B U C L D



The 37th Annual

Boston University Conference on Language Development

November 2nd - 4th, 2012

Map of George Sherman Union (Second Floor)

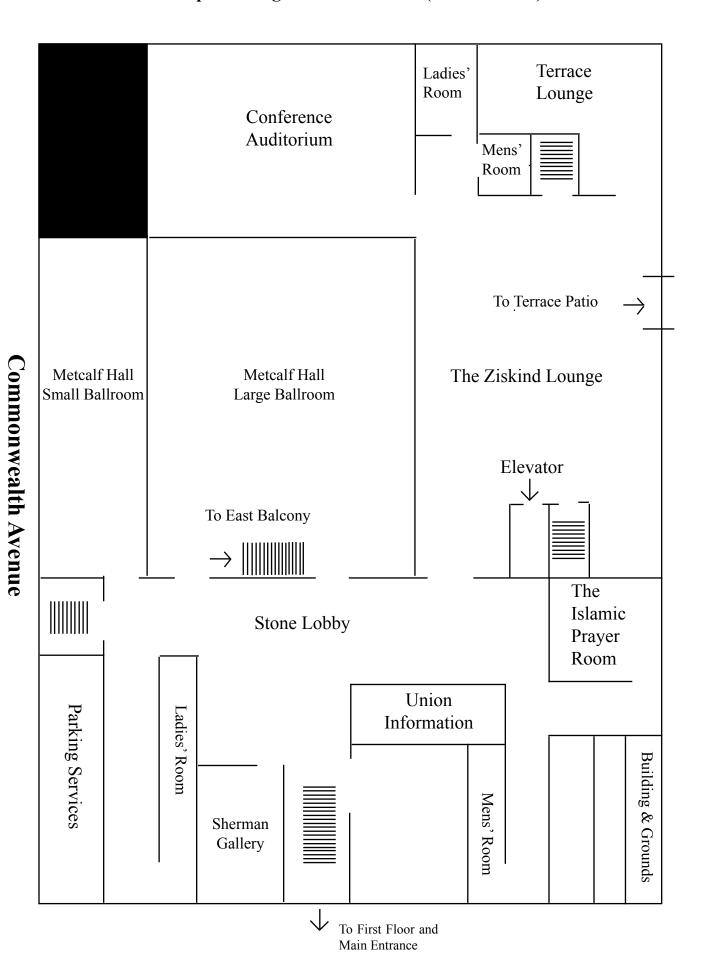


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Welcome

Our 37th Year

Welcome to the thirty-seventh 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-seven years.

Invited Speakers

At this year's conference, we are honored to have Ray Jackendoff and Patricia Kuhl as our featured speakers. Ray Jackendoff will present Friday's keynote address, entitled "Issues in acquisition from the perspective of the parallel architecture." Saturday's program will close with Patricia Kuhl's plenary address, "Human language development: Using brain measures to advance theory" This year's symposium, to be held during Saturday's lunch period, is entitled "Language Delay – Does it matter?" and will feature speakers Fred Genesee, Lauren McGrath, Gary Morgan, Bencie Woll, and Leslie Rescorla.

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 514 submissions, each of which was sent out to five reviewers for anonymous review. Of these, 81 papers and 68 posters were selected for presentation, with an acceptance rate of 29%. 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. You can order the proceedings from Cascadilla Press at www.cascadilla.com. 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 2012 Conference Organizing Committee

Sarah Baiz Nora Goldman Rachel Hawkes

Faculty Advisor
Paul Hagstrom

Chairs

Rachel Benedict Karen Laakko Pengfei Li Will Orman Solomon Posner Matthew Valleau

Boston University Conference on Language Development 96 Cummington Street, Room 244 Boston, MA 02215 e-mail: langconf@bu.edu phone: (617) 353-3085

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-1147863, 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 advisor, Paul Hagstrom, for the care and guidance during the planning process and for all his work in designing and developing a new web-based system that automated parts of the conference organization--especially the new review system. His expertise and support has 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 of Disability Services for providing American Sign Language interpreters, and Nick Vale of Student Production Services for providing the lighting system for the interpreting team. Finally, our thanks go to Liz Politis for her support in managing the conference finances, and to Elizabeth McGuire and Lisa Wong for collaborating on the maintenance of our online registration system.

Finally, we would like to thank the 145 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 68 posters. We are particularly grateful for their thoughtful attention to each submission.

Nameera Akhtar Dorit Kaufman Thierry Nazzi Maria Joao Freitas Shanley Allen Grzegorz Krajewski Elissa Newport Alison Gabriele Ben Ambridge Melanie Kuhn Claire Noble Anna Gavarró Inbal Arnon Judit Gervain Usha Lakshmanan Rama Novogrodsky Richard Aslin William O'Grady Donna Lardiere Heather Goad Mitsuhiko Ota David Barner Helen Goodluck Thomas Lee Misha Becker Beth Levin Şeyda Özçalışkan Janet Grijzenhout Anna Papafragou Gerard Bol John Grinstead Casey Lew-Williams Patrick Bolger Theres Gruter Juana Liceras Johanne Paradis Ellen Broselow Jeffrey Lidz Lisa Pearl Maria Teresa Guasti Nancy Budwig Elena Lieven Sharon Peperkamp Ayşe Gürel Ann Bunger Martin Hackl Sarah Liszka Ana-Teresa Perez-Leroux Helen Cairns Heather Littlefield William Philip Paul Hagstrom Catherine Caldwell-Harris Cornelia Hamann Conxita Lleo Colin Phillips **Kyle Chambers** Theo Marinis Julian Pine Gabriella Hermon Harald Clahsen Bernadette Plunkett Lori Markson Makiko Hirakawa Molly Collins Kathy Hirsh-Pasek Corrine McCarthy Philippe Prévost Erin Conwell Clifton Pye Miren Hodgson Luisa Meroni Peter Coopmans Barbara Höhle Toben Mintz Jennie Pyers Barbara Davis Marnie Reed Bart Hollebrandse Maria Mody Cecile De Cat Silvina Montrul Mabel Rice Aafke Hulk Kamil Deen Alan Munn Tom Roeper Felicia Hurewitz Laurent Dekydtspotter Julien Musolino Jason Rothman Tania Ionin Neiloufar Family Elizabeth Johnson Aparna Nadig Monika Rothweiler Michael Frank Letitia Naigles Caroline Rowland Alan Juffs

Acknowledgements

Tetsuya Sano William Snyder Lynn Santelmann Teresa Satterfield Hyun-Joo Song Antonella Sorace Cristina Schmitt Rex Sprouse Petra Schulz Jeffrey Steele Carson Schütze Kristen Syrett Bonnie D. Schwartz Kriszta Szendroi Nuria Sebastian-Galles Amanda Seidl Margaret Thomas Ann Senghas Ruth Tincoff Ludovica Serratrice John Trueswell Rushen Shi Leher Singh

Barbora Skarabela

Roumyana Slabakova

Elena Valenzuela Melanie Soderstrom Virginia Valian Angeliek van Hout Spyridoula Varlokosta Joshua Viau Marilyn Vihman Laura Wagner Daniel Weiss Lydia White Anne-Michelle Tessier Elizabeth Wonnacott Fei Xu Charles Yang Ianthi Maria Tsimpli Chen Yu Sharon Unsworth Tania Zamuner Sigal Uziel-Karl 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 Ray Jackendoff 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 Patricia Kuhl 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 "Language Delay Does it matter?" with presentations from Fred Genesee, Lauren McGrath, Gary Morgan, Bencie Woll, and Leslie Rescorla will be held on Saturday at 12:15 PM in Metcalf Large.

