a statistical distribution.

Notes

POSTER SESSION I

Functional biases in acquisition: Language learners restructure input to reduce uncertainty

Maryia Fedzechkina, University of Rochester
T. Florian Jaeger, University of Rochester
Elissa L. Newport, University of Rochester

Why do languages share structural properties? Functionalists have argued that languages have evolved to suit the needs of their users, but it has been unclear how functional pressures enter the system. We explored the hypothesis that functional pressures operate during language acquisition, biasing learners to deviate from the input they receive. We exposed learners to novel artificial languages that had flexible word order and optional case marking on objects (Experiment 1) or subjects (Experiment 2). Learners retained more case-marking when the referents were matched for animacy (i.e. when subject and object were both animate or both inanimate). That is, they restructured the language precisely when the uncertainty about the intended meaning was highest. This behavior mirrors phenomena in natural languages, such as differential case-marking systems. Our results suggest that learning biases are at least partially functional in nature and might account for structural properties of natural languages.

Notes

POSTER SESSION I

English and Korean stop productions of monolingual versus bilingual children

Sue Ann Lee, Texas Tech University
Gregory Iverson, University of Wisconsin - Milwaukee

The present study examined stops produced by Korean-English Bilingual (KEB) children at 7 years of age and compared them with those of monolingual counterparts in order to investigate when bilingual children come to distinguish detailed phonetic stop categories for the two languages. In our previous study (Lee & Iverson, in press), Korean and English stops were phonetically distinct from each other as produced by monolingual 5 year-old children, but not for bilingual children at the same age who had English exposure of 2 years. In our current study, 7 year-old KEB children who had at least 4 years of exposure to both languages fully distinguished stop categories across the two languages. Results suggest that the phonetic system of bilingual children continues to develop during the developmental process, and that bilingual children require a certain duration of exposure in order to develop detailed phonetic categories across languages.

POSTER SESSION I

Perception of Lexical Tones in Infants

Rushen Shi, University of Quebec - Montreal
Jun Gao, Chinese Academy of Social Sciences
Aijun Li, Chinese Academy of Social Sciences

We examined infants' perception of native-language lexical tones. Mandarin-Chinese-learning 4-6-month-olds and 10-13-month-olds were tested on the Tone 1 (high-level) - Tone 4 (high-falling) contrast in Mandarin. To assess categorization, we habituated infants with variable tokens of a syllable bearing one tone. Test trials were two types: tokens of the syllable bearing the contrasting tone versus new tokens of the habituated tone. Results showed that neither age group discriminated the two categories. In Experiment 2 we inquired whether a more dissimilar contrast, Tone 1 versus Tone 3 (low-dipping) was discriminable for infants. Another group of Mandarin-Chinese-learning 10-13-month-olds were tested in the same procedure and design. After habituation to one tone, infants' looking recovered significantly to the contrasting category relative to the same habituated category, indicating tonal categorization. These results demonstrate that infants are not born with the ability to distinguish lexical tones. Furthermore, lexical tone acquisition is related to acoustic distinctness.

POSTER SESSION I

Ad-hoc scalar implicature in adults and children

Alex Stiller, Stanford University
Noah Goodman, Stanford University
Michael Frank, Stanford University

Linguistic communication relies on pragmatic implicatures, yet young children perform poorly on tests of scalar implicature until quite late in development. We created simple ad-hoc scales (e.g. a set of three faces, where one has no accessories, one has a hat, and one has a hat and glasses) to test whether children's performance in implicatures is equally poor when there are no lexical quantifiers involved. We found that three- and four-year-olds were able to make adhoc scalar implicatures with high accuracy. Our next experiments (with adults) tested whether these ad-hoc implicatures rely on the real-world knowledge that possessing a feature (e.g. a hat) is less common than not possessing that feature. Consistent with the predictions of a probabilistic model, manipulating the base rates of features affected the probability that adults would make implicatures. Our results thus support a statistical account of pragmatic inference.

POSTER SESSION I

Teasing apart the role of cognitive and linguistic factors in children's emerging metaphorical abilities

Lauren Stites, Georgia State University
Şeyda Özçalışkan, Georgia State University

Metaphor plays an important role in cognitive development by structuring abstract concepts and leading to conceptual change. Yet we know little about the factors that contribute to children's metaphor comprehension. In this study, we focus on *spatial metaphors for time* and ask (1) how early children understand and explain different metaphors for time, and (2) what cognitive and/or linguistic factors best explain these developmental changes. Our analysis of 60 children between ages 3 and 6 showed that children can understand time metaphors by age five and explain their meanings by age 6. We also found strong positive correlations between *metaphor comprehension* and understanding of the time concept ($B(68)=.763$, $p=.032$), and between metaphor explanation and verbal ability ($B(68)=.044$, $p=.014$). These results suggest that changes in children's metaphor comprehension are best explained by children's grasp of the target concept, while changes in metaphor explanation are more closely tied to children's verbal ability.

POSTER SESSION I

Interpreting object clitics in real-time: eye-tracking evidence from 4-year-old and adult speakers of Spanish

Theres Gruter, Stanford University
Nereyda Hurtado, Stanford University
Anne Fernald, Stanford University

Production of object clitics in the Romance languages emerges late in L1 development, and presents difficulties for various learner populations. Here we investigate whether these difficulties (a) extend to real-time comprehension, and (b) relate to working memory. In an eye-tracking experiment, 4-year-old and adult speakers of Spanish listened to sentences containing a preverbal object clitic or a post-verbal lexical object. Adults started looking at the target image earlier in the clitic- than the lexical-object condition, indicating incremental interpretation of preverbal clitics. A similar pattern emerged for 4-year-olds who rarely/never omitted clitics in production, but not for those omitting clitics more frequently. Moreover, frequency of clitic omission in production was related to the Recalling Sentences subscale on the CELF. These findings suggest the ability to incrementally interpret preverbal clitics takes time to develop, and is related to the ability to produce clitics consistently, which in turn may relate to working memory.

Notes

POSTER SESSION I

Win it or lose it? The development of word stress perception in French and Spanish infants

Katrin Skoruppa, University College London
Ferran Pons, University of Barcelona
Sharon Peperkamp, CNRS
Laura Bosch, University of Barcelona

Work on phonetic category acquisition has revealed both sensitivity losses for non-native sound contrasts and sensitivity gains for native contrasts during the first year of life. The present study investigates the developmental course of the perception of lexical stress, a suprasegmental dimension that differs cross-linguistically (variable in Spanish, fixed in French). Previous research shows that at 9 months, Spanish-learning infants discriminate between segmentally varied stress-initial (e.g. *níla, túli*) and stress-final (e.g. *lutá, pukí*) nonsense words, whereas French infants do not (Skoruppa et al., 2009). Here, we show that neither Spanish nor French 6-month-olds can discriminate between stress-initial and stress-final words in a familiarization-preference procedure. In contrast, both groups succeed when tested with a single word. Hence, only Spanish infants develop the ability to track stress patterns in segmentally varied words between the ages of 6 and 9 months. Stress perception thus involves a sensitivity gain during the first year of life.

POSTER SESSION I

Semantic bootstrapping and the role of meta-cognition

Neil Parr, University College London
Richard Breheny, University College London

Traditional accounts appeal to the idea that Verbs denote actions and Nouns denote entities. We propose that infants attend to and acquire the grammatical properties of word forms when describing complex events involving sub-events which are **not** currently in shared attention. Prior to that, infants' utterances focus on the 'here-and-now,' and infant uses of nominal and verbal forms lack their typical grammatical function. The development in usage from simple Manifest to Complex Events co-occurs with meta-cognitive abilities required to represent non-occurrent states. Our research shows that 18-30 month old infants make two kinds of complex utterance. One (INT) involves achievements, the other (RES), involves accomplishments. Each requires a predicate describing the state change and a means to refer to a Theme 'measuring out' the change; in effect, the use of [V]erbs and [DP]s. Our presentation will describe analysis supporting the conclusion that Complex Events are the locus of early syntactic development.

Notes

POSTER SESSION I

Session A--Metcalf Small

When it hurts (and helps) to try: What happens when adult learners try to learn novel statistics to segment words and categories

Amy Finn, Massachusetts Institute of Technology
Carla Hudson Kam, University of British Columbia

Effortful processing abilities develop slowly, and interestingly, alongside the sensitive period for language acquisition. We ask whether the two are related. In particular, we examine whether effort has a detrimental impact on language learning, and whether this impact is restricted to things known to cause adult learners difficulty. We exposed 48 adults to an unsegmented speech stream comprised of 9 bi-syllabic words (something that is not difficult for adult learners) belonging to 3 phonologically defined categories (something that is difficult for adult learners). Participants were exposed under *implicit* (no effort), *explicit-word* (try learning the words), or *explicit-category* (try learning the categories) conditions. All learners, regardless of condition, were able to learn the words. However, only learners exposed under implicit conditions showed evidence of having learned the categories. These data indicate that while effort does not have a negative effect on word-segmentation, it can be detrimental for learning aspects of grammar.

Session B--East Balcony

Reanalysing the L2 acquisition of English anaphoric binding: A feature-based approach

Laura Dominguez, University of Southampton
Hee-Jeong Song, University of Southampton
Glyn Hicks, University of Southampton

This study presents a Minimalist analysis of the acquisition of binding properties where cross-linguistic differences arise from the interaction of anaphoric feature specifications and operations of the computational system (Reuland 2001, Hicks 2009). Difficulties in the L2 acquisition of locality and orientation are attributed to problems reanalysing the features responsible for reflexivisation. 70 Korean L2 speakers of English completed a picture-verification task. The results are compatible with the prediction that if the locality and orientation behaviour of English reflexives arise due to syntactic operations on their features (Agree), then acquisition of locality cannot be achieved unless orientation is acquired as well. We show that for independent reasons, Korean speakers could still behave apparently nativelike for locality (by means of L1 transfer), but not for orientation. Crucially, our analysis can explain how two properties traditionally subsumed under the same UG principle can pose 'apparently' different learning difficulties to L2 speakers.

Session C--Conference Auditorium

Competition all the way down: How children learn word order cues to sentence meaning

Claire Noble, University of Manchester and Max Planck Child Study Centre, University of Manchester
Caroline Rowland, University of Liverpool
Angel Chan, Hong Kong Polytechnic University

We explored how the acquisition mechanism behaves when a language contains two alternating syntactic structures with similar semantic properties. We report three experiments that address this using a forced choice pointing method. The experiments focus on how English, Welsh and Cantonese 3- and 4-year old children acquire the syntactic function of word order as a marker of Theme-Recipient roles in datives. The English data tell us that the existence of two structures expressing similar meanings with different word orders may delay the acquisition of word order marking. The Cantonese data tell us that competition may come from elliptical utterances as well as syntactic alternation. The ease with which Welsh children acquire the word order constraint of the prepositional dative tells us that these delays cannot be attributed to task demands or the complexity of the structure. We suggest that the acquisition mechanism generalises across syntactic structures that share salient syntactic or semantic properties from early on.

Notes

Session A--Metcalf Small

Statistical word segmentation of Zipfian frequency distribution

Chigusa Kurumada, Stanford University
Stephan Meylan, Stanford University
Michael Frank, Stanford University

Word frequencies in natural language follow a highly skewed distribution, known as a power-law distribution or a Zipfian distribution (Zipf, 1965). Artificial language experiments that are meant to simulate language acquisition generally use uniform word frequency distributions, however. In the present study we examine whether a Zipfian frequency distribution influences adult learners' word segmentation performance. Using two experimental paradigms (a forced choice task (cf. Saffran, Newport, & Aslin, 1996) and an orthographic segmentation task), we show that human statistical learning abilities are robust enough to identify words from exposures with widely varying frequency distributions. Additionally, we report a facilitatory effect of Zipfian distributions on performance in the orthographic segmentation task. Learners exposed to Zipfian frequency distributions achieved higher word token accuracy than those who heard uniform distributions. The skewed word token frequency distributions increase the chances for learners to apply their knowledge in processing a new speech stream.

Session B--East Balcony

L1-Korean L2ers' Sensitivity to Givenness in the English Dative Alternation

Kyae-Sung Park, University of Hawaii - Manoa
Bonnie D. Schwartz, University of Hawaii - Manoa and Radboud University Nijmegen

The literature documents a *Given-before-New principle* in native adult speech such that a *given-referent* is more likely to precede a *new-referent* (e.g. Arnold et al. 2000). We investigate whether adult L2ers who have knowledge of the Given-before-New principle in their L1 (Korean) automatically have knowledge of it in their L2, focusing on the English dative alternation: a. John brought the pie to some friends. [NP PP] b. John brought some friends the pie. [NP NP] We developed Oral Contextualized Preference Tasks. Participants listen to pairs of (truth-conditionally equivalent) dative variants following a story and choose their preference. Natives (n=20) comply with the Given-before-New principle. L2ers (n=23) prefer the given-before-new order in *given-theme* contexts but not in *given-recipient* contexts. We discuss the L2 results vis-à-vis corresponding L1 phenomena (Korean dative constructions), L2 proficiency, input (in)frequency, and (in)felicitous usage, and suggest an implicational scale characterizing L1-Korean L2ers' Interlanguage-English in this domain.

Notes

Session C--Conference Auditorium

The retreat from overgeneralization: Frequency, verb semantics or both?

Ben Ambridge, University of Liverpool

How do children acquire the productivity necessary to use verbs in unattested constructions (e.g., *John meeked Sue the present*) whilst avoiding over-general utterances that adult speakers deem ungrammatical (e.g., ***John suggested Sue the trip***; ***John said Sue something nice***)? Two studies investigated this question with respect to the double-object dative construction. In Study 1, adults and children aged 5-6 and 9-10 rated double-object-dative (DO) and prepositional-object-dative (PO) uses of novel pseudo-Germanic and pseudo-Latinate verbs (e.g., *John blicked/toncated the present to Sue*; *John blicked/toncated Sue the present*) from alternating and PO-dative-only semantic verb classes (Pinker, 1989). In Study 2, adults and children rated PO and DO-dative uses of 301 English verbs. Together the findings suggest that accounts of the retreat from overgeneralization must incorporate a role for both verb semantics and statistical learning processes. Adults also showed sensitivity to Green's (1974) constraint which prohibits Latinate verbs from appearing in the DO-dative.

Session A--Metcalf Small

The Journey to Word Segmentation

Constantine Lignos, University of Pennsylvania

Computational models of infant word segmentation have thus far focused on the endpoint of learning rather than how infants' abilities change over the course of development. While recent models have improved task performance and suggested cues that infants might use, their viability as cognitive models is unclear and the problem of modeling the progression of infant competence has not been investigated since the earliest work in this domain (Olivier, 1968). We present an efficient, online learning model in the style of Gambell and Yang's (2006) learner, and we demonstrate that it displays characteristics of infants' changes in performance and that its errors are consistent with those of children attempting to identify the correct units of language acquisition (Peters, 1983). These results show that a simple, cognitively plausible model of word segmentation can both be effective at the task and replicate learning patterns observed in infant development.

Session B--East Balcony

Statistical learning constrained by syntactic biases in an artificial language learning task

Jennifer Culbertson, University of Rochester
Paul Smolensky, Johns Hopkins University
Géraldine Legendre, Johns Hopkins University

According to mainstream linguistic theories, language acquisition is facilitated by a set of biases, rules or principles, which limit the space of hypotheses learners entertain. Research with adults and children suggests that learners may also use statistical properties of the input to segment and categorize words. This paper presents two artificial language learning experiments showing that adults acquiring new word order patterns are sensitive both to higher-level constraints on syntactic representations *and* lower-level input statistics. In particular, subjects exhibit learning biases in line with substantive constraints on order in phrases containing adjectives, numerals and nouns—namely Greenberg's Universals 18 and 20. However, statistical properties of the input also play a clear role in determining which ordering patterns are preferred; when learners are trained on two-word phrases and required to generalize to *three-word* phrases, they are more likely to use orders associated with high transitional probabilities in the input.

Session C--Conference Auditorium

The shape of frequency distribution and novel construction learning

Grzegorz Krajewski, University of Manchester and Max Planck Institute for Evolutionary Anthropology
Anne-Kristin Siebenborn, University of Munich
Elena Lieven, Max Planck Institute for Evolutionary Anthropology

There is some evidence in the literature suggesting that learning of word order constructions is facilitated if one item appears in the construction much more frequently than others (skewed distribution; Casenhiser & Goldberg, 2005). On the other hand, given that high token frequency reduces an item's contribution to the process of abstraction (Bybee, 1995), one might expect a more balanced distribution to be beneficial. Indeed, results of Matthews and Bannard (2010) suggest that generalisations of frame+slot constructions might be easier, if their distributions are characterized by greater entropy. Since the flatter a distribution the greater its entropy, it suggests a facilitatory effect of flat distributions. Results of our novel construction learning experiments suggest that the effect of the skewness of a distribution depends on the type of a construction: children learn a novel morpheme best if the distribution is flat but moderate skewness helps to learn a novel word order.

Notes

Session A--Metcalf Small

Constraints on infant word learning: The effects of stress and phonotactic patterns

Katharine Graf Estes, University of California - Davis
Sara Bowen, University of California - Santa Barbara

This research addresses how early learning about the native language sound system shapes infants' ability to associate the sounds of words with their meanings. We investigated how prosodic and phonotactic patterns affect how 19-month-olds learn new object names. The bisyllabic labels consisted of high versus low phonotactic probability phoneme sequences (i.e., sequences of frequent phonemes versus infrequent phonemes in English). The labels were produced with the common English trochaic (strong/weak) stress pattern versus the less common iambic (weak/strong) pattern. Using the habituation-based Switch task, infants readily learned high probability trochaic labels. However, they failed to learn low probability labels, regardless of stress, and failed to learn iambic labels, regardless of phonotactics. Thus, infants required support from both common phoneme sequences and a common stress pattern. These findings illustrate that infants do not start lexical acquisition as blank slates. Rather, learning is shaped by prior knowledge of native language phonology.

Session B--East Balcony

'Experiencing' a slight delay: Intervening arguments and the acquisition of subject-to-subject raising

Robyn Orfitelli, University of California - Los Angeles

English-speaking children are noted to be delayed in acquiring subject-to-subject raising (StSR) structures with the predicates *seem* and *appear* (e.g. *Bill seems/appears (to Karen) to be hungry*) (Hirsch, Orfitelli and Wexler 2007, 2008, a.o.). These two verbs are among a small minority of raising predicates which optionally permit an 'experiencer' argument (*Karen*, above). We test the possibility that this experiencer is the cause of this delay through a Truth-Value Judgment Task of StSR sentences with *tend* (e.g. *Bill tends (*to Karen) to be hungry*), which does not permit an experiencer. Almost all of the 30 five- and six-year-olds tested performed at above chance levels, providing response justifications that show they have mastered both the meaning of *tend* and the adult structure of StSR. This suggests that it is not StSR itself which is problematic for children, and that their difficulties are limited to A-movement over an intervening argument.

Notes

Session C--Conference Auditorium

Applying the Interface Hypothesis to Heritage Speaker (HS) Acquisition: Evidence from Spanish Mood

Jason Rothman, University of Florida
Diego Pascual y Cabo, University of Florida
Anne Lingwall, University of Florida

Following Montrul (2009) and Iverson, Kempchinsky and Rothman (2008), we examine and contrast subjunctive modality in HS Spanish when it is strictly syntactically subcategorized (i.e. complements of volitionals) juxtaposed against indicative vs. subjunctive as complements of epistemic verbs where either mood is grammatical but regulated by discourse felicitousness related to truth value propositions relevant to both the speaker and hearer. We present data from three proficiency levels of HSs in Spanish (n=20 per group) and a native control (n=20). Data come from two experiments: (a) a multiple choice morphological task with examples probing for subjunctive and indicative in past and present (plus infinitives) as complements of verbs that strictly select subjunctive or indicative complements and (b) a truth value context judgement task where the felicitous use of the subjunctive/indicative with epistemic predicates alternates by discourse function as described above. We discuss the data in light of Sorace's (2011) Interface Hypothesis.

Session A--Metcalf Small

Monolingual and Bilingual Infants' Use of Atypical Phonetic Information in Word Learning

Christopher Fennell, University of Ottawa
Krista Byers-Heinlein, Concordia University

Previous research revealed differences between 17-month-old monolinguals and bilinguals in learning minimal pairs – words differing by one phoneme. When presented with English-accented tokens, infants learning English and another language failed to learn minimal pairs, while English monolinguals succeeded. Conversely, when presented with "bilingual tokens" (phonetic properties falling between bilinguals' two languages), bilinguals succeeded but monolinguals failed. Seventeen-month-olds might therefore have difficulty using phonetic information atypical of their language environments. Yet, previous studies inflated task difficulty by using isolated tokens (little syntactic and referential information). Isolated tokens are especially problematic for bilinguals, as there are few cues to language identity. We investigated whether sentence context boosts minimal-pair learning in both monolinguals and English-French bilinguals at 17 months. Both groups successfully learned "bilingual" word tokens and are thus far succeeding on English-accented tokens (testing in progress). Sentential context appears to allow infants to overcome difficulties with tokens atypical of their language environment.

Session B--East Balcony

Raising is Birds, Control is Penguins: Solving the learnability paradox

Susannah Kirby, Simon Fraser University

Because control verbs are more restrictive than raising verbs (*Diamonds seem/*try to be expensive, Jay wanted/*asked it to snow*), the Subset Principle predicts that children should assume a control analysis for a novel verb in an ambiguous frame. However, children initially perform better (in TVJ and judgment tasks) on control than raising verbs (Becker, 2009; Kirby, 2011). I present a non-generative analysis of the data, based on construction grammar and prototype theory. Goldberg et al. (2004) found that a highly frequent verb "prototype" facilitated learning of constructional meanings, and CHILDES data indicates that *want* is exponentially more frequent than several other common raising-to-object (RO: *need*) and object control (OC: *ask, tell*) verbs. As predicted, children perform better on the prototype verb *want* than on more peripheral exemplars of the RO/OC category (Kirby, 2009). Furthermore, adults generalize towards RO *want* by allowing OC verbs to co-occur with inanimate and expletive arguments.

Session C--Conference Auditorium

Bilingual Language Synthesis: Evidence from WH-Questions in Bimodal Bilinguals

Diane Lillo-Martin, University of Connecticut - Storrs
Helen Koulidobrova, University of Connecticut - Storrs
Ronice de Quadros, Universidade Federal de Santa Catarina
Deborah Chen Pichler, Gallaudet University

For both child and adult bilinguals, both languages are activated all the time (Kroll et al. 2006); therefore, the languages may influence each other in numerous ways, including the phenomena known as cross-language influence and code-switching. We argue that these two phenomena are essentially non-distinct, and simply fall out from the architecture of the language faculty as instances of what we call 'language synthesis', which results from spelling-out items from both vocabularies, permitted as long as all featural specifications are satisfied (MacSwan 2000). We support this view with data from WH-questions produced by bimodal bilinguals, children simultaneously acquiring sign/spoken languages. Effects of the sign language include significantly early production of WH-in-situ in speech; effects of the spoken language include very high proportions of WH-initial structures in sign. We conclude (with Cantone 2007) that a 'structure' from one language can be generated using 'words' drawn from the vocabulary of banother.

Notes

LUNCH SYMPOSIUM

Morphology in Second Language Acquisition and Processing

Silvina Montrul, University of Illinois at Urbana-Champaign

One of the most challenging linguistic areas to master by adult second language learners is morphology. Even at very advanced levels of proficiency, learners experience non-native production (omissions and substitutions) of gender, agreement, tense, etc. Morphological variability in production and comprehension and the source of these errors have been intensely debated in second language acquisition, with some models invoking deficits at the representational level and others with language processing. This colloquium will present the most recent research on the representational problem (Lardiere), and the processing problem of inflectional (Hopp) and derivational morphology (Clahsen) and discuss whether and how second language speakers differ (or not) from native speakers.

LUNCH SYMPOSIUM

Modeling morphological competence in a second language: a feature-based approach.

Donna Lardiere, Georgetown University

There are several possible points along the "computational path" in the production and comprehension of inflectional morphology for breakdowns to occur, depending on whether an abstract morphosyntactic feature, its phonological exponence, and its various conditioning factors have been completely acquired (morphological knowledge), and/or whether a learner can access or process a form quickly enough in real time (morphological performance). This talk will focus on the feature/competence side of the problem, illustrating with an example from native English speakers' difficulty in acquiring L2 Korean pluralization. Preliminary results from an ongoing SLA study (in collaboration with Sun Hee Hwang) will be presented and discussed.

LUNCH SYMPOSIUM

The on-line integration of inflection in L2 processing: Evidence from visual world eyetracking

Holger Hopp, University of Manheim

Recent research investigates whether inflectional variability in adult L2 production and comprehension relates to problems in accessing and integrating morphology in the real-time processing of the L2. In this paper, I report a visual-world eyetracking study that explores whether advanced to near-native L1 English speakers use gender and number cues predictively in processing complex determiner phrases (DPs) in German. In particular, the study investigates whether L2ers exploit inflectional cues differently depending on their type (gender vs number) and their realization in the DP (on determiners vs adjectives). The results will be discussed in the context of current approaches to inflectional variability in adult L2 acquisition and processing.

LUNCH SYMPOSIUM

Derivational and inflectional processes in native and non-native language comprehension: Evidence from masked priming experiments

Harald Clahsen, University of Potsdam

Realization-based theories of morphology assume specific morpholexical representations for derived words that distinguish them from the products of inflectional or paradigmatic processes. Experimental psycholinguistic studies, by contrast, have examined surface level and meaning-level properties of morphologically complex words, without paying much attention to the morphological differences between inflectional and derivational processes. In this presentation, I will report results from a series of masked priming experiments investigating the processing of inflectional and derivational phenomena in native (L1) and non-native speakers (L2) of typologically different target languages. The results were consistent across different target languages and different L1 backgrounds showing priming contrasts between inflection and derivation. These contrasts (which were particularly striking for the L2 groups) provide support for the proposal that derived and inflected words have different morpholexical representations and that these affect online processing, both in the L1 and the L2.

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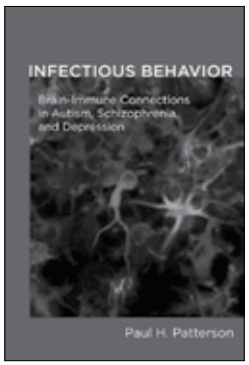

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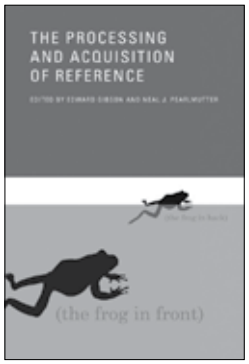

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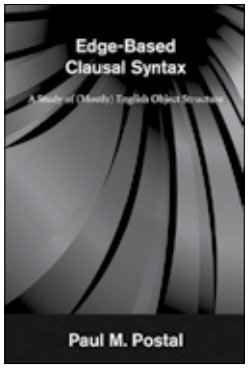

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Session A--Metcalf Small

Early grammatical growth over time distinguishes two subgroups of children with ASD

Laura Mesite, University of Connecticut - Storrs
James Dixon, University of Connecticut - Storrs
Saime Tek, Johns Hopkins University and Kennedy Krieger Institute
Deborah Fein, University of Connecticut - Storrs
Letitia Naigles, University of Connecticut - Storrs

Individuals with autism spectrum disorders (ASDs) may cluster into subgroups according to their grammatical abilities, with one subgroup showing intact knowledge while another demonstrates a specific deficit. We test this proposal by investigating the developmental course of Brown's 14 grammatical morphemes in a diverse sample of children. TD and ASD children were recorded every four months for two years; their speech was coded for grammatical morphemes and for nouns and main verbs. At study completion, the LF (low-functioning) group produced significantly fewer morphemes than the TD or HF (high-functioning) groups. Longitudinal growth curve models revealed that the TD group showed steeper slopes (i.e., increases in use) than the HF for only 3 morphemes, but steeper slopes than the LF group for 13 morphemes; the HF group showed steeper slopes than the LF primarily for morphemes of the VP. These findings illustrate the developmental origins of two clusters of individuals with ASD.