Poster Sessions

- **Poster Session I:** On Friday, 35 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, 33 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 Saturday at 8:00 AM in the Conference Auditorium.
- The **Society for Language Development** will hold its annual symposium, "Neuroplasticity and language," on Thursday, November 1 at 1:00 PM in Metcalf Large, with a reception following immediately in Metcalf Small. Speakers include Bruce McCandliss, Alvaro Pascual-Leone, and Rebecca Saxe.
- **NSF and NIH consultation hours** will be held in the Ziskind Lounge on Friday 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 Granby Lot (665 Commonwealth Avenue) for \$12 per day on Thursday and Friday and \$10 per day
 on Saturday and Sunday, with overflow parking in the Warren Towers Garage (700 Commonwealth Avenue) if necessary. 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 320-321.
- 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 38th Annual Boston University Conference on Language Development is tentatively scheduled for November 1 3, 2013, 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

Network: BU Guest (unencrypted)
Guest ID: 903489

Account Name: bucld37

NIH/NSF Consultation Hours

Peggy McCardle (NIH) and Joan Maling (NSF)

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

Schedule at a Glance

Thursday, November 1

1:00 PM - 5:00 PM	Society for Language Development Annual Symposium
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Friday, November 2

8:00 AM	Registration begins
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 3

8:30 AM	Registration begins
8:00 AM - 9:00 AM	Funding Symposium
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 4

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 2

Time	Session A (Metcalf Small)	Session B (East Balcony)	Session C (Conference Auditorium)
9:00 - 5:00	BOOK EXHIBIT		
9:00	C. Lew-Williams, J. Saffran: Pushing the word boundary: Infants use isolated words as anchors for segmentation	M. Coppola, D. Gagne, A. Senghas: WHO chased the bird? Narrative Cohesion in an Emerging Language	J. Snedeker, M. Lee, T. Brookhyser, M. Jiang: Negation in children's online language comprehension: Evidence for rapid semantic analysis
9:30	J. Lany: Relationships between lexical and grammatical development: Does statistical learning play a role?	A. Shusterman, T. Berkowitz, R. Lange: The acquisition of number concepts in oral-deaf preschoolers	A. Melançon, R. Shi: Grammatical knowledge and its immediate processing during online comprehension by infants
10:00	K. Jin, J. Shin, C. Fisher, H. Song: Counting the (missing) nouns: Syntactic bootstrapping in Korean	R. Magid, J. Pyers: The development of deaf and hearing preschoolers' use of iconicity: A modality-independent facilitative effect	J. Rett, N. Hyams, L. Winans: The effects of syntax on the acquisition of evidentiality
10:30		BREAK (Ziskind Lounge)	
11:00	N. Altvater-Mackensen, N. Mani: Effects of pre-exposure to object and label during word learning	J. Matthews, M. Hirakawa, Y. Hirakawa, H. Hosoi, N. Snape: A cross-linguistic comparison of native language phonological influence on perceived similarity among second language segmental contrasts	C. Lukyanenko, C. Fisher: Agreeing with conjoined subjects: 3-year-olds know one and one are (usually) two
11:30	E. Wojcik, J. Saffran: Toddlers encode similarity structure when learning novel words	A. Tremblay, C. Coughlin: Delayed use of prosodic cues in non-native speech segmentation	E. Blom, N. Vasić, J. De Jong: Processing and production of verb inflection in Dutch monolingual children with SLI
12:00	C. Sims, E. Colunga: Can toddlers learn lexical categories from screen media?	J. Namjoshi, S. Gaillard, A. Tremblay: Use of lexical vs. prosodic information in L2 sentence interpretation	K. Mealings, K. Demuth: Utterance length effects on 3-year-olds' third person singular -s: An acoustic investigation
12:30	LUNCH BREAK/	BUCLD BUSINESS MEETING (Confer	ence Auditorium)
2:00	H. Yeung, T. Nazzi: Ostensive and referential object labeling helps infants learn generalizable sound patterns	J. Valdes Kroff, P. Dussias, C. Gerfen, L. Perrotti: The dynamic nature of real-time grammatical gender processing	M. Sutton, M. Fetters, J. Lidz: Children really know Principle C by 30 months
2:30	W.Q. Yow: Monolingual and bilingual children's use of gestures and grammatical agreement in pronoun interpretation	E. Coderre, K. Conklin, W. van Heuven: Lexical processing is delayed by 100 ms in a second language	J. Hartman, Y. Sudo, K. Wexler: Principle B and phonologically reduced pronouns in child English
3:00	ATTENDED	POSTER SESSION I (Metcalf Large and Zisl	kind Lounge)
4:15	A. Brown, J. Chen: Monolingual versus bilingual L1: Manner in speech and gesture in Mandarin, Japanese, and English	J. White, M. Sundara: Infant biases in the learning of phonological alternations	A. Achimova, C. Crosby, V. Deprez, K. Syrett, J. Musolino: Which account of wh-/quantifier interaction should everyone adopt? A new take on a classic developmental puzzle
4:45	K. Mumford, S. Kita: On the relationship between right handed pointing and language development during infancy	A. Chen, R. Kager: Perceptual constraints on the early discrimination of lexical tones	D. Panizza, A. Notley, R. Thornton, S. Crain: When children are as logical as adults: Entailment patterns affect the interpretation of numerals in language development
5:15	Ş. Özçalışkan, S. Goldin-Meadow: Is seeing gesture necessary to gesture like a native speaker?	L. Liu, R. Kager: How does bilingualism alter infants' tone perception during perceptual reorganization?	SOME and NOT EVERY: Comparing direct and indirect scalar implicatures E. Shetreet, J. Reading, N. Gaab, G. Chierchia
5:45	DINNER BREAK		
7:45	KEYNOTE ADDRESS: (Metcalf Large) "Issues in Acquisition from the Perspective of the Parallel Architecture" Ray Jackendoff, Tufts University		
9:00	UNATTENDED POSTER SESSION I (Metcalf Large and Ziskind Lounge)		