Session B--East Balcony

The acquisition of NP recursion in English-speaking children

Ana-Teresa Perez-Leroux, University of Toronto
Anny Castilla, State University of New York - Fredonia
Diane Massam, University of Toronto
Susana Bejar, University of Toronto

Recursion, the ability to iterate syntactic constituents inside constituents, presents substantial difficulties in acquisition. Recursion is the outcome of merge (an unrestricted operation) and selection and labeling (which are language specific and must be learned). In an elicited production study, we compare children's ability to produce second level recursive comitative PPs (*the baby with the woman with the flowers*) and genitives (*Elmo's sister's ball*). Both types of nominal recursion depend on early-acquired grammatical structures and semantic primitives (possession and modification), but differ in the complexity of the selection relations. Children aged 3 to 5 (n=46) had no difficulties producing three coordinated NPs, but had substantial difficulties with PP and genitive recursive structures. We conclude that the difficulties cannot lie in depth of structural embedding, but in the complexity of the selectional tasks. Our results have implications about the independence of syntactic (phrasal) development from lexical (selectional) development.

Notes

Session C--Conference Auditorium

Conversational implicature in 3- to 8-year-old children

Jessica Sullivan, University of California - San Diego
Kathryn Davidson, University of California - San Diego
David Barner, University of California - San Diego

Children struggle to compute scalar implicatures - e.g., John ate *some* of the cake (therefore not *all* of it). Based on this, some have concluded that children have low pragmatic competence. However, others have argued that children are pragmatically sophisticated but that they fail to compute scalar implicatures because they lack knowledge of how conventionalized scalar items like "some" and "all" are related (i.e., that they form a scale). Here, we asked why children sometimes fail to compute scalar implicatures, and whether they might be pragmatically competent despite these failures. To this end, we tested children and adults on a series of tasks that measured whether they could successfully compute conversational implicatures when these implicatures did not rely on knowledge of conventionalized scales. We compared these data to datasets exploring children's interpretations of scalar implicatures. Implications for the studies of scalar implicature, word learning, and pragmatics are discussed.

Session A--Metcalf Small

Early joint attention predicts children's subsequent performance on preferential looking tasks

Jinhee Park, University of Connecticut - Storrs
Saime Tek, Johns Hopkins University
Deborah Fein, University of Connecticut - Storrs
Letitia Naigles, University of Connecticut - Storrs

Children's engagement in joint attention (JA) predicts their subsequent language *production*, both in typically-developing (TD) children and those with autism spectrum disorders (ASD); does this relationship also hold for language comprehension? In this longitudinal study, we investigated the relationship between TD and ASD children's response to/initiation of JA (RJA, IJA) and their later performance on intermodal preferential looking (IPL) tasks. Children's play sessions with their parent were coded for episodes of RJA and IJA. Children also viewed IPL videos assessing word learning (NounBias, ShapeBias) and grammar comprehension (WordOrder, Aspect). TD children engaging in more JA at early visits performed better with WordOrder and Aspect later on, whereas ASD children engaging in more RJA early on performed better with the NounBias and ShapeBias at later visits. Thus, JA may play different roles in the language acquisition of TD children and those with ASD; alternatively, JA may influence word learning earlier in development than grammatical knowledge.

Session B--East Balcony

A Constraint on Argument Ellipsis in Child Japanese

Koji Sugisaki, Mie University

One major property of Japanese null arguments is that they permit sloppy-identity (as well as strict-identity) interpretation. Japanese contrasts with Spanish, whose null subjects only allow strict interpretation. In order to account for this difference, Saito (2007) and others proposed that Japanese allows ellipsis of argument DPs. According to Saito, *Argument Ellipsis* (AE) is possible in Japanese because it lacks agreement. Saito's parametric proposal predicts that if Japanese has a construction in which arguments must participate in agreement, AE should be disallowed in that construction. A relevant case is provided by *wh*-questions. According to Chomsky (2000), *wh*-phrases must undergo agreement with C even in *wh*-in-situ languages like Japanese. If the ban on applying AE to *wh*-phrases directly reflects properties of UG, it is predicted that Japanese-speaking preschool children should already know this constraint. The results of my experiment indicate that children have the knowledge that *wh*-phrases cannot undergo AE.

Session C--Conference Auditorium

Semantic and Pragmatic Meaning of the Existential Quantifier *Some* in Second Language Acquisition

Utako Minai, University of Kansas
Naoko Takami, University of Kansas

The quantifier *some* is ambiguous: its semantic meaning is 'at least one, possibly all'; pragmatically, it conveys 'not all', due to *scalar implicature* (SI). How the SI is derived in the mind has been under debate: Relevance Theory claims that the SI derivation requires effort; Default Theory hypothesizes automatic, effortless SI derivation. Given that adult L2 learners may recruit fewer processing resources for L2 processing than for L1 processing (White & Juffs, 1998), Relevance Theory predicts *fewer* SI's for learners than for native speakers, whereas Default Theory predicts no differences in SI generation between natives and learners. Slabakova (2010) examined these predictions, demonstrating that learners exhibited the pragmatic interpretation of *some* more frequently than native English speakers, a finding consistent with neither of the hypotheses. In a study following Slabakova (2010), with methodological modifications, we found fewer SI's for learners than natives, consistent with the Relevance Theory-based prediction.

Notes

Session A--Metcalf Small

The Origins of Syntactic Bootstrapping: A Computational Model

Michael Connor, University of Illinois - Urbana-Champaign
Cynthia Fisher, University of Illinois - Urbana-Champaign
Dan Roth, University of Illinois - Urbana-Champaign

We present a computational model of the origins of syntactic bootstrapping, based on systems for automatic semantic-role labeling (SRL). SRL models learn to identify sentence constituents that fill semantic roles, and to determine their roles. The present 'BabySRL' instantiates the structure-mapping account of syntactic bootstrapping (Fisher et al., 2010). On this account, sentence comprehension is grounded in the acquisition of some concrete nouns. Once some nouns are known, children treat each noun as a candidate argument, and thus find the *number of nouns* in a sentence inherently meaningful. Moreover, children's representations of sentences, though partially specified, are abstract, permitting generalization of new syntactic learning to new verbs. We used the BabySRL to investigate the consequences of these assumptions for learning from natural corpora of child-directed speech. The results yield strong evidence that partial sentence representations grounded in a set of nouns are useful as a foundation for further syntactic learning.

Session B--East Balcony

Abstract CP/IP configuration in child Japanese

Tetsuya Sano, Meiji Gakuin University

In this paper, based on new observations on children's interpretation of a Japanese focus marker *dake* (='only'), I argue that Japanese children at age 4-5 already have abstract structural CP/IP configuration in their grammar. Children at age 3-6 often wrongly associate *dake* or *only* in the subject with a following object phrase ('the spreading error') (Crain et al. 1994, Endo 2004). I examined whether Japanese children wrongly associate *dake* in the subject with a *preceding* scrambled/topicalized object phrase. Consequently, while some spreading errors were found when the object is scrambled, there were no spreading errors at all when the object is topicalized. Based on this observation and Notley et al.'s (2009) analysis of the spreading error, I argue that the topic phrase is in the domain of CP, which is structurally higher than IP, in child Japanese.

Notes

Session C--Conference Auditorium

Electrophysiological markers of interference and structural facilitation in native and nonnative agreement processing

Darren Tanner, Pennsylvania State University
Janet Nicol, University of Arizona
Julia Herschensohn, University of Washington
Lee Osterhout, University of Washington

This study investigates structural influences on attraction interference during subject-verb agreement processing in monolingual English speakers and highly advanced native Spanish learners of L2 English using event-related brain potentials. Results showed qualitatively similar neural signatures in response to processing agreement violations across both groups ('P600' effects). However, the magnitude of the P600 effect was modulated both by the syntactic complexity of the subject noun phrase (NP) and the availability of conflicting information about the grammatical number of the subject NP. These results suggest a strong continuity in the neural substrates of L1 and and L2 processing. Moreover, the patterns of attraction interference and structural modulation suggest that learners can go beyond strictly shallow parses of L2 sentences and make full use of subtle syntactic cues during language comprehension.

Session A--Metcalf Small

Usage Uneveness in Child Language Supports Grammar Productivity

Charles Yang, University of Pennsylvania

The usage based learning approach identifies low usage diversity with non-productivity (Tomasello 1992, 2000, Pine & Lieven 1997). However, this intuition has never been rigorously evaluated, as no statistical test was used to show the unevenness in linguistic combinations is **incompatible** with the grammar based view (cf. Valian et al. 2008). We propose a mathematically precise formulation of usage diversity building on well known distributional properties of language (Zipf 1949). Using the diversity in determiner-noun combination as a case study (Pine & Lievin ibid, Valian et al. ibid), we show that early child language is statistically indistinguishable from a productive rule that independently combines these two syntactic categories. Furthermore, the memory plus retrieval approach advocated in the usage based literature (Tomasello 2000) under-predicts usage diversity in child language.

Session B--East Balcony

Testing for crosslinguistic influence and exposure effects in the bilingual acquisition of specific indefinite objects

Sharon Unsworth, University of Utrecht

Various studies have shown surface overlap to be a condition on crosslinguistic influence in bilingual acquisition (e.g., Hulk & Müller 2000; Nicoladis 2003), with the extent of this influence mediated by factors such as amount/type of exposure (Sorace & Serratricec 2009; Paradis, 2003). The goal here is to investigate the existence of crosslinguistic influence and its relation to such factors for the interpretation of specific indefinite objects. Truth value judgement data are presented for each language from simultaneous bilingual English/Dutch children (n=120, age 3 to 17); results show crosslinguistic influence from Dutch to English, but not vice versa. The success of bilingual children in acquiring this aspect of Dutch is all the more remarkable given the paucity of scrambled (= specific) indefinites in the input (van Bergen & de Swart 2010), calling into question the overall bilingual delay predicted by constructivist accounts such as Gathercole (2007).

Session C--Conference Auditorium

Task effects in L2 online processing of subject-verb number agreement

Zhijun Wen, University of Hawaii - Manoa
Bonnie D. Schwartz, University of Hawaii - Manoa and Radboud University Nijmegen

L2 processing studies indicate that even advanced L2ers whose L1 lacks grammatical subject-verb number agreement are insensitive to online violations of such agreement in English. However, those studies require participants to focus on comprehending overall sentence meaning. This focus may tempt L2ers to strategically overlook agreement information, because heeding agreement typically does not aid meaning comprehension. To investigate L2ers' (in)sensitivity to subject-verb number (dis)agreement, this study employs a structure-focused online task—acceptability-judgment self-paced reading. The results from 10 L1ers and 16 advanced Chinese L2ers of English reveal that L2ers, like L1ers, are sensitive to subject-verb number disagreement. In light of these results, this study argues that task demands make a difference in L2 (and L1) morphosyntactic processing, and that to compare L1 and L2 processing on equal footing, researchers should seek online methodologies that focus participants on fully specified structural processing so that L2ers' detailed processing may not be concealed.

Notes

PLENARY ADDRESS

Bilingual Development and Language Assessment

Cornelia Hamann
University of Oldenburg

The situation of children growing up in multilingual settings is becoming more and more frequent. For many of these children, the acquisition of the national language begins with organized (pre-) school, which makes them early second language (L2) learners. This means that these children very often perform significantly below monolingual children on standardized language measures. This poor performance combined with the fact that areas of difficulty are often identical in bilingual children and children with Specific Language Impairment has been shown to lead to both over-diagnosis and under-diagnosis of SLI, with damaging consequences on the individual and social level. This talk explores similarities and differences in bilingual and impaired language development pointing out consequences for the search for clinical markers but also for theories of language development and impairment. I will also report on projects developing within and from COST 0804 which are addressing the problem in various ways, trying to further our understanding of what constitutes normal language development in bilingual/second language children and to develop crosslinguistic tools for language assessment. Especially the second goal calls for new measures and assessment procedures concentrating on tasks involving non-word or sentence repetition, executive function and linguistically complex constructions such as question formation and subordination.

POSTER SESSION II

Harmonic Cues for Speech Segmentation: A Cross-linguistic Corpus Study on Child-directed Speech

F. Nihan Ketrez, Istanbul Bilgi University

Previous studies show that vowel harmony, especially when used together with other cues such as word stress, can signal word boundaries in harmonic languages. These studies are based on artificially created languages where harmonic cues perfectly overlap with potential word boundaries, although this is not necessarily the case in natural languages. It is not clear whether languages provide useful cues to a learner, who is apparently capable of making use of such cues when and if they are available. In this corpus study, Turkish and Hungarian child-directed speech are studied and contrasted with two disharmonic languages, Farsi and Polish. It was observed that in harmonic languages (but not in disharmonic ones) harmonic vowel sequences are more likely to appear within words, and disharmonic sequences mostly appear at word boundaries, suggesting that harmonic languages provide a learner with regular cues that could potentially be used for word segmentation.

POSTER SESSION II

Crosslinguistic differences of autistic children's reflexive pronouns: English vs. Greek

Arhonto Terzi, Technological Educational Institute of Patras
Theo Marinis, University of Reading
Konstantinos Francis, University of Athens
Angeliki Kotsopoulou, Technological Educational Institute of Patras

This study investigated comprehension of strong, clitic and reflexive pronouns by 20 Greek-speaking 5-8 year old high functioning children with ASD, and a group of age and vocabulary- matched controls. The two groups did not differ on non-verbal abilities, but ASD children performed lower on morphosyntax and significantly lower on pragmatics. The two groups did not differ on reflexives, with performance close to ceiling, by contrast to the English-speaking ASD children (of lower verbal and nonverbal abilities), studied by Perovic et al. (to appear). We attribute ASD children's good performance in this domain to the nature of Greek reflexives, which do not involve chain formation, and to children's (high) verbal and non-verbal abilities. The two groups of Greek-speaking children did not differ on the comprehension of strong pronouns either, but ASD children performed significantly lower on clitic pronouns (88.3% vs. 99.2%), in a pattern yet to be understood.