SATURDAY, NOVEMBER 3

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)		
10:00 - 6:00	BOOK EXHIBITS		
9:00	M. van Heugten, E. Johnson: Speaker adaptation in infancy: Is lexical access necessary?	A. Fernald, A. Weisleder, V. Marchman: The poverty of the stimulus has developmental consequences	W. Chu, B.D. Schwartz: The meanings of the <i>wh</i> -word <i>shenme</i> in the L2 Chinese of English and Korean speakers
9:30	E. Bergelson, D. Swingley: Talker- independence in word comprehension before 12 months	N. Rakhlin, J. Reich, S. Kornilov, E. Grigorenko: Interpretation of pronouns and reflexives in Russian-speaking children with language impairment (LI)	K-S. Park, B.D. Schwartz: Dative word- order alternations with respect to givenness in adult L2 Korean
10:00	S. Creel, K. Muench: Impossible to ignore: Phonological inconsistency slows vocabulary learning	A. Roesch, V. Chondrogianni: Comprehension of wh-questions in French and German typically developing children and children with SLI	B. Halloran, J. Rothman: Full access confirmed!: Restrictions on clitic solidarity in L2 Spanish
10:30		BREAK (Ziskind Lounge)	
11:00	N. Ferjan Ramirez, M. Leonard, E. Halgren, R. Mayberry: The neural correlates of childhood linguistic isolation	A. Martin, A. Utsugi, R. Mazuka: Vowel devoicing in infant-directed Japanese	M. Peter, R. Blything, C. Rowland, F. Chang: The role of verb bias in structural priming: Evidence from children and adults
11:30	A. Martin, A. Senghas, J. Pyers: Effects of delayed first-language acquisition on spatial cognitive skills: Evidence from signers of Nicaraguan Sign Language	Y. Wang, A. Cristia, A. Seidl: Acoustic correlates of stress in infant- and adult- directed speech	L. Hsin, G. Legendre, A. Omaki: Priming cross-linguistic interference in Spanish-English bilingual children
12:15	LUNCH SYMPOSIUM (Metcalf Large): "Language delay – does it matter?" Yonata Levy, Hadassah-Hebrew University (organizer) Fred Genesee, McGill University Lauren McGrath, MGH, Harvard University Gary Morgan and Bencie Woll, Deafness Cognition and Language Research Centre UCL Leslie Rescorla, Bryn Mawr College		
2:15	M. Srinivasan, D. Barner: Putting milk onto cows: A put-on bias in early denominal verb interpretation	J. Lidz, A. Omaki, N. Orita: Input in the lab causes 15-month-olds to learn an English non-adjacent dependency	R. Slabakova, J.C. Amaro, S. Kang: Can you curl up with a good Agatha Christie in your second language?
2:45	Y. Choi, S. Arunachalam: Learning manner and path verbs from the serial verb construction in Korean	J. Willits: Learning nonadjacent dependencies is easy when you make it realistically complex	A. Gürel, S. Uygun: Representation of multimorphemic words in the mental lexicon: Implications for second language acquisition of morphology
3:15	ATTENDED POSTER SESSION II (Metcalf Large and Ziskind Lounge)		
4:30	H. Konishi, C. Kosko, R. Golinkoff, K. Hirsh-Pasek: Quantity and quality of input influences verb comprehension – but in different ways	P. de Villiers, L. Masek: A predictive and unbiased assessment of narrative language in low-income Hispanic preschoolers	J-R. Hochmann: Pupillometry demonstrates 6-month-olds' representation of phonetic segments
5:00	H. Wang, T. Mintz: Using 'overlap' as a measure of young children's syntactic knowledge	H-W. Cheng, C. Caldwell-Harris: Orthographic transfer in highly proficient second language learners: Evidence from repetition blindness	J. Hay, T. Wang, J. Saffran: Perceptual narrowing in the second year: The case of pitch contour
5:45	"Human lang	PLENARY ADDRESS: (Metcalf Large) uage development: Using brain measures to ad	vance theory"
7.00		Patricia Kuhl, University of Washington	
7:00	UNATTENDED	POSTER SESSION II (Metcalf Large and	Ziskind Lounge)

SUNDAY, NOVEMBER 4

Time	Session A (Metcalf Small)	Session B (East Balcony)	Session C (Conference Auditorium)
9:00	H. Rabagliati, N. Hahn, J. Snedeker: Rapid lexical ambiguity resolution in highly-verbal children with autism	C. Ngon, S. Peperkamp: What anticipatory eye-movements reveal about covert speech: A deep look into the developing production lexicon	F. Smolík, V. Bláhová: Word order and information structure in a case-marked language: Lexically advanced Czech 3-year-olds comprehend OVS sentences
9:30	K. Patrick, F. Hurewitz, A. Booth: Word-mapping in autism: Evidence for backwards bootstrapping of social gaze strategies	R. van de Vijver, D. Baer-Henney: On the development of the productivity of plural suffixes in German	R. Mykhaylyk, Y. Rodina, M. Anderssen: Ditransitives in Slavic: Evidence from Russian and Ukrainian acquisition
10:00	R. Nappa, J. Snedeker: A surprising contrast: Children with autism spectrum disorders use contrastive stress to identify new referents but not to establish a contrast set	S. Lin, K. Demuth: The gradual development of English /l/	A.L. Santos, M. Lobo, C. Soares: Spontaneous and elicited production of European Portuguese clefts
10:30		BREAK (Ziskind Lounge)	
11:00	M. Bedny, J. Koster-Hale, L. Yazzolino, W. Johnson, R. Saxe: To peek and to peer: "Visual" verb meanings are largely unaffected by congenital blindness	I. Sekerina: Time course of processing of grammatical agreement information by Russian children	C. Bernard, J. Gervain: 8-Month-old French infants' acquisition of the word order of their native language
11:30	E. Unal, A. Papafragou: Linguistic and conceptual representations of inference as a knowledge source	L. Pozzan, L. Gleitman, J. Trueswell: It takes two (of the same kind) to play! Animacy effects on the comprehension of conjoined-subject intransitive sentences	K. Hawthorne, L.A. Gerken, R. Mazuka: Prosodic bootstrapping across ages and languages
12:00	J. Wang, P. Li, S. Carey: Language and thought relation in learning how stuff counts	L. Meroni, S. Unsworth, L. Smeets: Crosslinguistic influence in scope ambiguity: Evidence for acceleration	A. Delcenserie, F. Genesee: Language and memory abilities of internationally-adopted children from China
12:30	K. Johannes, C. Wilson, B. Landau: Modeling verb choice in spatial language: Refining the learning problem for English	P. Zhou, S. Crain, R. Thornton: The logic of double negation in child language	A. Horowitz, M. Frank: Learning from speaker word choice by assuming adjectives are informative

ALTERNATES

R. Bijeljac-Babic, J. Serres, B. Höhle, T. Nazzi	Acquisition of the trochaic bias in French-German bilingual infants
K. Byers-Heinlein, L. Rebner	Language differentiation by 20-month-old bilingual infants
I. Dautriche, A. Cristia, P. Brusini, S. Yuan, C. Fisher, A. Christophe	The role of prosody in interpreting novel verb argument structure
R. Guzzardo Tamargo, P. Dussias	Comprehension costs reflect production patterns: Evidence from Spanish-English codeswitching
K. Harrigan, V. Hacquard, J. Lidz	Desire really is easier than belief
T. Kras, T. Stipec	Interpretation of ambiguous subject pronouns in Croatian by people with Down syndrome and typically developing children
C. Kurumada, M. Brown, M. Tanenhaus	Distributional learning in pragmatic interpretation of prosody
B. Lintfert, B. Möbius	Using clustering methods to describe the development of intonational categories within a target-oriented parametric approach
P. Royle, A. Gascon, E. Courteau, A. Marquis, N. Bourguignon	Gender concord and semantic processing in French children: An auditory ERP study
A. Sugawara, H. Kotek, M. Hackl, K. Wexler	Long vs. short QR: Evidence from the acquisition of ACD
K. Sugisaki	The ban on adjunct ellipsis in child Japanese

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. Babineau, R. Shi	Top-down knowledge and syllable alignment in infants' word form interpretation
C. Bannard	Three-year-olds are more likely to imitate phrases produced once each by two speakers than those produced twice by a single speaker
M. Casillas, M. Frank	Cues to turn boundary projection in adults and preschoolers
E.Y. Chung	Effects of interference in L2 prosodic learning in relation to speech-accompanying gestures
F. Conlin, R. Hoffmeister	Learning to count spatially: The acquisition of plurality in ASL verbs of location
C. Coughlin	The decomposition of verbal inflections in native and non-native French
R. Curinga	Direct and indirect effects of morphological awareness on reading comprehension for adolescent Spanish- English emergent bilinguals
Y.A. Do	Child listeners integrate pragmatic and phonetic cues: Evidence from Korean
F. Eckman, G. Iverson, J.Y. Song	Covert contrast in the acquisition of second language phonology
S. Fish, R. Novogrodsky, R. Hoffmeister	The relationship between L1 antonym knowledge in a sign language (ASL) and L2 reading comprehension in a spoken language (English)
A. Gabriele, M. Sugita Hughes	Distinguishing 'count' and 'mass' nouns in a language that doesn't: Bare nouns in L2 Japanese
K. Gonzales, R. Gómez	Bilingualism promotes indexically-cued segregation of language structures in infancy
K. Hendrickson, M. Friend	Quantifying the relationship between infants' haptic and visual response to word-object pairings
J. Hoover	The effect of statistical regularities on optional infinitives in spontaneous speech
V. Kalia, M. Wilbourn, C. Mitchell, E. Donohue	Cultural differences in narratives and reading achievement in African American and Caucasian children
L. Lakusta, P. Muentener, I. Mejia, L. Petrillo, N. Mullanaphy, L. Muniz	Representations of goals and sources in causal motion events over development
A. Lane, K. Cartwright, A. Karney, L. Umberger, T. Toler	Executive skills and metalinguistic awareness: Cognitive correlates of late second language learning
P. Leseman, J. Verhagen, H. Mulder, E. de Bree	The influence of vocabulary size and phonotactic probability on two-year olds' nonword repetition

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. Lippeveld, Y. Oshima-Takane	The effect of input on children's acquisition of class extension rules for denominal verbs
T. Messick	Floating quantification in child grammar
M. Miyao, B.D. Schwartz	Saliency of discourse entities and production of referential expressions in L2 English
S. Park-Johnson	Auxiliary movement and the role of person: The case of Korean-English bilingual children
L. Pierce, D. Klein, J-K. Chen, F. Genesee	Residual neural activation to a lost first language in internationally adopted children from China
R. Pulverman, K. Capote, S. Hughson, W. Garber, P. Sorrell	Syntactic bootstrapping does not equal word learning: What do toddlers think a novel verb means?
C. Renaud	On the computation of the gender feature: Evidence from adjective agreement in L2 French, Spanish, and Hindi
K. Ribot, E. Hoff	Comparing language production and comprehension in young bilinguals
A. Romberg, J. Saffran	Concurrent learning of multiple structures in an artificial language
S. Roseberry, J. Reed, K. Hirsh- Pasek, R. Golinkoff	Call me! Toddlers' language learning from contingent and interrupted conversations
N. Sanchez-Walker	Comprehension of subject and object relative clauses by heritage language speakers (HLS) and second language learners (L2L) of Spanish
Y. Song	L2 processing of English plural inflection
K. Syrett, C. Kennedy, J. Musolino, S. Buco, K. Starcher	Acquiring the non-exact reading of numerical expressions: What semantics says you have to do and what pragmatics allows
S. Teubner-Rhodes, J. Lidz	When good predictions go bad: The role of cognitive control in word learning from syntax
V. Valian, A. Humphrey	Multilingualism and cognitive control: Simon and Flanker task performance in monolingual and multilingual young adults
K. Wagner, K. Dobkins, D. Barner	Slow mapping: Color word learning as a gradual inductive process
T. Wang, J. Saffran	Lexical tone in statistical learning

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
S. Allen	The acquisition of ergativity among children learning Northern Quebec Inuktitut: Implications for language change
N. Alsulaihim, T. Marinis	Phonological awareness and reading in monolingual Arabic speaking and bilingual Arabic-English speaking Kuwaiti children
K. Antoniou, N. Katsos, K. Grohmann, M. Cambanaros, S. Vorka	Does bilingualism confer an advantage for pragmatic abilities?
S. Arunachalam, L. Sheline	Verb learning in non-social contexts
C. Bouchon, C. delle Luche, C. Floccia, T. Nazzi	Consonantal specificity of name recognition in French- and English-learning 5-month-olds
E. Chestnut, M. Srinivasan, D. Barner	Pragmatic inference and part-whole language in children's early quantification of objects
V. Chondrogianni, T. Marinis	Production of definite articles in English-speaking sequential bilingual children and children with SLI
E. Fleischhauer, H. Clahsen	Morphological decomposition in child German: New evidence from cross-modal priming
L. Dominguez, M. Veale	Acquiring syntactic and referential properties of null subjects in a second language
A. Gavarró, X. Parramon	On the adjectival interpretation of passives: an experimental result
S. Girlich, E. Lieven	Children's comprehension of number inflections in German
M. Goldman	Knowledge of translation equivalents in the lexicons of bilingual preschoolers depends on word type
N. Gonzalez Gomez, S. Poltrock, T. Nazzi	Early word learning is influenced by relative phonotactic probability
C. Goodwin	Vocabulary development in a bimodal bilingual child
I. Grama, F. Wijnen, A. Kerkhoff	Constraints on non-adjacent dependency-learning: Distance matters
J. Grinstead, P. Lintz, J. De la Mora, M. Cantú-Sánchez, B. Flores	The extended optional infinitive stage in child Spanish SLI
J. Holzgrefe, C. Schröder, B. Höhle, I. Wartenburger	ERPs hint at adult-like perception of prosodic boundary cues in six-month-old infants

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

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Authors	Title	
T. Hudon, Christopher Fennell	The emergence of structural properties in infant and toddler phonological networks	
K. Kim, W. O'Grady, K. Deen	Poor performance on scrambled Korean OSV sentences by Korean heritage children: Performance, not competence	
R. Lassotta, A. Omaki, D. Panizza, S. Villata, J. Franck	Sentence revision and executive functions in French-speaking children and adults: Evidence from whquestions with filled-gaps	
P. Mak, F. Wijnen, L. van Weelden	Children's discourse integration: Evidence from eye tracking	
C. Manetti	The production of periphrastic passive in Italian preschool children: Evidence from an elicited production task and a syntactic priming study	
M. Metz, A. van Hout, H. van der Lely	The development of Dutch who and which questions: Processing number agreement in comprehension	
M. Nakipoğlu, Ö. Sarıgül, E. Yıldız, N. Yumrutaş	Frequency of use and the acquisition of the Turkish causative	
S. Snape, A. Krott	The relational shift in word interpretation during childhood: Evidence from noun-noun compounds	
C. Soares	The acquisition of infinitival constructions in European Portuguese: From bare forms to embedding	
L. Stites, Ş. Özçalışkan	Narrative perspective appears first in gesture	
K. Szendroi, J. Gervain, F. Berger, B. Höhle	The acquisition of prosodic focus marking: Evidence from 5-year-olds	
K. Tajima, K. Tanaka, A. Martin, R. Mazuka	Does motherese help children acquire native-language rhythm? A corpus analysis of "mora-timed" rhythm in Japanese infant-directed speech	
J. Verhagen, P. Leseman, M. Messer	Phonological memory and the acquisition of morphosyntax by child L2 learners	
L. White, H. Goad, D. Goodhue, H. Hwang, M. Lieberman	Syntactic ambiguity resolution in L2 parsing: Effects of prosodic boundaries and constituent length	
C. Yu, Y. Zhong	Selective attention in cross-situational statistical word learning	
D. Yurovsky, R.A.H. Bion, L.B. Smith, A. Fernald	Mutual exclusivity and vocabulary structure	

Pushing the word boundary: Infants use isolated words as anchors for segmentation

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

Caregivers often produce fluent speech, but they also produce isolated words. Research shows that (1) isolated words help infants discover statistical structure in fluent speech, and (2) familiar words such as Mommy provide cues to the boundaries of words adjacent to them (Bortfeld et al., 2005; Mersad & Nazzi, 2012). We tested whether isolated words could serve as boundary markers when they occured in fluent speech, facilitating segmentation of adjacent words. English-learning infants were familiarized with natural Spanish sentences containing three types of words: nouns that appeared in isolation and fluent speech, adjectives that always occurred after the fluent-speech presentations of nouns, and adjectives that never occurred adjacently to nouns. Listening times revealed that infants listened differentially to adjacent and nonadjacent adjectives, meaning they used isolated words as 'anchors' for segmenting fluent speech. This work extends our understanding of how infants discover words that rarely (if ever) occur in isolation.