POSTER SESSION II

Notes

POSTER SESSION II

Clitic production across tasks in young French-speaking children

Mihaela Pirvulescu, University of Toronto - Mississauga
Ana-Teresa Perez-Leroux, University of Toronto
Yves Roberge, University of Toronto
Nelleke Strik, University of Toronto

Several experimental studies report optionality in object clitic production in early French L1 while these pronouns are obligatory in the target grammar. This presentation investigates the syntactic dimensions of the phenomenon of clitic optionality in children based on a minimalist analysis of the recoverability of silent arguments. A comparison between different elicitation methods (indirect address, direct address and manipulation of tense) reveals significant differences in clitic production across tasks. We propose an analysis where linking to discourse is pragmatic, but is represented syntactically (Sigurðsson 2011). The early grammar has available a referential null object (along with the clitic construction, Pérez-Leroux et al. 2008) which must be C-edge linked in the left periphery. This approach refines a traditional view in acquisition that children allow argument drop because they over-rely on access to discourse (Allen 2000), by articulating a full syntactic account of how this happens.

POSTER SESSION II

Ambiguous anaphora in the L2 English and L2 Spanish

Elena Valenzuela, University of Ottawa
Juana Liceras, University of Ottawa
Luz Patricia Lopez, University of Ottawa

The Position of Antecedent Hypothesis (PAH) (Carminati 2002) argues that, in anaphoric constructions, null pronouns prefer the antecedent in Spec IP while overt antecedents prefer to be coindexed with the antecedent in object position. This asymmetry is based on the notion that null subject pronouns are less specified and therefore prefer subject (Spec IP) antecedents because they are more salient while overt subject pronouns prefer low□salience antecedents. The present study explores to what extent this processing bias in null subject languages can be 'delearned' or 'deactivated'. Data from a bidirectional study (L1 Spanish/L2 English and L1 English/L2 Spanish) which investigates the extent to which this antecedent bias can be deactivated. Data from four experimental tasks shows that both acquiring and delearning this discourse property are problematic for learners.

POSTER SESSION II

The acquisition of distributivity and plurality

Elena Pagliarini, University of Verona
Gaetano Fiorin, University of Utrecht
Jakub Dotlacil, University of California-Santa Cruz

Experimental studies show that the distributive reading of plural definite noun phrases (PDs) is degraded for adults. In this study, we tested the hypothesis that the distributive interpretation of PDs is degraded because of the competition with distributive quantifiers (DQs.) That is, the distributive reading of "the boys are building a boat" is degraded because there is a competing form, "each boy is building a boat", which expresses that reading unambiguously. We administered a truth-value judgment-task to a group of Italian children aged between 4 and 13 years and a group of adults. In support of our hypothesis, the results show that (i) there is a significant correlation between the children's ability to exclude the collective interpretation of DQs and their ability to reject the distributive reading of PDs and (ii) none of the children who rejected the distributive reading of the PDs accepted the collective reading of the DQs.

POSTER SESSION II

Modelling the acquisition of the English past-tense

Emmanuel Keuleers, Ghent University, Belgium
Ben Ambridge, University of Liverpool

The acquisition of the English past-tense system has long been considered a central test case in the debate between "words and rules" and "analogical" approaches to language acquisition. Although there exist many previous experimental and modelling studies, the present study is the first to directly compare different computational models on their ability to predict children's experimental judgment and production data (obtained at 6-7 and 9-10). Whilst both single-route (*k-nearest neighbor/exponential decay*) and multiple-rules models (Albright & Hayes, 2003) gave good coverage of the data, adding a default rule (add '–ed') mechanism did not significantly improve model fit.

POSTER SESSION II

Spontaneous verbal encoding of visual objects in 24 month olds

Manizeh Khan, Harvard University
Amy Geojo, Harvard University
Shanshan Wang, Harvard University
Jesse Snedeker, Harvard University

Recent studies have shown that adults activate the labels of visually-presented objects, even in nonverbal tasks. Understanding the development of spontaneous verbal labeling could shed light on developmental differences in language processing. The current study uses a preferential-looking phono-semantic priming paradigm, adapted from Mani & Plunkett (2010), to investigate verbal encoding in 24-month-olds. On each trial, infants initially saw a prime picture (*cup*), followed by a split-screen with a either a related target paired with an unrelated item (*dog-box*) or two unrelated items (*pen-box*). The intermediary (*cat*) is neither seen nor mentioned. Since no verbal labels were provided, any effect of phono-semantic relatedness on looking behavior would indicate that children spontaneously activated the label for the prime. 24-month-olds were less likely to look at target pictures following phono-semantically related images compared to unrelated images ($p<.05$). This suggests that spontaneous verbal encoding is an early emerging and ubiquitous aspect of cognition.

POSTER SESSION II

Asymmetry in child comprehension and production of Basque SRs and ORs

Maria Juncal Gutierrez-Mangado, University of the Basque Country
Maria Jose Ezeizabarrena, University of the Basque Country

In this paper we present the results obtained in two different production experiments eliciting Relative Clauses (RCs) in L1 Basque. Data were elicited from three groups of children, aged 4 (N=14), 5 (N=20) and 6 (N=9) as well as adults. The results suggest that Subject Relatives (SRs) are produced more accurately than Object Relatives (ORs). However, a closer examination of the overall results suggests that factors other than RC formation may have influenced these results. The main source of error in the production of ORs (over 75% of errors) seems to be directly linked with children's failure to produce the correct ergative case on the RC (overt) internal argument. Other types of errors include S-V agreement errors, passive structures (exclusive to adult data) and production of resumptive pronouns. We suggest that cues provided by case marking override other syntactic and semantic accounts in L1 Basque acquisition of RCs.

POSTER SESSION II

The relation between linguistic and conceptual development: acquiring evidentiality

Loes Koring, University of Utrecht, UiL-OTS
Hannah De Mulder, University of Utrecht, UiL-OTS

This study investigates the acquisition of evidentiality (the linguistic encoding of information source) in relation to the acquisition of source-monitoring skills in Dutch children. In two experiments we investigated both when children (age 6;0-10;0) acquire evidential verbs and when the related information source concepts come in. The evidential verbs (*lijken, schijnen*, and *lijkt-me*, all 'seem') encode direct visual, hearsay and inferential evidence respectively. Experiment 1 showed that an order exists in the acquisition of the evidential verbs. *Lijken* (direct visual) is the first to be acquired followed by *schijnen* (hearsay) and then *lijkt-me* (inferential) with *lijkt-me* posing difficulties even for 9-year-olds. Experiment 2 showed that the ability to reason about information sources conceptually develops prior to the ability to express information sources linguistically. Hence, the acquisition problem is not in the conceptual complexity of the verbs per se, but might be in mapping the right word onto the right concept.

Notes

POSTER SESSION II

Dative Alternation in Norwegian Child Language

Merete Anderssen, University of Tromso
Paula Fikkert, Radboud University Nijmegen
Roksolana Mykhaylyk, University of Tromso
Yulia Rodina, University of Tromso

This paper discusses the use of the Double Object Dative (DOD) and the Prepositional Dative (PD) constructions in Norwegian. A semi-spontaneous production experiment was carried out with 24 (4;2-6;0) monolingual children. It was predicted that the children's syntactic choices should be in line with the Dative Alternation Hypothesis: *Theme-given contexts elicit more PDs, while Recipient-given contexts elicit more DODs*. The results reveal that the context has a significant main effect on the choice of the syntactic construction. However, while Theme-givenness is a fairly strong predictor of the PD, Recipient-givenness does not yield more DODs. On the other hand, given recipients are more likely to be omitted. Thus, despite the apparent asymmetry in the results, the child grammar complies with the same general principles as the adult grammar, but they are applied in a different way.

POSTER SESSION II

Production of movement derived structures in Developmental Dyslexia

Maria Teresa Guasti, University of Milan - Bicocca
Fabrizio Arosio, University of Milan - Bicocca
Branchini Chiara, University of Milan - Bicocca
Vernice Mirta, University of Milan - Bicocca
Perugini Maria, Ospedali riuniti di Pavia

We show that Italian speaking children with developmental dyslexia (DD) are below age expectations not only in reading, but also in the production of relative clauses (RCs) and questions. We conducted two studies aiming at eliciting subject and object RCs with 24 children with DD (M=9;3, SD=1;2) and 24 age matched controls (CA) and subject and object wh-questions with 18 of these subjects. STUDY 1: Children with DD produced less RCs than CA controls and simplified more or produced declaratives, similarly to younger children. STUDY 2: Children with DD produced less correct questions than CA controls. In contrast to RCs, the percentage of correct structures is higher and less qualitative differences are observed between DD and controls. Our data raise the question of the relation between SLI and DD and suggest that the mechanisms for deriving RCs and Wh-questions are distinct.

Notes

POSTER SESSION II

Evaluating syntactic production in young children with and without language delays

Jennifer Roberts, Hofstra University
Evelyn Altenberg, Hofstra University
Hollis Scarborough, Haskins Laboratories

The Index of Productive Syntax (IPSyn) quantitatively and qualitatively measures syntactic development in preschool-aged children (Scarborough, 1990). It involves examining a language sample for the presence of 0-2 exemplars of 59 syntactic structures which are organized into four subtests: noun phrases, verb phrases, questions and negations, and sentence structures. We examined syntax production in 30 and 42-month old late-talking and typically-developing children to determine, for each of the structures of the IPSyn, the percentage of children who produced two instances of that structure, and to characterize their syntactic profiles as a function of age and language ability. Participants were drawn from the Weismer corpus of CHILDES (MacWhinney, 2000). We found that children who are either younger or late talkers have lower overall and subtest IPSyn scores than older or typically developing children, and that some structures, for example, noun and subject-verb, are not particularly useful in discriminating between the groups.

POSTER SESSION II

Processing and prediction in pragmatic inferencing: Understanding task-dependent effects in the generation of scalar implicatures

Yi Ting Huang, University of Maryland - College Park
Jesse Snedeker, Harvard University

Children's ability to generate basic pragmatic inferences is strongly task dependent. Recent research from real-time interpretations in adults may offer insights into these patterns. While scalar implicatures are delayed even in adults, access to inferred interpretations can occur rapidly when referents are labeled consistently (2-of-4 socks as '*some*'). This study examines whether the ability to pre-encode referents can also facilitate children's access to inferred interpretations. Using an eye-tracking paradigm, participants heard instructions from quantifier (<many, all>) and predicate (<start, finish>) scales and saw displays depicting these events. Adults' eye-movements indicated that they restricted reference immediately after both weak and strong expressions. In contrast, children increased referent looks following strong terms but were equivocal following weak terms, failing to resolve referents until the final noun. These results suggest that children's interpretations are less likely to be informed by top-down encoding procedures and instead may rely more heavily on bottom-up lexical processing.

POSTER SESSION II

Acquiring Spanish Psych-Verbs: Maturation or Continuity?

Inmaculada Gómez Soler, University of North Carolina - Chapel Hill

This poster studies the acquisition of class-III psych-verbs (1) by Spanish-speaking children.

(1) A María le gusta el chocolate
To María le-dat likes-3p.s. the chocolate
María likes chocolate

It contributes to the debate on grammatical continuity by providing evidence against Borer and Wexler's (1987, 1992) *Maturation Hypothesis*. The verbs analyzed in this project provide a unique vantage point because they allow us to examine the two different versions of the *Maturation Hypothesis:* the *A-Chain Deficit Hypothesis* and the *External Argument Requirement Hypothesis.* My subjects showed a rapid and almost flawless production (115/123) and quite good comprehension (180/280) of these predicates. This is the opposite of what we would expect if the construction were maturationally delayed. On the contrary, the data are consistent with Pinker's (1984) *Continuity Hypothesis.* Hence, we conclude that children's ability to deal with the unaccusative structure of psych-verbs comes from UG and is not subject to maturation.

POSTER SESSION II

18-month-old toddlers don't utter words but they know where noun and verbs must occur

Perrine Brusini, Laboratoire de Sciences Cognitives et Psycholinguistique
Ghislaine Dehaene, Unicog/ Neurospin /Inserm
Anne Christophe, Laboratoire de Sciences Cognitives et Psycholinguistique

We used the EEG paradigm of Bernal et al (2010) with 18-month-old French toddlers to assess their ability to analyse syntax on-line. Toddlers listened to grammatical and ungrammatical sentences while we recorded their EEG. Crucially, grammatical and ungrammatical sentences could not be distinguished by computing transition probabilities between pairs of words: this was done by putting the ambiguous French function word 'la' before each critical word. For example, the noun 'fraise' (*strawberry*), was used inappropriately in '*je *la fraise* parfois' (*I strawberry it sometimes*) but correctly in 'je prends *la fraise*' (*I take the strawberry*). The results showed that the ungrammatical condition evoked different potentials from the grammatical condition. Those potentials show that 18- month-olds noticed that verbs and nouns were placed in inappropriate positions in ungrammatical sentences, despite the fact that their immediate context was the same as in grammatical sentences.

Notes

POSTER SESSION II

Does bilingual infants' input provide consistent cues to the language being spoken?

Krista Byers-Heinlein, Concordia University

Theoretical work on early bilingualism has emphasized the need for infants to discriminate and separate their languages. Three types of stable cues that might enable language separation have been emphasized: person cues (one-person-one-language), context cues (languages used in non-overlapping contexts), and sentence-level cues (the language of each sentence can be categorized by rhythm). Data from a linguistically and culturally diverse group of 181 bilingual parents of 1- and 2-year-olds suggest that these cues are often unavailable: 96% of parents sometimes spoke both languages to their child, 59% used the two languages in at least one overlapping context, and 90% regularly mixed their languages in the same sentence (borrowing/code switching). Further analyses indicated that higher rates of parental language mixing predicted smaller vocabulary sizes amongst their children. These results suggest that the average early bilingual environment might provide fewer consistent cues to language than previously thought, potentially impacting acquisition.

POSTER SESSION II

Learning phonemes from faces: The role of speaker identity in non-native phoneme discrimination

Katie Von Holzen, University of Göttingen
Nivedita Mani, University of Göttingen

Exposure to one's native language alters infant phonetic perception by 6 months of age (Kuhl et al., 2006). However, the consistent pairing of two sounds with two distinct objects can improve infants' discrimination of the sounds (Yeung and Werker, 2009). If consistent object-sound pairing can aid discrimination of speech sounds, does the consistent pairing of speakers with speech sounds similarly improve infants' discrimination of non-native contrasts? We familiarized 9 month old and 30 month old German infants to consistent speaker-sound pairings, i.e., hearing one speaker saying one sound and a second speaker saying the second sound, and inconsistent speaker-sound pairings, i.e., hearing both speakers saying both sounds. Results suggest that consistent pairing of speaker identity and speech sound improves infants' sensitivity to a non-native speech sound contrast, even as late as 30-months of age.