Session B--East Balcony

WHO chased the bird? Narrative cohesion in an emerging language

Marie Coppola, University of Connecticut - Storrs Deanna Gagne, University of Connecticut - Storrs Ann Senghas, Barnard College

We investigated narrative cohesion, the systematic use of linguistic devices to establish and maintain reference, in an emerging language. Twelve Nicaraguan Sign Language (NSL) signers, representing three cohorts, or stages of language emergence, and four Nicaraguan Homesigners re-told the same narrative. Each utterance involving a main character was classified as an Introduction (first) or Maintenance (subsequent) mention, and the ways that participants expressed the identity of characters were categorized (e.g., noun, pronoun, constructed action, none). For Introductions, NSL signers in Cohorts 1-3 overwhelmingly produced forms that specifically identified characters, e.g., CAT (20/25); the remaining forms expressed the subject in a way that did not identify the character, such as embodying the character's actions while producing the verb. In contrast, Homesigners' Introductions included fewer nouns and some characters were completely unexpressed. These results suggest that linguistic input and interaction in a linguistic community are required for the emergence of narrative cohesion.

Session C--Conference Auditorium

Negation in children's online language comprehension: Evidence for rapid semantic analysis

Jesse Snedeker, Harvard University
Miseon Lee, Hanyang University
Tracy Brookhyser, Harvard University
Matthew Jiang, University of Wisconsin - Madison

The interpretation of negated sentences is a central topic in psycholinguistics because it differentiates online processes driven by lexical association from those reflecting semantic composition. To explore how the processing of negation emerges over development, a visual-world paradigm study was conducted with adults, 4-5's and 3's. Participants heard stories where a character had two pairs of objects and performed an action on one member of each pair before being interrupted. Next part of the story was described, using a negative or affirmative sentence ("John didn't wash/washed one of the trucks"), while participants looked at a picture of the four objects. Children of both ages used negation to incrementally restrict reference, looking to the target object as quickly for negative sentences as affirmative sentences. This pattern indicates that these gaze patterns reflect combinatorial semantic processing rather than mere lexical or contextual association, and that negation is rapidly integrated into semantic representations.

Notes	

Relationships between lexical and grammatical development:

Does statistical learning play a role?

Jill Lany, University of Notre Dame

Statistical learning may be central to lexical and grammatical development: The phonological and distributional properties of words provide probabilistic but reliable cues to their grammatical category membership and semantic properties. Infants' ability to capitalize probabilistic correlations to learn categories increases across the second year. However, it is unclear whether probabilistic cues can support learning word referents, as infants at this age often struggle to learn labels when task demands are high. The current experiment thus tested whether 22-month-old infants can use probabilistic correlations between words' distributional, phonological, and semantic properties to support word learning, and whether their use is related to language proficiency. Infants capitalized on statistical cues to learn word-referent mappings, but the degree to which they did so was linked to grammatical proficiency. These findings suggest that infants' ability to track higherorder correlations between sounds and meanings is related to both word learning skill and grammatical proficiency.

Session B--East Balcony

The acquisition of number concepts in oral-deaf preschoolers

Anna Shusterman, Wesleyan University Talia Berkowitz, Wesleyan University Rebecca Lange, Wesleyan University

This study addresses the relationship of number concepts and number language in oral-deaf children, who receive less incidental exposure to everyday number words than typicallyhearing children (Kritzer, 2008), and exhibit substantial delays in mathematical achievement and knowledge (Nunes & Moreno, 1998; Traxler, 2000). The goals were (1) to characterize deaf children's development in the domain of early numeracy, and (2) to assess the relationship between number language and concepts in a language-delayed population. Two standard tasks (give-N and which-is-X) assessed verbal number knowledge. Non-verbal number concepts were assessed using a setmatching task, and numerical acuity was assayed with a dotdiscrimination task. Oral-deaf children were delayed in verbal number development, attributable largely to delayed language in general, but exhibited the same qualitative milestones as hearing children. Oral-deaf children also were delayed on both non-verbal tasks. Thus, the pace of acquiring number concepts, even in non-verbal tasks, is set by number language.

Notes

Session C--Conference Auditorium

Grammatical knowledge and its immediate processing during online comprehension by infants

Andréane Melançon, University of Quebec - Montreal Rushen Shi, University of Quebec - Montreal

We examined whether infants have abstract syntactic knowledge, by testing their immediate processing of grammatical gender. French-learning 30-month-olds viewed side-by-side objects (of different noun genders) while one was named in "Det+Adj+Noun". The determiner and adjective agreed in gender across trials. The gender of the target noun was manipulated in different trial types, agreeing with Det+Adi (e.g., le-MASC mignon-MASC chapeau-MASC, "the lovely hat") or disagreeing with Det+Adj (e.g., *la-FEM mignonne-FEM chapeau-MASC). Results show that upon hearing Det+Adj, infants already looked at the target-object in genderagreeing trials, but looked at the distractor in non-agreeing trials (where Det+Adj agreed in gender with the distractor). In latter trials infants only began shifting to the target after hearing most of the noun. Thus, merely seeing objects activated their noun genders. Furthermore, infants used the Det+Adj gender to pre-select the gender-congruent noun. Such immediate, automatic processing demonstrates that abstract grammatical representations are robust during early acquisition.

Counting the (missing) nouns: Syntactic bootstrapping in Korean

Kyong-sun Jin, University of Illinois - Urbana-Champaign Ji-eun Shin, Yonsei University Cynthia Fisher, University of Illinois - Urbana-Champaign Hyun-joo Song, Yonsei University

Accounts of syntactic bootstrapping have focused on the number of nouns as information about verb predicate-argument semantics (e.g., Yuan et al., 2012). Argument-dropping languages such as Korean pose challenges for syntactic bootstrapping. We asked whether Korean 2.5-year-olds could learn a verb's transitivity from realistically noisy linguistic data, with discourse support. Children watched dialogue-videos presenting a new verb in transitive or intransitive sentences. Arguments were frequently omitted in transitive but not intransitive dialogues. Crucially, nouns were omitted in question-answer pairs that imposed discourse constraints; A asked "What is Minsu doing?" and B answered "tamming the cat." Children later heard the verb in isolation ("Find tamming!") while watching a one-participant and a two-participant event presented side-by-side. Children who had heard transitive dialogues looked longer at the twoparticipant event than did those who had heard intransitive dialogues. Thus, with discourse support, even sparse data about verb transitivity can guide Korean 2.5-year-olds' verb interpretation.

Session B--East Balcony

The development of deaf and hearing preschoolers' use of iconicity: A modality-independent facilitative effect

Rachel Magid, Wellesley College Jennie Pyers, Wellesley College

Iconicity, the relationship between a symbol's form and its meaning, is widespread in sign languages. We asked whether preschoolers spontaneously map iconic signs describing shape to their referents and whether they learn iconic signs better than arbitrary signs. This study tested four hypotheses with hearing as well as signing deaf preschoolers: 1.) recognizing iconic signs depicting shape improves with age, 2.) iconic signs are better mapped to familiar rather than unfamiliar objects, 3.) those who successfully map iconic signs will use iconicity to remember new signs, and 4.) deaf preschoolers learning a language with abundant iconicity will use iconicity differently than hearing children. Results from the current study show that understanding this type of form-meaning mapping develops at 4 years and is equivalent for familiar and unfamiliar objects. At 4 years, iconicity helps children learn new symbols. Crucially, experience with a sign language does not affect children's use of iconicity.

Session C--Conference Auditorium

The effects of syntax on the acquisition of evidentiality

Jessica Rett, University of California - Los Angeles Nina Hyams, University of California - Los Angeles Lauren Winans, University of California - Los Angeles

Some authors have argued that children acquire indirect evidential markers later than direct evidential markers, but these studies involve languages in which the distinction is tied up with other semantic properties like aspect (Ozturk & Papafragou 2008, de Villiers et al.2009) or tense (Papafragou et al. 2007). In this study we examine the phenomenon of English copy-raising -- in which a copy-raised construction indicates direct evidence, while a non-copy-raised construction is compatible with direct or indirect evidence (Asudeh & Toivonen 2012) -- in adult comprehension and child production to argue that children seem to be able to acquire the direct/indirect distinction quite early and that early attention to evidential source does not depend on having a language with obligatory, morphologically encoded evidentiality.