Notes

POSTER SESSION II

Taking their time: Access and planning in children's responses to questions

Marisa Tice, Stanford University
Eve V. Clark, Stanford University
Susan C. Bobb, University of Göttingen

When adults converse, they allow 'one speaker at a time', with transitions minimized and little overlap in speech. Young children, though, are slow in turn-taking. We hypothesized that it requires practice to plan turns appropriately, so children should get better with age. In answering questions, children should respond faster to simpler questions (*yes/no*) than more complex ones (*wh-*). Analysis of 900 Q-A gap times from recordings of 5 parent-child pairs in six age-slices (1;8 to 3;4) showed that adult response times to child questions remain consistent regardless of child age, while children gradually reduce their response times to questions. By 3;4, children approach adult timing, but take longer to answer *wh*–question —more complex—than *yes/no* questions ($p<.05$). Our findings support the view that children's ability to take turns on time depends on their planning skills in retrieving words and constructions for the information they wish to convey.

POSTER SESSION II

Speeded Production of German Past Participles in Children and Adults

Elisabeth Fleischhauer, University of Essex
Harald Clahsen, University of Essex

The current study investigates automatic processes involved in children's spoken production of morphologically complex past participles using a speeded-production task. 40 children (6;3-10;7 years) and 20 adult controls were asked to produce as quickly as possible past participle forms for corresponding verb stems which varied in terms of regularity (regular *–t*, irregular *–n*) and word-form frequencies (high, low). The *production latencies* were measured. Additionally, participants' auditory working memory was assessed (Tewes 1983, 1991). The most interesting finding from this experiment is that children performed like adults with low working memory, demonstrating an advantage for high-frequency irregulars paired with a disadvantage for high-frequency regulars. We interpret these results from a words-and-rules perspective and conclude that children and adults use the same mechanisms to produce inflected words and that child-adult differences are due to slower and less accurate lexical access and retrieval.

POSTER SESSION II

Tough-Adjectives are Easy to Learn

Misha Becker, University of North Carolina - Chapel Hill
Bruno Estigarribia, University of North Carolina - Chapel Hill
Duna Gylfadottir, University of North Carolina - Chapel Hill

Previous studies of *tough*-adjectives have found a delay in the ability of young children to correctly interpret the subject of a *tough*-construction (*John is tough to please*) as the logical object of the embedded verb (i.e. the one pleased); instead, children initially interpret the subject as the "pleaser" (C. Chomsky 1969, i.a). Our research shows, however, that when presented with an *inanimate subject*, children as young as 4 years have no difficulty correctly interpreting *tough*-constructions. Using a novel adjective learning task with 4- to 7-year-olds, we show that children categorize adjectives used with inanimate subjects as tough-adjectives (given appropriate context), and they categorize adjectives used with animate subjects as control adjectives (e.g. *eager*). We propose (a) inanimate subjects are the crucial cue for children to learn *tough*-constructions, and (b) previously cited difficulty with this construction stems from the use of animate subjects in past studies.

POSTER SESSION II

Children's production of person and number inflectional transitions in the German verb paradigm

Sarah Girlich, Max Planck Institute for Evolutionary Anthropology
Elena Lieven, Max Planck Institute for Evolutionary Anthropology
Michael Tomasello, Max Planck Institute for Evolutionary Anthropology

In the present two production studies, we present data on the acquisition of parts of the German present tense inflectional paradigm of verbs. We investigated whether 3;6 year-old German children were able to switch across verb-inflections on familiar and novel verbs. The main question addressed the frequency of transition. A high frequent transition, e.g. 1st person singular – 2nd person singular, should show better performance, than a low frequent transition, e.g. 3rd person singular – 3rd person plural. The results showed that children were equally good in inflecting familiar and novel verbs in high frequent transitions. In low frequent transitions we found a main effect on familiarity, i.e. children were better at inflecting familiar verbs, than novel verbs. We conclude that what matters is not the frequency of a given inflection and not even the frequency of a single item, but the frequency of a particular transition. and the combined strategy will be compared with each other.

Notes

POSTER SESSION II

Do gestures follow speech in bilinguals' description of motion?

Şeyda Özçalışkan, Georgia State University

Gestures constitute part of what learners acquire in a new language and show variability across different languages. But how closely is gesture tied to the language one speaks? We explored this question by studying the speech and gestures produced by 10 adult advanced second language learners of English (Turkish as L1) in comparison to 10 adult monolingual English and 10 adult monolingual Turkish speakers. We focused on the expression of physical motion, and asked speakers to describe motion scenes first with their words (*speech condition*) and then with their hands (*gesture-only condition*). We found strong *crosslinguistic differences* in monolingual and bilingual speakers' speech and gesture patterns in the speech condition, but close *crosslinguistic similarities* in their gestures in the gesture-only condition. Our findings suggest that acquisition of native-like gesture patterns takes longer to establish than acquisition of native-like speech patterns, and gestures follow language-specific patterns only when accompanied by speech.

POSTER SESSION II

Mapping Intransitive Verbs to Self-Propelled Actions

Angela Xiaoxue He, University of Maryland - College Park
Jeffrey Lidz, University of Maryland - College Park

Infants have been shown to develop expectations about the link between a word's grammatical category and its likely meaning during the 2nd year of life (Waxman & Markow, 1995; Waxman & Booth, 2001), and their knowledge that verbs label event categories are acquired by 21 months (Bernal et al, 2007). However, given the results of the previous studies that have shown infants' sensitivity to the distributional features of the verb category by 14 months (Peterson, 2006; Shi & Melancon, 2010), it is surprising that the link between verbs and events is acquired only at 21 months. The current study, using a habituation-switch paradigm, shows that 14-18 month olds are able to map intransitive verbs to self-propelled events. These results suggest that acquisition of the link between verbs and events follows shortly after the acquisition of the distributional properties of verbs.

Notes

POSTER SESSION II

Development of locative expressions by Deaf and hearing Turkish children: Are there modality effects?

Beyza Sumer
Inge Zwitserlood
Pamela Perniss
Asli Ozyurek
(Radboud University Nijmegen and Max Planck Institute for Psycholinguistics)

This study investigates the development of expressions of spatial relations by native Deaf children learning Turkish Sign Language (TİD) (N=7; mean age: 7.9) and by comparing them to native adult TİD users (N= 7; mean age: 28) as well as to age matching Turkish speaking children (N=7; mean age: 7.9) in Istanbul. The participants were asked to describe the pictures containing configurations of IN, ON, and UNDER with various objects. The results indicate that Deaf adults and children used mostly classifier predicates (morphologically complex predicates to express location or movement of entities in SLs) in an analogue way to express relations, but Deaf adults also used relational lexemes (mostly for IN and UNDER relations), which were rarely used by the Deaf Children. When compared to age-matched hearing children, Deaf children expressed the relations between the objects as often as the hearing children and in the same order; Ground before Figure.

POSTER SESSION II

Acquisition of discourse constraints on the use of Japanese null pronouns

Tokiko Okuma, McGill University

This study extends Belletii, Bennati & Sorace (2007) to test the Interface Hypothesis (Tsimpli & Sorace, 2006) through investigating acquisition of discourse constraints (topic shift) in the use of subject and object pronouns by advanced L1 English speakers of L2 Japanese. The results of an off-line experiment challenge Belletii, Bennati & Sorace (2007) in two respects. First, subjecthood rather than topichood determines preferred choice of antecedents for pronouns in Japanese. This is compatible with Carminati (2002), which proposes that antecedent preference is primarily due to subjecthood (i.e. being in SpecIP) rather than topichood (i.e. being in TopP). Second, the advanced L2 Japanese speakers had different interpretations of null pronouns, not overt pronouns, from monolinguals. These results oppose the Interface Hypothesis, suggesting that [-subject shift] requirement for null pronouns, not [+topic shift] requirement for overt pronouns, can be a residual problem in the L2 grammar.

POSTER SESSION II

Why "Jisung is play soccer" sounds natural for L2 learners

Kitaek Kim, University of Hawaii - Manoa
Hyun-Kwon Yang, Seoul National University

It has been widely observed that L2 learners of English erroneously overgenerate *be* with thematic verbs (e.g. *Jisung is play soccer*). The syntactic properties of overgenerated-*be* have been controversial between topic-marker (e.g. Huebner, 1983) and early tense/agreement-marker (e.g. Ionin & Welxer, 2002). Kim (2011) argues that for learners with topic-prominent native languages, their overgenerated-*be* initially serves as topic-marker, and subsequently develops into tense/agreement-marker. The current study tests Kim's hypothesis using the data from an acceptability judgment and a translation task conducted with Korean-learners of English (N=162). The data show the lowest-level learners (N=58) preferred sentences with overgenerated-*be* (*Jisung is play soccer*) than grammatical counterparts (*Jisung plays soccer*) (p=.093), which reflects L1-like structure preference with overgenerated-*be* functioning as a topic-comment boundary marker. The second lowest-level learners (N=39) preferred overgenerated-*be* with uninflected verbs (*Jisung is play soccer*) than with inflected verbs (*Jisung is plays soccer*) (p=.005), reflecting the tense/agreement property of overgenerated-*be*.

POSTER SESSION II

Interpretation of scope ambiguity by Korean-speaking learners of English:The case of numerically quantified NPs and negation

Hye-Young Kwak, Korea University

This study investigates the interpretive preferences for English sentences such as *Two cooks didn't taste the soup* and *Tom didn't cut down two apple trees* manifested by Korean-speaking L2 learners. Two experiments employing a written version of a Truth Value Judgment Task (Crain & Thornton 1998) tested a total of 141 native Korean-speaking learners of English and 22 English native speakers. Both experiments explored scope ambiguity involving negation, the first with numerically quantified subject NPs, and the second with numerically quantified object NPs. The study supports O'Grady, Lee, and Kwak's (2009) processing-based account for transfer in second language acquisition, which proposes that L2 learners will transfer the dominant scope interpretation of their first language, unless there is a less computationally costly interpretation in the second language, by showing that the interpretation favored in L1 Korean is also preferred in L2 English unless the competing interpretation is less costly.

Notes

POSTER SESSION II

Learning multiple labels for a single object in Japanese children

Tessei Kobayashi, NTT Communication Science Laboratories
Toshiki Murase, Shimane University

Multiple labeling for a single object often occurs in languages with plenty of onomatopoeia such as Japanese (e.g., 'wanwan' and 'dog' for a dog). The present study addressed how children develop their ability to process multiple labels by investigating whether Japanese-learning 12-, 16-, 19-month-olds (N=80) can rapidly learn two novel words for one object under a habituation switch paradigm. During habituation, the children heard two novel words, one phonologically characteristic of a conventional word in adult-directed speech (*yamitsu*) and a baby-talk word (*tenten*) for a novel object, before they were tested for their ability to detect the switched word-object pairs. Results showed that 12-month-olds could not yet learn any labels, and 16- and 19-month-olds could learn one and two labels for one object, respectively. Interestingly, 16-month-olds preferentially learned the baby-talk word rather than the conventional word, which might reflect an advantage of the early learning of baby-talk words in Japanese.

POSTER SESSION II

Conjunction, Disjunction and Negation in Second Language Acquisition: A Study of L2 English and Japanese

Takuya Goro, Tsuda College
Utako Minai, University of Kansas

English and Japanese show contrasting scope interpretations in sentences with negation and disjunction. Grüter et al. (2010) investigated adult L2 learners' interpretation of sentences with negated disjunction, and found that English-speaking learners of Japanese converged on the target interpretation more successfully than Japanese-speaking learners of English. Grüter et al. accounted for these differing outcomes in terms of L1 transfer and learnability. We expand this line of research by examining L2 learners' interpretations of negated conjunction, in comparison with their interpretations of negated disjunction. Our experimental results partly replicated previous findings in that English-speaking learners of Japanese showed better performance than Japanese-speaking learners of English. However, the comparison between negated disjunction and negated conjunction suggests that the learnability account does not provide a comprehensive explanation for the differential success in the two L2 groups, which underscores the need for further research.

Notes

POSTER SESSION II

Word-identification and discrimination of Japanese pitch accent in preschoolers

Ryoko Mugitani, NTT Communication Science Laboratories
Akiko Hayashi, Tokyo Gakugei University

Pitch accent recognition is important in the lexical acquisition of Japanese, in which different accent patterns yield different meanings (/áme/ for *rain*, /amé/ for *candy*). The present study tested the processing of pitch accents in Japanese preschoolers (age range: 3:06-5:08 years). The results of a forced-choice paired picture identification task revealed a specific difficulty in recognizing words that contrasted solely in terms of their accent patterns. In particular, words that contrasted as regards accent on following particles, which are indistinct and often omitted in spoken Japanese, were found to be the most difficult. A subsequent discrimination task indicated that the overall correct discrimination percentage was almost the same for words contrasted by syllable structure or by pitch accent. However, accent pattern processing requires a high memory load. The overall findings suggest that syllables are primal cues, whereas accent patterns are subordinate, less salient cues for phonemic perception in Japanese preschoolers.

POSTER SESSION II

Evidence for schemas from children's English irregular past tense errors

Kyle Gorman, University of Pennsylvania
David Faber, University of Pennsylvania

Kuczaj (1977: 599) proposes that children acquiring English do not make use of the shared patterns among verbs with irregular past tense forms. This predicts that the different rates of overregularization among these verbs is due to differences in individual verbs' input frequencies (e.g., Marcus et al. 1992: 117f.), but others claim that children recognize these shared "semi-regularities". By this latter hypothesis (e.g., Yang 2002: 78f.), children are quicker to master an infrequent irregular (e.g., *wake-woke, forget-forgot*) if it follows the same irregular pattern as a frequent irregular (e.g., *break-broke, get-got*). A parametric analysis of 8,000 overregularizations spontaneously produced by fourteen English-acquiring children finds that high pattern input frequency (where "pattern" denotes a shared stem change and suffixation in the preterite) does prevent overregularization, even after individual verb input frequency is controlled for; non-parametric analysis finds that the pattern frequency is more closely correlated with overregularization rate than verb frequency.

POSTER SESSION II

Sonority hierarchy in one-month-old infants' brains

David M Gomez, Scuola Internazionale Superiore di Studi Avanzat (SISSA)
Silvia Benavides-Varela, SISSA
Ricardo A. H. Bion, Stanford University
Francesco Macagno, Azienda Ospedaliera Santa Maria della Misericordia - Udine, Italia
Marina Nespor, University of Milan - Bicocca
Iris Berent, Northeastern University
Jacques Mehler, SISSA

Many researchers have observed that both across and within languages, syllables of the kind $C_1C_2VC_3$ that present a sonority rise in their C_1C_2 cluster (e.g. *blif*) are preferred to the ones presenting a sonority fall (e.g. *lbif*). It has been shown that adult speakers tend to misperceive consonant clusters in single syllables according to their well-formedness in terms of this hierarchy. We explored whether the sonority hierarchy influences brain activity in onemonth- old infants, who listened to interleaved blocks of $C_1C_2VC_3$ syllables with either a sonority rise or fall in the C_1C_2 cluster. Functional near-infrared spectroscopy (fNIRS) showed anterior and temporal regions of the brain cortex reacting differently to sonority rises and falls in both hemispheres. Our results thus show a possible precursor of the sonority preferences of adult speakers, present before any significant articulatory experience.

POSTER SESSION II

Eleven month-old infants detect sound symbolism: Evidence from an ERP study

Mutsumi Imai, Keio University
Michiko Asano, Keio University
Mamiko Arata, National Institute for Physiological Sciences
Sotaro Kita, University of Birmingham
Keiichi Kitajo, RIKEN Brain Science Institute
Hiroyuki Okada, Tamagawa University
Guillaume Thierry, Bango University

Although it is an important thesis in traditional linguistics that the sound of a word is independent of the meaning (de Saussure, 1916/1983), many languages contain a special class of sound-symbolic words in the lexicon. An outstanding question is whether infants are sensitive to "natural" sound-meaning correlates before they have just begun word learning by biologically given, spontaneous auditory-visual integration. We investigated this question using ERP recordings. 11- to 12-month-old Japanese infants were presented with a spiky or rounded visual shape, followed by a nonsense linguistic auditory sound consisting of either voiceless stops and high vowels or nasal consonants and mid/low vowels. The results suggest that infants are sensitive to sound symbolic relationship between linguistic sound and shape. The negative-going deflection for mismatch stimuli resembles N400. This natural ability to detect sound symbolism may allow infants to anchor linguistic sound onto meaning, which in turn helps them obtain "referential insight".

Notes

POSTER SESSION II

Does "Case" Matter in the Acquisition of Romanian Relative Clauses?

Anamaria Bentea, University of Geneva

The present study investigates the acquisition of relative clauses in Romanian and aims at examining to what extent an early case disambiguation on the relative pronoun can preempt misanalyses and assist Romanian children's comprehension of object relatives. Twenty-four monolingual Romanian children (mean age 5;2) were tested on an animated picture-selection task. The 32 test items included subject relatives (SR), direct object relatives with (DORpe) or without (DOR) the case-marker *pe*, and indirect object relatives (IOR), where the relative pronoun is morphologically marked for Dative. The results obtained show that Romanian children perform almost at ceiling for SRs, whereas their comprehension scores on both DOR and IOR are very low, with no significant differences between DORpe, DOR, and IOR ($p>.1$). We suggest that Romanian children's difficulties mainly stem from the structural configuration of object relatives which prevent children from correctly mapping between arguments and surface syntactic position.

POSTER SESSION II

Past tense marking in English L2 children with and without SLI: Evidence for a Usage-Based approach

Elma Blom, University of Amsterdam and University of Alberta
Johanne Paradis, University of Alberta

This study examined regular and irregular past tense acquisition in 24 English L2 children with typical development and 24 English L2 children with SLI, matched for age (mean=5;7), exposure to English (mean=24 months), and tense-marking properties of their L1. Children were administered a past tense probe (TEGI: Rice & Wexler, 2001), and a receptive vocabulary test (PPVT-III: Dunn & Dunn, 1997). Frequency information for verbs on the TEGI was obtained from a representative input corpus. Analyses focused on whether children's correct/incorrect productions were influenced by factors such as the size of their L2 vocabulary, lemma and allomorph frequency, and verb phonological shape. Results suggest that Bybee's (2001, 2008) usage-based model of L1 past tense acquisition is also consistent with L2 past tense acquisition, and that children with SLI show specific deficits in using frequency information to acquire productive use of regular verb morphology.

Notes

POSTER SESSION II

The Influence of Attachment on Mother-Child Narrative Co-Construction and Young Children's Narrative Ability

Kimberly Kelly, University of California - Los Angeles

This study examines the influence of child attachment security and mother-child quality of interaction during shared narration on preschool children's oral narrative production. A group of ethnically diverse, middle-class children (N = 65; age M = 4;8) and their mothers were recruited. Measures included the Attachment Story Completion Task-Revised (Verschueren & Marcoen, 1994), as well as elicitation of three independent past event narrative and three mother-child shared narratives. Hierarchical multiple regression analyses revealed that for the elements of narrative stories providing details or actions, attachment had a direct impact. Having a secure relationship predicted more sophisticated and complex stories. Attachment insecurity moderated the socialization influence of the mother. Given that prior research has documented that maternal elaboration influences children's independent storytelling, the finding that insecure children appeared not to be impacted by maternal narrative style provides new insight into the factors involved in the socialization of language and cognitive skill.

POSTER SESSION II

Prosodic influence in bilingual phonological development: Evidence from a Portuguese-French first language learner

Laetitia Almeida, University of Lisbon
Maria João Freitas, University of Lisbon
Yvan Rose, Memorial University of Newfoundland

In this paper, we discuss previously unpublished longitudinal data from Liliana, a simultaneous learner of French and European Portuguese. Our corpus consists of 55 recording sessions in each language (performed between 1;1 and 3;10). We focus on the relationships between the development of segments and that of syllable structure in both of Liliana's languages. Based on a comparison of our data those from the published literature on monolingual French and Portuguese development, we argue that Liliana develops two independent systems. We further argue that interactions between these systems yield systematic segmental effects in specific prosodic contexts. Influences between the two languages only occur in prosodically 'weak' positions (second consonant of branching onsets; word-medial codas), while autonomous development is found in prosodically 'strong' positions (singleton onsets; final consonants). This evidence contradicts *a priori* predictions based on language dominance: the influence occurs bi-directionally and over the same developmental period.

POSTER SESSION II

First and Third Person Perspective in Complement Clauses and Theory of Mind

Silke Brandt, University of Basel
David Buttelmann, University of Erfurt
Elena Lieven, Max Planck Institute for Evolutionary Anthropology
Michael Tomasello, Max Planck Institute for Evolutionary Anthropology

We investigated how German-speaking children at the age of 3;5 and 4;5 interpret complement clauses with 1SG and 3SG subjects in the main clause and how this correlates with their understanding of false belief. In the 1SG condition, children from both age groups were more likely to follow an advice marked by *know* over an advice marked by *believe (I know vs. I believe the sticker is in this box)*. In the 3SG condition, only the 4-year-olds were more likely to follow an advice marked by *the frog knows* over one marked by *the cow believes.* Moreover, only the 4-year-olds' performance in the 3SG condition correlated with their understanding of false belief. This suggests that complement clauses with a 1SG subject in the main clause do not have the same meaning and structure as complement clauses with a 3SG subject in the main clause. Only when the main clause contains a 3SG subject does it really refer to a mental state.

POSTER SESSION II

The Role of Prosody in Thematic Role Disambiguation in L2 Korean

Hyunah Ahn, University of Hawaii - Manoa

This study investigates whether L2ers of Korean use Intonational Phrase boundary tones (%) to resolve thematic role ambiguity in the Double Nominative Construction with unaccusative psych-predicates when one of the two nominative NPs is dropped. A contextualized sentence-judgment task showed that native speakers of Korean rated Stimulus reading (where Experiencer, the grammatical subject is dropped) higher than Experiencer reading (Stimulus, the grammatical object is dropped) but showed faster response and more accurate interpretation when a boundary tone accompanies the less preferred reading (Experiencer reading). L2 results indicate that L2ers show higher accuracy in Stimulus reading, but the presence of a boundary tone inhibits overall accuracy rather than helping processing Experiencer reading sentences as in natives. Unlike natives preferring Stimulus reading and using a boundary tone as a cue to signal the less preferred reading, L2ers did not show such use of boundary tones to recover from the more preferred reading.

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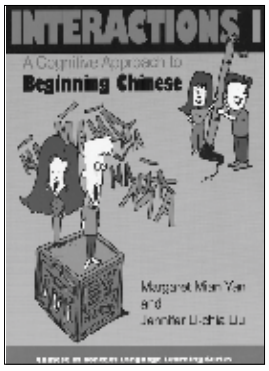

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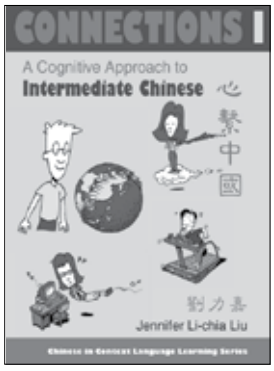

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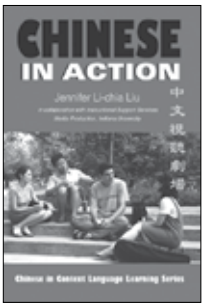

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Session A--Metcalf Small

Impaired inflectional morphology in children with Developmental Dyslexia: converging evidence from behavioral and electrophysiological measures

Chiara Cantiani, University of Milan - Bicocca and Scientific Institute "E.Medea", Bosisio Parini, LC (Italy)
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Based on the widely recognized overlap between Specific Language Impairment (SLI) and Developmental Dyslexia (DD), the study of inflectional morphology in DD gains theoretical and clinical relevance. In the present study, we used converging evidence to characterize impaired inflectional morphology in Italian DD children. 32 children with DD (16 with DD-only and 16 with DD+SLI) and 16 control children (aged 8-12) were tested with a behavioral linguistic battery requiring the production of nominal and verbal inflections using words and pseudo-words. In addition, ERPs were recorded while children listened to sentences containing subject-verb agreement violations. The results show a pervasive disorder involving both production and comprehension in DD+SLI children, and a deficit restricted to pseudo-words in DD-only children. However, the difference between the two dyslexic groups is not likely to be only quantitative: qualitatively different patterns emerge at the electrophysiological level, highlighting the peculiarity of the morphological impairment in DD.

Session B--East Balcony

How do children interpret number words before learning their exact meanings?

Joshua Hartshorne, Harvard University
David Barner, University of California - San Diego

We tested children's interpretation of unknown numerals by comparing them to both existential quantifiers (*a, some*) and a novel quantifier (*blick*). In past studies, children's knowledge of quantity words was assessed using the Give-a-Number task ("Give me two/some fish"). Because children often give a handful for both "some" and unknown numerals, this task does not differentiate a default of "some" from other candidate meanings, including total lack of knowledge. We circumvented this problem by creating the "Don't-Give-a-Number" task: if children treat an unknown number, *N,* as an existential, then when asked to "not give N" they should give no objects at all. However, if they interpret "N" as a member of a scale of contrasting alternatives, then they may interpret "Don't-Give-N" to be consistent with giving some other quantity, thus giving a quantity greater than zero. In two experiments, we find that children differentiate unknown numerals from quantifiers.

Session C--Conference Auditorium

Distributional learning of L2 phonological categories by listeners with different language backgrounds

Bozena Pajak, University of California - San Diego
Roger Levy, University of California - San Diego

We report experimental evidence using distributional learning (Maye & Gerken, 2001) supporting a model of second language (L2) phonological acquisition as a process of inductive inference, where inferred L2 structure reflects both distribution of L2 input and L1-derived bias. Our model predicts that learners are more likely to infer category distinctions based on secondary cues if their L1 biases them in favor of those cues. We tested this prediction by familiarizing Korean and Mandarin speakers to novel language stimuli with correlated cues – a clear Mandarin-like place contrast correlated with a weaker, secondary segment-length contrast. After familiarization participants judged whether token pairs distinguished by only a single cue were likely to be different words in the new language. Speakers of Mandarin, which has no length contrasts, inferred word distinctions more based on place than length, but speakers of Korean, which does have length contrasts, inferred distinctions based on both.

Notes

Session A--Metcalf Small

Electrophysiological correlates of picture-word processing in three-to-seven year old non-verbal children with Autism

Yan H. Yu, City University of New York - Graduate Center
Naseem Choudhury, Rutgers University - Newark
Chiara Cantiani, University of Milan - Bicocca and Scientific Institute "E.Medea", Bosisio Parini, LC (Italy)
Valerie L. Shafer, City University of New York - Graduate Center
Michelle MacRoy-Higgens, City University of New York - Hunter College

Event-related potentials (ERPs) can serve as indices of language processing in tasks that do not require a behavioral response, thus, serving as a tool to examine whether some indication of semantic processing is present in Non-Verbal (NV) children with Autism Spectrum Disorders (ASD). We recorded ERPs while participants passively viewed pictures and listened to words. Nine ASD and 20 typically developing (TD) children from 3-7 years of age participated. The TD children showed increased negativity (N400) to the Mismatched trials at the vertex sites. Only a few of the NV children with ASD showed an N400-like response. Spatial correlation analysis revealed high similarity in topography among the TD children. The NV children with ASD showed some similarity in topography with TD for early (140-180 ms) but not for later (420-500ms) time window. These data suggest that information integration is one of the major challenges in the NV children with ASD.

Session B--East Balcony

Let's disambiguate sentences together: What children know about the semantics of *together*, and where pragmatics steps in

Kristen Syrett, Rutgers University - New Brunswick
Hannah Baker, Rutgers University - New Brunswick
Ariana Kalkstein, Rutgers University - New Brunswick
Julien Musolino, Rutgers University - New Brunswick

Four-year-olds and adults accept sentences like *Two boys pushed a car* in a *collective context* (two boys pushing one car), and a *distributive context* (two boys pushing their own cars). When presented with the same sentence with sentence-final *together*, only children accept it in the distributive context, suggesting that children either over-accept, or lack knowledge of *together*'s collectivizer status. However, *together* is also licensed when there is a spatiotemporal overlap of events, making it somewhat curious that adults are not more willing to accept these sentences in the distributive context. In two judgment tasks targeting this context, we demonstrate that children's acceptances *decrease* when the spatiotemporal relation is severed and the interpretation is not semantically licensed, and adults' acceptances *increase* when coordination among agents is highlighted. Thus, the pattern is consistent with the semantics of *together*, while providing evidence for the division of labor between semantic representation and pragmatic bias.