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Effects of pre-exposure to object and label during word learning

Nicole Altvater-Mackensen, Georg-August Universität Göttingen Nivedita Mani, Georg-August Universität Göttingen

Infants learn novel words better after pre-exposure to either the label or the object. Here, we examine whether mere exposure to object and label is adequate or whether consistency of cooccurrence between label and object is required. 16-montholds were presented with an audio-visual story in which they repeatedly saw a novel object and heard a novel word. Children were then presented with two novel label-object pairings. Children had been presented with one of the objects and one of the labels during the story while the other object-label pair was unfamiliar. Half of the children received label-object pairings that were consistent with the story phase, while the other half received label-object pairings that were inconsistent with the story phase. Children were then tested on their recognition of the novel label-object pairings. Children successfully recognized the label-object pairings only when pre-exposed to consistent label-object pairings in the story and training phase.

Notes

Session B--East Balcony

A cross-linguistic comparison of native language phonological influence on perceived similarity among second language segmental contrasts

John Matthews, Chuo University Makiko Hirakawa, Bunkyo University Yahiro Hirakawa, Tokyo Institute of Technology Hironobu Hosoi, Gunma Prefectural Women's University Neal Snape, Gunma Prefectural Women's University

This study reports experimental results from a Similarity Judgment Task and an AX Discrimination Task in which Spanish and Japanese native speakers were presented with stimulus pairs containing a range of voiced coronals. Results, both in the form of lower similarity ratings and faster reaction times in discrimination, indicate that Japanese participants perceive the Spanish allophones [d] and [ð] to be more distinct from one another than Spanish participants do despite the absence of the interdental fricative in Japanese. Similarly, Spanish native speakers exhibit greater discriminability of Japanese allophones [d₃] and [3] than Japanese native speakers despite the absence of both segments in Spanish. We infer from these findings that allophony actively reduces the perceived phonetic distance between segments and that acoustic cues for second language segments lying outside the acoustic space of native language categories have an advantage in second language speech perception.

Session C--Conference Auditorium

Agreeing with conjoined subjects: 3-year-olds know one and one are (usually) two.

Cynthia Lukyanenko, University of Illinois - Urbana-Champaign Cynthia Fisher, University of Illinois - Urbana-Champaign

Three-year-olds honor subject-verb agreement in production and comprehension. What knowledge supports children's success? Notional number alone does not suffice: Children know toast is and pants are regardless of notional number. We investigated two additional possibilities: perhaps (a) children link verb-number with the abstract grammatical number of the subject constituent, or (b) select verb-forms based on knowledge of their co-occurrence with particular nouns. Results from an elicited-production task supported the first possibility. Threeyear-olds provided singular agreement for simple (cookie is...) or complex singular subjects (bunny with the carrot is...); they provided plural agreement for conjoined-singular subjects (cat and dog are...), though less consistently than for simple plurals (shirts are...). This pattern resembles adult production, and suggests two conclusions. First, the strongest controllers of plural agreement are morphologically-marked plurals. Second, children compute verb agreement based on the grammatical number of the entire subject constituent, not only on familiar contingencies between particular word-forms.

Toddlers encode similarity structure when learning novel words

Erica Wojcik, University of Wisconsin - Madison Jenny Saffran, University of Wisconsin - Madison

The semantic relationships between words have long been acknowledged as a crucial component of adult lexical knowledge. Less is known, however, about the ontogeny of such lexical networks. To determine whether learners encode relationships amongst novel words, two-year-olds were taught four novel words, comprising two pairs of visually similar referents. Participants then listened to repetitions of word pairs (in the absence of visual referents) that referred to either similar or dissimilar objects. Toddlers listened significantly longer to the word pairs referring to similar objects, suggesting that their representations of the novel words included knowledge about the similarity of the referents. A second experiment confirmed that toddlers can learn all four distinct words from the training regime, providing evidence that the results from the first experiment reflected the successful encoding of referents. Together, these results show that toddlers encode the similarities amongst referents from their initial exposures to new words.

Session B--East Balcony

Delayed use of prosodic cues in non-native speech segmentation

Annie Tremblay, University of Kansas Caitlin Coughlin, University of Kansas

This study uses visual-world eye-tracking to determine whether English learners of French can learn to use F0 for locating word-final boundaries in French. F0 rise is often word-initial in English but often word-final in French. Participants heard French sentences with lexical competitors created segmentally between 2 words (stimulus: chat grincheux 'cranky cat'; target: chat 'cat'; competitor: chagrin 'sorrow'), and clicked the word they heard (of 4 options). The target word was either accented or unaccented, and stimuli were either natural or resynthesized speech (swapped F0 of accented and unaccented targets). Learners, but not natives, were more accurate selecting target words with F0 rise than without it. Natives, but not learners, showed higher differential proportions of target- and competitor-fixations for target words with F0 rise than without it. Proficiency did not interact with the variables. This suggests that L2 learners' use of F0 rise is delayed compared to that of natives.

Session C--Conference Auditorium

Processing and production of verb inflection in Dutch monolingual children with SLI

Elma Blom, University of Amsterdam Nada Vasic, University of Amsterdam Jan de Jong, University of Amsterdam

Are verb inflection errors in Dutch Specific Language Impairment (SLI) caused by impaired representations, by performance deficits, or by both? To address this issue, we tested 63 Dutch monolingual children (6-8y), using a threegroup design. A self-paced listening task assessed whether children processed incorrect verb forms. A cloze test measured the effect of verb phonology on the correct expression of verb inflection. We found 1) that the SLI group did not distinguish incorrect verb forms from correct verb forms if the ungrammatical structure contained a frequent error (omission), but 2) if the ungrammatical structure contained an infrequent error (substitution), ungrammaticality was noticed, and 3) marked codas caused verb inflection errors in children with SLI. The processing results indicate that the impairment affects verb inflection representations, whereas the effect of phonology points to performance deficits. We discuss the outcomes in light of a domain-general processing approach to SLI.

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Can toddlers learn lexical categories from screen media?

Clare Sims, University of Colorado - Boulder Eliana Colunga, University of Colorado - Boulder

Research indicates that infants cannot accurately learn words from screen media (e.g., television, videos) but suggests that this deficit is overcome by two years of age. However, the nature of screen mediated word learning in toddlers is still an open question, particularly whether toddlers learn words as robustly from a video as from a person. We examined 2½to 3-year-old's identification, generalization, and retention of words learned from video versus from an experimenter. Children were taught new words and tested on identification of target objects and generalization to similar but untrained objects, both immediately and after a delay. Groups were equivalent in target identification and retention. Generalization performance was equivalent initially, but diverged after the delay: the in person group generalized correctly, but the video group no longer discriminated between members and non-members of the category. This suggests a video deficit in the robustness of learned lexical categories in toddlers.

Session B--East Balcony

Use of lexical vs. prosodic information in L2 sentence interpretation

Jui Namjoshi, University of Illinois - Urbana-Champaign Stephanie Gaillard, University of Illinois - Urbana-Champaign Annie Tremblay, University of Kansas

Native Speakers (NS) compute "good-enough" structural analyses of sentences when parsing is difficult. This study investigates whether second/foreign language learners' (L2ers') structural analysis of temporarily ambiguous sentences is similarly "good-enough", and whether they can avoid or recover from garden paths using cues to structural information: lexically encoded verb-bias cues (normed with NSs) and non-lexical prosodic cues. In a listening task with temporarily ambiguous cross-spliced sentences with facilitating (a), ambiguous (b), or conflicting (c) prosody, English L2ers of French and French NSs answered a syntactically incorrect true-or-false question. Logit mixed-effects models revealed a marginal effect of prosody for NSs; a significant effect of prosody and a significant interaction between prosody and proficiency (cloze test scores) for L2ers; neither group showed an effect of verb bias or interaction between verb bias and prosody. These results indicate that prosody, but not verb bias, influences sentence comprehension for both L2ers and NSs.