Notes

Session C--Conference Auditorium

What's in a Rise? Effects of Language Experience on Interpretation of Lexical Tone

Carolyn Quam, University of California - San Diego
Sarah Creel, University of California - San Diego

How accurately is lexical tone information exploited in online word recognition? Does this vary with word familiarity (familiar vs. novel) and language experience? Mandarin-English bilinguals and English monolinguals learned and recognized novel words, while eye-tracked. Bilinguals also recognized familiar words and completed language-dominance/proficiency tests. Bilinguals used segments faster than tones to recognize familiar Mandarin words ($t(47)=4.40$, $p<.001$); this difference weakened as Mandarin proficiency increased ($r=-0.35$, $p<.05$). Next, using newly learned words allowed us to control for experience with the words. Monolinguals ($t(23)=5.14$, $p<.005$) and bilinguals ($t(47)=7.41$, $p<.001$)—regardless of Mandarin proficiency--used segments more accurately than tones to recognize newly learned words. We thus find more difficulty exploiting tone than segments unless word familiarity and Mandarin proficiency are high, providing a nuanced view of the impact of language experience on tone interpretation.

Session A--Metcalf Small

Developmental differences in noun-object and verb-action identification: An Event Related Potentials study

Mandy Maguire, University of Texas - Dallas and Callier Center for Communication Disorders
Diane Ogiela, University of Texas - Dallas and Idaho State
Grant Magnon, University of Texas - Dallas
Bambi Delarosa, University of Texas - Dallas
Lynda Sides, University of Texas - Dallas

Semantic mastery includes quickly identifying object and action referents. Given children's difficulty in acquiring verbs, are there developmental differences in how objects and actions are identified? In this study we address this question using the N300/N400 complex of the Event Related Potential (Federmeier & Kutas, 2001). As their ERPs were recorded, adults and 8-9 year olds heard a noun (chair) or verb (sit) followed by a picture of an object and action (e.g., a man sitting in a chair), and identified if the word matched the picture. Behaviorally, there were no differences between age groups or conditions. Adults revealed a congruency effect for noun-object and verb-action pairs in the N300 and N400. In children, the N300 was significant only for noun/object pairs, but the N400 effect was found for objects and actions. We conclude that action verb processing lags behind object nouns later developmentally than indicated by behavioral measures alone.

Session B--East Balcony

To what extent does the development of conceptual categories depend on language?

Napoleon Katsos, Cambridge University*

Does the development of conceptual categories depend on syntactic and lexical features of a language? As part of a larger project we studied the comprehension of the (cross-linguistic equivalent of the English) quantifiers 'all', 'none', 'some', 'some…not', and 'most', by 5-year-old children (n=606) and adult controls (n=441) speaking one of 24 languages, representing eleven Genera. The languages differ in terms of Concord, Lexical class (e.g. noun 'la mayoría' vs quantifier 'most'), use of Partitive ('of the'), the number of Syllables, and Quantifier-Noun Order, among others. The findings suggest a fundamentally uniform pattern of the acquisition of conceptual categories across languages, which is modulated by specific syntactic and lexical features. We discuss whether the similarities in acquisition are underlined by universal conceptual primitives.

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Session C--Conference Auditorium

Age of Acquisition Affects the Learning of Phonological Structure in ASL

Rachel Mayberry, University of California - San Diego
Marla Hatrak, University of California - San Diego
Hope Morgan, University of California - San Diego

Whether the linguistic structure of sign language includes phonology is controversial. This debate arises in part from the gestural origins of sign languages. Gestures do not form a linguistic system and lack phonological structure. For language acquisition, the psychological reality of phonological structure in sign language is an important question. Phonological structure is key to the acquisition and processing of spoken language and vulnerable to age of acquisition (AoA) effects. Here we ask whether AoA affects phonological acquisition in sign language. In a repetition paradigm, 64 deaf signers, whose AoA ranged from birth to 14 years, reproduced 108 sign stimuli, half of which were phonotactically possible nonce signs. AoA showed significant linear effects on accuracy, especially for nonce signs, that varied in relation to phonological parameter. Our results indicate that signers acquire the phonological structure of sign during development and that this acquisition is sensitive to AoA.

Notes

Session A--Metcalf Small

Words, words, and non-words: Learning a pseudo-lexicon during the first year of life

Celine Ngon, Laboratoire de Sciences Cognitives et Psycholinguistique (EHESS-DEC(ENS)-CNRS)
Martin Andrew, RIKEN Brain Science Institute
Emmanuel Dupoux, Laboratoire de Sciences Cognitives et Psycholinguistique (EHESS-DEC(ENS)-CNRS)
Sharon Peperkamp, CNRS

Three visual-fixation experiments examined the acquisition of a pseudo-lexicon in 11-month-old French-learning infants. In Experiment 1, infants were presented with lists of high- vs. low-frequency *n*-grams, phoneme sequences generated from infant-directed speech corpora. *N*-grams were phonotactically legal, but were not real words or phrases. Infants listened significantly longer to high-frequency *n*-grams than to low-frequency ones. In Experiment 2, another group of infants who heard high-frequency *n*-grams of a lower frequency range vs. low-frequency *n*-grams did not have a preference for either of the list types. In Experiment 3, a final group of infants listened to high-frequency *n*-grams (the same as in Experiment 1) vs. high-frequency real words of similar frequency. No difference in listening time was found. Together, these results suggest that before mastering word segmentation, French-learning infants use statistical cues, leading them to build a rough approximation of a lexicon in which words are not yet distinguishable from non-words.

Session B--East Balcony

Production and processing (a)symmetries in the acquisition of gender by Dutch and Greek sequential bilingual children

Nada Vasić, University of Amsterdam
Vasiliki Chondrogianni, University of Aalborg and University of Reading
Theo Marinis, University of Reading
Elma Blom, University of Amsterdam and University of Alberta

Studies of gender in sequential bilingual (L2) learners present a mixed picture as to whether production errors are related to output or to underlying feature specification problems. Additionally, acquisition success appears to be related to morpho-phonological cues of the L2 gender-system. We address these issues by comparing production and on-line comprehension of gender by Turkish- L1 child learners of Dutch gender-system (with hardly any morpho-phonological cues) and Greek gender-system (with ample cues). The Greek gender transparency leads to more complete acquisition for Greek-L1 and L2 children versus Dutch-L1 and L2 children. In Dutch, we observe that cues facilitate acquisition. Unlike the Dutch-L1 children, Dutch-L2 children were insensitive to gender violations for opaque gender types. They exhibited sensitivity in the cue-condition, despite poor performance in production. The latter asymmetry between production and processing, together with the ones found for Greek-L2 and Dutch L1-children, support the claim that production errors are output related.

Notes

Session C--Conference Auditorium

Mayan and US Caregivers Simplify Child Directed Speech

Laura Shneidman, University of Chicago
Susan Goldin-Meadow, University of Chicago

Children growing up in a Yucatec-Mayan community receive most early linguistic input from overhearing (Shneidman & Goldin-Meadow, 2008). However, only speech directed to these children reliably predicts later vocabulary (Shneidman & Goldin-Meadow, 2010). Why does overheard-speech not have a greater impact on word-learning? One possibility is that overheard-speech is more complex than directed-speech, and that simplicity facilitates wordlearning (e.g. Murray et al., 1990). Here we ask whether simplifications occur in child-directed speech relative to overheard-speech in Yucatec-Mayan children. 24-month Mayan and US children were videotaped in natural interaction and all input utterances were classified as directed or overheard. We calculated lexical diversity (type/token ratio) and utterance complexity (clausal complexity). Both Mayan and US caregivers used a less diverse lexicon and made clausal simplifications when addressing children than when addressing others. The fact that child-directed speech is simpler than overheard-speech may account for the powerful role that directed-speech plays in word-learning.

Session A--Metcalf Small

Visual speech segmentation: Using facial cues to locate word boundaries in continuous speech

Aaron Mitchel, Pennsylvania State University
Dan Weiss, Pennsylvania State University

Speech is typically a multimodal phenomenon, yet few studies have focused on the exclusive contributions of visual cues to language acquisition. Consequently, we examined the role of facial cues in speech segmentation. Previous research has demonstrated that language learners can use lexical stress and pitch cues to segment speech (Jusczyk et al., 1999) and, further, that learners can extract this information from talking faces (Yehia et al., 2002). Therefore, we investigated whether visual prosodic information can facilitate speech segmentation. We created an artificial speech stream that contained minimal segmentation cues and paired it with two synchronous facial displays in which visual prosody was either informative or uninformative for identifying word boundaries. Across three familiarization conditions (audio stream alone, facial streams alone, and paired audiovisual), learning occurred only when the facial displays were informative to word boundaries, suggesting that facial cues can help learners solve the early challenges of language acquisition.

Session B--East Balcony

Examining development in second language processing: An ERP investigation of gender and number agreement in L2 Spanish

José Alemán Bañón, University of Kansas
Alison Gabriele, University of Kansas
Robert Fiorentino, University of Kansas

We investigated the role of transfer and structural distance in the processing of gender and number agreement by English-speaking learners of Spanish. Agreement was realized between nouns and adjectives, where English does not instantiate agreement, and between demonstratives and nouns, a context in which English requires number agreement. The impact of structural distance was examined by comparing within-phrase and across-phrase agreement. Results for the Spanish natives and the advanced learners show P600s for gender and number violations overall; both groups show reduced amplitudes overall in the across-phrase conditions. Preliminary results for intermediate learners show a P600 for noun-adjective number agreement. Noun-adjective gender agreement was significant in the within-phrase condition and marginal in the across-phrase condition. No effects were found for intermediates in demonstrative-noun agreement. Our results suggest a role for structural distance in both native and non-native processing and a role for the morphological instantiation of features in L2 development.

Session C--Conference Auditorium

Quality and Quantity of Early Word Learning Environments Together Predict Child Vocabulary Size at 50 Months

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Learners can form hypotheses about a word's meaning after only a single encounter with the word. However, some contexts are more informative than others, and in this sense vary in quality. In early word learning, the quality of the visual environment plays a particularly important role because children cannot take full advantage of linguistic cues. We found that children's productive vocabularies at 50- months were predicted by the quality of their early word learning environments (measured as the success with which adults were able to guess parent-uttered "mystery" words in muted videoclips of these children at 14- and 18-months). Importantly, this effect held when accounting for gains attributable to socioeconomic status (SES) and the quantity of parent speech at 14- and 18-months. SES predicted quantity of parent speech, but not quality, suggesting that larger vocabularies of higher SES children arise from increased opportunities for learning rather than from qualitatively better input.

Notes

Session A--Metcalf Small

All words are not created equal: Expectations about word length guide infant statistical learning

Casey Lew-Williams, University of Wisconsin-Madison
Jenny Saffran, University of Wisconsin-Madison

Infants have been described as 'statistical learners' capable of extracting structure (such as words) from patterned input (such as language). We investigated whether prior knowledge influences how infants track transitional probabilities in word segmentation tasks. Are infants biased by prior experience when engaging in sequential statistical learning? In a laboratory simulation of learning across time, we exposed 9-10-month-old infants to a list of either bisyllabic or trisyllabic nonsense words, followed by a pause-free speech stream composed of a different set of bisyllabic or trisyllabic nonsense words. Listening times revealed successful segmentation of words from fluent speech only when words were uniformly bisyllabic or trisyllabic throughout both phases of the experiment. Hearing trisyllabic words during the preexposure phase derailed infants' abilities to segment speech into bisyllabic words, and vice versa. We conclude that prior knowledge about word length equips infants with perceptual expectations that facilitate efficient processing of subsequent language input.

Session B--East Balcony

Examining the nature of variability in gender and number agreement in native and nonnative Spanish

Beatriz Lopez Prego, University of Kansas
Alison Gabriele, University of Kansas

We explored the nature of morphological variability in English-speaking learners of Spanish, examining whether the variability is systematic and whether performance is impacted by the task. McCarthy (2008) proposed that 'default' errors, referring to the incorrect extension of masculine/singular morphemes to contexts requiring feminine/plural agreement, are more frequent than the opposite pattern, called 'featureclash' errors. L2 learners took either a speeded grammaticality judgement task or an untimed GJ task. Three groups of Spanish natives took a speeded GJ task at three different rates of presentation to examine whether natives under pressure perform similarly to learners. The results show quantitative effects of speed for both natives and learners with decreased rates of accuracy in both groups. The results for both groups showed more sensitivity to feature-clash than default errors for number, but the opposite pattern for gender. The overall results are in line with computational accounts of morphological variability (Hopp, 2010).

Notes

Session C--Conference Auditorium

Richer language experience leads to faster understanding: Language input and processing efficiency in diverse groups of low-SES children

Adriana Weisleder, Stanford University
Anne Fernald, Stanford University

Recent research has shown that infants' language processing skills are linked to early vocabulary growth and to long-term language and cognitive outcomes (Fernald et al., 2006; Marchman & Fernald, 2008). Here we examine links between child-directed speech, speech-processing efficiency and vocabulary in two longitudinal studies with Spanish and English-learning children from low/mid-SES backgrounds. Both include "day-in-the-life" recordings of children's language interactions over 12-hours at home, at 18- and 24-months. Three important findings emerged: First, there was substantial variability in amount of child-directed speech in different families: some children heard over 1800 words/hour, while others heard only 100 words/hour. Second, amount of child-directed speech was correlated with children's vocabulary size. And third, amount of adult speech was also correlated with processing speed. We discuss how studying variability in early language experience and early language processing skill in children from diverse backgrounds is essential to understanding differences in linguistic proficiency.