	Notes	

Session C--Conference Auditorium

Utterance length effects on 3-year-olds' third person singular -s: An acoustic investigation

Kiri Mealings, Macquarie University Katherine Demuth, Macquarie University

Children's spontaneous speech suggests utterance length and position may contribute to early grammatical morpheme omission. This study experimentally investigated whether increased utterance length (hence increased processing load) adversely affects children's third person singular -s production. An elicited imitation task with 12 Australian-Englishspeaking children aged 2;9-3;2 (M=2;11) compared third person singular production in 3-word and 5-word utterances, utterance-medially (e.g. He sits back; He sits back and swings) and utterance-finally (e.g. There he sits; That's the way he sits). Children saw pictures of the utterances on a computer and repeated 16 pre-recorded utterances. Acoustic analysis determined morpheme presence/absence and duration. Third person singular production was significantly lower utterancemedially than utterance-finally for the 5-word compared to 3-word utterances. This suggests increased utterance length, hence processing load, results in worse morpheme production in the prosodically challenging utterance-medial position. This may help explain variable morpheme omission in older SLI/HI children where working memory is problematic.

Ostensive and referential object labeling helps infants learn generalizable sound patterns

Henny Yeung, CNRS, University of Paris V Thierry Nazzi, CNRS, University of Paris Descartes

Infants learn many language-specific sound patterns by their first year of life, and some suggest that object labeling contributes to sound pattern learning by highlighting relevant phonetic contrasts. The present study asked whether a phonetic learning from labeling is generalizable and examined lexical stress, which is constrastive in Spanish (e.g., /'be.be/ 'he/she drinks' versus /be.'be/ 'baby'), but not in French. Experiment 1 had a training phase where 10-month-old French-learners were given either consistently or inconsistently contrastive word labels (e.g., consistent: Object A labeled /'ma.bu/, and Object B labeled /ma.'bu/; inconsistent: mixed pairings). Stress discrimination was measured in a subsequent test phase with words that shared no common consonants or vowels. Experiment 2 had a perceptually matched training phase, where the ostensive and referential value of the labels was altered. Results suggest that consistent and ostensive/referential object labels can help infants identify the acoustic properties that signal distinctions across different phonetic contexts.

Session B--East Balcony

The dynamic nature of real-time grammatical gender processing

Jorge Valdes Kroff, University of Pennsylvania Paola Dussias, Pennsylvania State University Chip Gerfen, American University Lauren Perrotti, Pennsylvania State University

Spanish speakers utilize grammatical gender encoded on the article in real-time processing (Lew-Williams & Fernald, 2007). However, bilinguals use masculine in codeswitching with English nouns, e.g. el juice and el cookie. Using the visual world paradigm, we examine how exposure to codeswitching affects gender processing in a group of Spanish (L1) - English (L2) bilinguals in a Spanish-only and codeswitching block. For Spanish, a monolingual group confirmed facilitation for different gender trials regardless of gender (different gender, Region 300; same gender, Region 500). Bilinguals only show facilitation for feminine different gender trials (different gender, Region 400; same gender, Region 500; masculine different and same, Region 500). For codeswitching, bilinguals continued to show facilitation for feminine conditions (Region 400 for feminine v. Region 700 for masculine). We discuss the results in relation to the dvnamic nature of gender processing suggesting that bilinguals' reliance upon masculine as an informative cue has shifted.

Session C--Conference Auditorium

Children really know principle C by 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 interpretations in Principle C contexts, correctly interpreting sentences like "she's patting Katie" as non-reflexive. Here, we argue that this behavior is motivated by accurate grammatical knowledge, rather than a non-adult heuristic strategy to interpret reference based on the transitivity of the verb. We show that children's behavioral patterns at 30 months cannot be accurately captured by attributing alternate interpretive strategies, suggesting that children appropriately represent Principle C by 30 months.

Notes

Monolingual and bilingual children's use of gestures and grammatical agreement in pronoun interpretation

W. Quin Yow, Singapore University of Technology & Design

Pronouns are particularly challenging for young children to interpret because they carry little lexical information and their interpretation depends, in part, on shared knowledge and expectations of interlocutors. Gestures (e.g. co-referential localizing gestures) may provide additional information that helps disambiguate pronouns interpretation, e.g. adults are less likely to interpret an ambiguous pronoun as the first-mentioned character when gestured to the second-mentioned character. This study explored how monolingual and bilingual preschoolers integrate co-referential localizing gestures with other grammatical cues (first-mention bias) when interpreting ambiguous words, such as pronouns. We found that bilingual preschoolers indicated a greater level of sensitivity (more adult-like responses) to the experimenter's gesture than monolinguals, including a burgeoning first-mention bias and differentiated responses when first-mention bias was conflicted with gesture. This suggests that there may be a specific sensitivity to gesture as a potential linguistic channel for bilingual children.

Session B--East Balcony

Lexical processing is delayed by 100 ms in a second language

Emily Coderre, University of Nottingham Kathy Conklin, University of Nottingham Walter van Heuven, University of Nottingham

Rapid language processing is imperative for successful communication; however, reduced language proficiency can have detrimental effects on processing speed. Using electroencephalography (EEG), we compared the timecourse of early word recognition in monolinguals and bilinguals' first (L1) and second (L2) languages. Words were neurally distinguished from non-linguistic symbol strings at approximately 170 ms in monolinguals and bilinguals' L1, indicating that bilingualism does not affect early word recognition in a native language. However, orthographic recognition occurred 100 ms later in the bilinguals' L2. This delay was consistently found in a color-naming Stroop paradigm which manipulated stimulus onset asynchrony (SOA), indicating that orthographic recognition in an L2 is automatically activated but significantly These findings demonstrate novel evidence delayed. that the bilingual L1 does not experience early linguistic processing delays, despite the reduced frequency of use relative to monolinguals. In contrast, reduced proficiency in an L2 leads to a fundamental delay in language processing.

Notes

Session C--Conference Auditorium

Principle B and phonologically reduced pronouns in child English

Jeremy Hartman, Massachusetts Institute of Technology Yasutada Sudo, Massachusetts Institute of Technology Ken Wexler, Massachusetts Institute of Technology

The "Delay of Principle B Effect" (DPBE) is a longstanding finding in child language acquisition (Chien and Wexler 1990, Thornton and Wexler 1999). A related finding in languages with clitic pronouns is that the DPBE disappears when the clitic pronoun is used (e.g., McKee 1992; Baauw, Escobar, & Philip 1997). Recently, the DPBE has been challenged by Conroy et al. (2009). We present experimental evidence showing that the DPBE in English is sensitive to the phonological form of the pronoun, e.g. a full pronoun him vs. a reduced pronoun 'm, and is only observed with the former. The novel results are important in two ways. First, they demonstrate that the clitic effect extends to English reduced pronouns, showing that English reduced pronouns share a cross-linguistic acquisitional property of clitics. Second, they provide evidence that Conroy et al.'s (2009) discrepant results may have been caused by their use of reduced pronouns.

Monolingual versus bilingual L1: Manner in speech and gesture in Mandarin, Japanese, and English

Amanda Brown, Syracuse University Jidong Chen, California State University - Fresno

This study investigates construal of Manner of motion in speech and co-speech, iconic gesture in Mandarin-Chinese, Japanese, and English, focusing on differences between the monolingual and late bilingual L1. Cross-linguistic differences in the monolingual baseline converge in bilingual L1 gesture production, suggesting that (1) a tripartite typological classification may be observed in some aspects of motion event expression, (2) effects of a developing L2 can be seen in an established L1, (3) such effects may be the result of language-specific L1-L2 interactions as opposed to general effects of bilingualism, and (4) analyses of gesture provide insights beyond those obtained from analyses of speech alone.