Session A--Metcalf Small

Fifteen-month-old infants can categorize words using distributional information alone and retain the categories after 1 week

Toben Mintz, University of Southern California

Computational studies show that distributional information from lexical co-occurrence patterns could provide learners with cues to grammatical categories (e.g., noun, verb). However, behavioral evidence suggests that infants require correlated category cues (e.g., phonological or semantic cues). Here we familiarized 15-month-olds to 10 minutes of an artificial language that contained two grammatical categories determined solely by distributional information. Using HPP, we then measured each infant's preference for repeated versus scrambled sentences. Approximately one week later, we measured infants' listening times for novel grammatical sentences and novel ungrammatical sentences. These sentences were matched for surface similarity to the familiarization sentences, but only the grammatical sentences conformed to the language's distributionally-defined category structure. Infants who preferred repeated sentences at time-1 preferred grammatical sentences at time-2, and infants who preferred scrambled sentences at time-1 preferred ungrammatical sentences at time-2. The findings suggest that infants categorized words in the familiarization sentences exclusively from distributional information.

Session B--East Balcony

Pronoun resolution in L2 French: Processing evidence for the role of (grammatical) gender

Claire Renaud, Arizona State University

This study investigates the debate in second-language (L2) acquisition on the availability of uninterpretable features not instantiated in the native grammar. In particular, the resolution of pronouns in the case of synonyms with different gender specifications raises the question of the encoding of the relevant information among three potential levels: the entities, the discourse referents or the lexical entries, and the features deployed. English learners of French at three proficiency levels and a native control group completed a self-paced moving-window judgment task. Five experimental quadruples targeted (mis)matching of gender on co-reference of nouns and pronouns. Reading times on the pronoun (adjusted for length differences between the masculine and the feminine forms) and on the following segment as well as acceptance rates of the follow-up sentence were analyzed. The findings suggest that the encoding of pronouns in the L2 grammar occurs at the grammatical level.

Session C--Conference Auditorium

Nonlinear development of speaking rate in child-directed speech

Eon-Suk Ko, State University of New York - Buffalo

This study investigated if the speaking rate in Child-Directed Speech (CDS) changes over the course of child language development, and, if so, what the nature of that change is. The developmental path of CDS speaking rate was analyzed in 25 mother-child pairs from longitudinal corpora in CHILDES database. The results were then compared with the developmental pattern of speaking rate in child-produced speech. A parallel analysis was made on the development of mean length of utterance (MLU) in mother and child. The findings suggest that CDS speaking rate dynamically changes with shifts occurring around the onset of child speech production and again during the multiword stage. A parallel pattern of nonlinearity was also observed in the speaking rate of the child and the MLU of both mother and child. Phonological precision effects in CDS (e.g. exaggerated VOT) are explained as a by-product of varying speaking rate.

Notes

Alternates

The Role of Prosody in Thematic Role Disambiguation in L2 Korean

Hyunah Ahn, University of Hawaii - Manoa

This study investigates whether L2ers of Korean use Intonational Phrase boundary tones (%) to resolve thematic role ambiguity in the Double Nominative Construction with unaccusative psychpredicates when one of the two nominative NPs is dropped. A contextualized sentence-judgment task showed that native speakers of Korean rated Stimulus reading (where Experiencer, the grammatical subject is dropped) higher than Experiencer reading (Stimulus, the grammatical object is dropped) but showed faster response and more accurate interpretation when a boundary tone accompanies the less preferred reading (Experiencer reading). L2 results indicate that L2ers show higher accuracy in Stimulus reading, but the presence of a boundary tone inhibits overall accuracy rather than helping processing Experiencer reading sentences as in natives. Unlike natives preferring Stimulus reading and using a boundary tone as a cue to signal the less preferred reading, L2ers did not show such use of boundary tones to recover from the more preferred reading.

Alternates

Prosodic influence in bilingual phonological development: Evidence from a Portuguese-French first language learner

Laetitia Almeida, University of Lisbon
Maria João Freitas, University of Lisbon
Yvan Rose, Memorial University of Newfoundland

In this paper, we discuss previously unpublished longitudinal data from Liliana, a simultaneous learner of French and European Portuguese. Our corpus consists of 55 recording sessions in each language (performed between 1;1 and 3;10). We focus on the relationships between the development of segments and that of syllable structure in both of Liliana's languages. Based on a comparison of our data those from the published literature on monolingual French and Portuguese development, we argue that Liliana develops two independent systems. We further argue that interactions between these systems yield systematic segmental effects in specific prosodic contexts. Influences between the two languages only occur in prosodically 'weak' positions (second consonant of branching onsets; word-medial codas), while autonomous development is found in prosodically 'strong' positions (singleton onsets; final consonants). This evidence contradicts *a priori* predictions based on language dominance: the influence occurs bi-directionally and over the same developmental period.

Notes

Alternates

Teasing apart the role of cognitive and linguistic factors in children's emerging metaphorical abilities

Lauren Stites, Georgia State University
Şeyda Özçalışkan, Georgia State University

Metaphor plays an important role in cognitive development by structuring abstract concepts and leading to conceptual change. Yet we know little about the factors that contribute to children's metaphor comprehension. In this study, we focus on *spatial metaphors for time* and ask (1) how early children understand and explain different metaphors for time, and (2) what cognitive and/or linguistic factors best explain these developmental changes. Our analysis of 60 children between ages 3 and 6 showed that children can understand time metaphors by age five and explain their meanings by age 6. We also found strong positive correlations between *metaphor comprehension* and understanding of the time concept ($B(68)=.763$, $p=.032$), and between metaphor explanation and verbal ability ($B(68)=.044$, $p=.014$). These results suggest that changes in children's metaphor comprehension are best explained by children's grasp of the target concept, while changes in metaphor explanation are more closely tied to children's verbal ability.

Alternates

Win it or lose it? The development of word stress perception in French and Spanish infants

Katrin Skoruppa, University College London
Ferran Pons, University of Barcelona
Sharon Peperkamp, CNRS
Laura Bosch, University of Barcelona

Work on phonetic category acquisition has revealed both sensitivity losses for non-native sound contrasts and sensitivity gains for native contrasts during the first year of life. The present study investigates the developmental course of the perception of lexical stress, a suprasegmental dimension that differs cross-linguistically (variable in Spanish, fixed in French). Previous research shows that at 9 months, Spanish-learning infants discriminate between segmentally varied stress-initial (e.g. *níla, túli*) and stress-final (e.g. *lutá, pukí*) nonsense words, whereas French infants do not (Skoruppa et al., 2009). Here, we show that neither Spanish nor French 6-month-olds can discriminate between stress-initial and stress-final words in a familiarization-preference procedure. In contrast, both groups succeed when tested with a single word. Hence, only Spanish infants develop the ability to track stress patterns in segmentally varied words between the ages of 6 and 9 months. Stress perception thus involves a sensitivity gain during the first year of life.

Alternates

First and Third Person Perspective in Complement Clauses and Theory of Mind

Silke Brandt, University of Basel
David Buttelmann, University of Erfurt
Elena Lieven, Max Planck Institute for Evolutionary Anthropology
Michael Tomasello, Max Planck Institute for Evolutionary Anthropology

We investigated how German-speaking children at the age of 3;5 and 4;5 interpret complement clauses with 1SG and 3SG subjects in the main clause and how this correlates with their understanding of false belief. In the 1SG condition, children from both age groups were more likely to follow an advice marked by *know* over an advice marked by *believe (I know vs. I believe the sticker is in this box)*. In the 3SG condition, only the 4-year-olds were more likely to follow an advice marked by *the frog knows* over one marked by *the cow believes.* Moreover, only the 4-year-olds' performance in the 3SG condition correlated with their understanding of false belief. This suggests that complement clauses with a 1SG subject in the main clause do not have the same meaning and structure as complement clauses with a 3SG subject in the main clause. Only when the main clause contains a 3SG subject does it really refer to a mental state.

Alternates

Interpreting object clitics in real-time: eye-tracking evidence from 4-year-old and adult speakers of Spanish

Theres Gruter, Stanford University
Nereyda Hurtado, Stanford University
Anne Fernald, Stanford University

Production of object clitics in the Romance languages emerges late in L1 development, and presents difficulties for various learner populations. Here we investigate whether these difficulties (a) extend to real-time comprehension, and (b) relate to working memory. In an eye-tracking experiment, 4-year-old and adult speakers of Spanish listened to sentences containing a preverbal object clitic or a post-verbal lexical object. Adults started looking at the target image earlier in the clitic- than the lexical-object condition, indicating incremental interpretation of preverbal clitics. A similar pattern emerged for 4-year-olds who rarely/never omitted clitics in production, but not for those omitting clitics more frequently. Moreover, frequency of clitic omission in production was related to the Recalling Sentences subscale on the CELF. These findings suggest the ability to incrementally interpret preverbal clitics takes time to develop, and is related to the ability to produce clitics consistently, which in turn may relate to working memory.

Notes

Alternates

The acquisition of distributivity and plurality

Elena Pagliarini, University of Verona
Gaetano Fiorin, University of Utrecht
Jakub Dotlacil, University of California-Santa Cruz

Experimental studies show that the distributive reading of plural definite noun phrases (PDs) is degraded for adults. In this study, we tested the hypothesis that the distributive interpretation of PDs is degraded because of the competition with distributive quantifiers (DQs.) That is, the distributive reading of "the boys are building a boat" is degraded because there is a competing form, "each boy is building a boat", which expresses that reading unambiguously. We administered a truth-value judgment-task to a group of Italian children aged between 4 and 13 years and a group of adults. In support of our hypothesis, the results show that (i) there is a significant correlation between the children's ability to exclude the collective interpretation of DQs and their ability to reject the distributive reading of PDs and (ii) none of the children who rejected the distributive reading of the PDs accepted the collective reading of the DQs.

Alternates

Ad-hoc scalar implicature in adults and children

Alex Stiller, Stanford University
Noah Goodman, Stanford University
Michael Frank, Stanford University

Linguistic communication relies on pragmatic implicatures, yet young children perform poorly on tests of scalar implicature until quite late in development. We created simple ad-hoc scales (e.g. a set of three faces, where one has no accessories, one has a hat, and one has a hat and glasses) to test whether children's performance in implicatures is equally poor when there are no lexical quantifiers involved. We found that three- and four-year-olds were able to make adhoc scalar implicatures with high accuracy. Our next experiments (with adults) tested whether these ad-hoc implicatures rely on the real-world knowledge that possessing a feature (e.g. a hat) is less common than not possessing that feature. Consistent with the predictions of a probabilistic model, manipulating the base rates of features affected the probability that adults would make implicatures. Our results thus support a statistical account of pragmatic inference.

Notes

Alternates

Crosslinguistic differences of autistic children's reflexive pronouns: English vs. Greek

Arhonto Terzi, Technological Educational Institute of Patras
Theo Marinis, University of Reading
Konstantinos Francis, University of Athens
Angeliki Kotsopoulou, Technological Educational Institute of Patras

This study investigated comprehension of strong, clitic and reflexive pronouns by 20 Greek-speaking 5-8 year old high functioning children with ASD, and a group of age- and vocabulary- matched controls. The two groups did not differ on non-verbal abilities, but ASD children performed lower on morphosyntax and significantly lower on pragmatics. The two groups did not differ on reflexives, with performance close to ceiling, by contrast to the English-speaking ASD children (of lower verbal and nonverbal abilities), studied by Perovic et al. (to appear). We attribute ASD children's good performance in this domain to the nature of Greek reflexives, which do not involve chain formation, and to children's (high) verbal and non-verbal abilities. The two groups of Greek-speaking children did not differ on the comprehension of strong pronouns either, but ASD children performed significantly lower on clitic pronouns (88.3% vs. 99.2%), in a pattern yet to be understood.

Alternates

Clitic production across tasks in young French-speaking children

Mihaela Pirvulescu, University of Toronto - Mississauga
Ana-Teresa Perez-Leroux, University of Toronto
Yves Roberge, University of Toronto
Nelleke Strik, University of Toronto

Several experimental studies report optionality in object clitic production in early French L1 while these pronouns are obligatory in the target grammar. This presentation investigates the syntactic dimensions of the phenomenon of clitic optionality in children based on a minimalist analysis of the recoverability of silent arguments. A comparison between different elicitation methods (indirect address, direct address and manipulation of tense) reveals significant differences in clitic production across tasks. We propose an analysis where linking to discourse is pragmatic, but is represented syntactically (Sigurðsson 2011). The early grammar has available a referential null object (along with the clitic construction, Pérez-Leroux et al. 2008) which must be C-edge linked in the left periphery. This approach refines a traditional view in acquisition that children allow argument drop because they over-rely on access to discourse (Allen 2000), by articulating a full syntactic account of how this happens.

Alternates

Phonotactic Interference and Performance Factors Trump Representational Deficits: Perception and Production of English Inflections by L1 Mandarin Speakers

Timothy Bonner, City University of New York - Graduate Center and Lehigh University

Sixty adult Mandarin-speaking learners of English (low and high proficiency) were assessed in their aural perception and oral production of English inflections using timed and self-paced experiment modules. Stimuli consisted of single word presentation (real and nonce words) and words within sentences. We hypothesized three factors to play a role: 1) L1 phonotactic constraints; 2) perceptual saliency; and 3) increased processing load. The results show increased error rates on target items that violate L1 phonotactic constraints in both tasks. However, instead of the expected omission of violating codas, devoicing of nearly all voiced obstruents in coda position was observed using PRAAT. Simplification of syllable final and word final consonant clusters via epenthesis and metathesis was also regularly observed. As expected, error rates on the sentence-level tasks increased due to greater processing load. The results will be discussed within a theoretical framework positing syntactic and phonological deficits in older L2 learners.

Alternates

Semantic bootstrapping and the role of meta-cognition

Neil Parr, University College London
Richard Breheny, University College London

Traditional accounts appeal to the idea that Verbs denote actions and Nouns denote entities. We propose that infants attend to and acquire the grammatical properties of word forms when describing complex events involving sub-events which are **not** currently in shared attention. Prior to that, infants' utterances focus on the 'here-and-now,' and infant uses of nominal and verbal forms lack their typical grammatical function. The development in usage from simple Manifest to Complex Events co-occurs with meta-cognitive abilities required to represent non-occurrent states. Our research shows that 18-30 month old infants make two kinds of complex utterance. One (INT) involves achievements, the other (RES), involves accomplishments. Each requires a predicate describing the state change and a means to refer to a Theme 'measuring out' the change; in effect, the use of [V]erbs and [DP]s. Our presentation will describe analysis supporting the conclusion that Complex Events are the locus of early syntactic development.

Notes

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