Session B--East Balcony

Infant biases in the learning of phonological alternations

James White, University of California - Los Angeles Megha Sundara, University of California - Los Angeles

Adults have been shown to disfavor saltatory phonological alternations, which occur when there is an intermediate nonalternating sound between two alternating sounds (e.g., [p] alternates with [v], but [b] does not alternate). In this study, 12-month-old infants were exposed to pairs of words in an artificial language beginning with either [p, v] or [t, z]. For each infant, one pair of sounds was contrastive and the other formed a potentially saltatory alternation (counterbalanced). At test, infants looked significantly longer to novel sounds that were intermediate between contrastive sounds than to those intermediate between alternating sounds, implying that the two types were treated differently. When infants were instead trained on alternations that could not be saltatory (Exp. 2), no differences were found at test. Therefore, only in cases with potentially saltatory alternations did infants treat the test items differently. Together, these results indicate that infants, like adults, exhibit an anti-saltation bias when learning novel alternations.

Session C--Conference Auditorium

Which account of wh-/quantifier interaction should everyone adopt? A new take on a classic developmental puzzle

Asya Achimova, Rutgers University - New Brunswick Christa Crosby, Rutgers University - New Brunswick Viviane Deprez, CNRS, Rutgers University - New Brunswick Kristen Syrett, Rutgers University - New Brunswick Julien Musolino, Rutgers University - New Brunswick

A long-standing puzzle in research on wh-/quantifier interaction stems from the fact that while pair-list answers (PLA) are claimed to only be available for subject-quantified wh-questions (1), preschoolers incorrectly produce PLA to object-quantified questions, (2). (1) Which boy did every girl kiss? Mary kissed John, and Sue kissed Peter. (2) Which boy kissed every girl? *John kissed Mary, and Peter kissed Sue. In our experiment, preschoolers and adults watched stories, followed by wh-quantifier questions, to which they provided answers. We found that children do overgeneralize PLA to object-quantified questions in precisely those contexts where adults never produce them. Indeed, adults never produced PLA in response to questions with every, and almost always did with each. Preschoolers also distinguished between every and each, but in the wrong direction. We discuss a new account of these findings in terms of the growing ability to differentiate the distributive properties of every and each.

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On the relationship between right handed pointing and language development during infancy

Katherine Mumford, University of Birmingham Sotaro Kita, University of Birmingham

Previous research has shown a link between language development and right handed pointing during infancy (Esseily et al, 2011). It remains unclear, however, if this is due to a temporary activation of the left hemisphere due to use of vocalisations, or to increasing functional specialisation of the left hemisphere for both speech production and gesture production. Further, it remains unclear if the relationship is simply mediated by general maturation. The current study investigated the relationship between language development and pointing handedness in 10-12 month old infants. The result showed a positive, significant correlation between receptive language development and right handed pointing. This relationship was not due to age (thus general maturation) or to vocalisations. Thus, at the onset of referential communication gesture and language develop together in the left hemisphere.

Session B--East Balcony

Perceptual constraints on the early discrimination of lexical tones

Ao Chen, Utrecht University René Kager, Utrecht University

We tested 4-month-old Dutch infants on their discrimination of pitch patterns realized in speech and in music. Four visual fixation experiments were carried out. Experiment 1 and Experiment 2 tested their discrimination of Mandarin midrising tone (T2) and low-dipping tone (T3). In Experiment 3, they were tested with three-note musical melodies that differed in relative pitch, with the pitch directions simulating T2 and T3. In Experiment 4, the infants were tested with another two three-note melodies that shared the same pitch direction, but differed in one semitone in absolute height. The infants succeeded in discriminating the musical melodies in both Experiment 3 and Experiment 4, but they failed to discriminate Mandarin T2 and T3 in both Experiment 1 and Experiment 2. Our results suggest that at four months of age, the infants perceive pitch differently in music and speech, and the difficulty in pitch discrimination is lexical tone specific.

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Session C--Conference Auditorium

When children are as logical as adults: entailment patterns affect the interpretation of numerals in language development

Daniele Panizza, University of Geneva, Fondazione Marica De Vincenzi, ONLUS, Italy Anna Notley, Macquarie University Rosalind Thornton, Macquarie University Stephen Crain, Macquarie University

We investigated whether 3-5-year-old children's interpretation of numerals is affected by entailment patterns in the same way as adults' interpretation. In our experiment a puppet (Kermit the frog) asked his friends to find some animals to organize a race. In the critical scenario one of Kermit's friends brought three animals (e.g. butterflies) when only two were actually required for the race. Kermit then stated "I remember what I told this boy I needed: two butterflies" and then he uttered one of the two experimental sentences: (1) I think this boy brought two butterflies. Give him a coin if I'm right. (2) If this boy brought two butterflies, give him a coin. Children who were presented with (2) accepted the statement systematically more often than those who heard (1), suggesting that both children and adults exploit the same mechanism, sensitive to logical entailment, to enrich the ultimate interpretation of number words.

Is seeing gesture necessary to gesture like a native speaker?

Şeyda Özçalışkan, Georgia State University Susan Goldin-Meadow, University of Chicago

Speakers of all languages gesture, but there are differences in the gestures that they produce. Do speakers learn languagespecific gestures by watching others gesture or by learning to speak a particular language? We examined this question by studying the speech and gestures produced by 40 congenitally blind adult native speakers of English and Turkish (N=20/ language) in comparison to 40 sighted adult speakers in each language (20 with blindfolds, 20 without blindfolds). We focused on speakers' descriptions of physical motion, which show strong cross-linguistic differences in patterns of speech and gesture use. Congenitally blind speakers of English and Turkish produced speech that resembled the speech produced by sighted speakers of their native language. More importantly, blind speakers of each language used gestures that resembled the gestures of sighted speakers of that language, suggesting that hearing a particular language is sufficient to gesture like a native speaker of that language.

Session B--East Balcony

How does bilingualism alter infants' tone perception during perceptual reorganization?

Liquan Liu, Utrecht University René Kager, Utrecht University

monolingual non-tone-language-learning perceptual reorganization for lexical tones occurs around 6-9 months, after which tonal sensitivity is sharply reduced. Several aspects remain unclear: whether monolingual and bilingual infants follow the same developmental trajectory for perceptual reorganization, how monolinguals and bilinguals differ in lexical tone perception across ages, and how the acoustic salience of tonal contrasts influences perception. 168 non-tone-language-learning monolingual and bilingual infants of 4 age groups were tested on their discrimination of an acoustically salient tonal contrast (/ta/, high level vs. high falling) in Mandarin and a manipulated non-salient contrast. Results show that bilingual infants follow the same developmental trajectory as monolingual peers in tonal tuning (between 5 and 9 months). Yet reduction of acoustic salience affected monolinguals' discrimination more strongly than bilinguals' discrimination. The finding that bilingual infants are more sensitive to non-native tonal contrasts may be due to the more challenging language environment they encounter.

Session C--Conference Auditorium

SOME and NOT EVERY: comparing direct and indirect scalar implicatures

Einat Shetreet, Children's Hospital Boston, Harvard University Julia Reading, Northeastern University Nadine Gaab, Children's Hospital Boston, Harvard University Gennaro Chierchia, Harvard University

Scalar implicatures (SI) are generated with weak scalars to exclude strong ones (e.g., some logically means some and possibly all but with SI it means some but not all). Under negation, indirect SIs are generated with strong scalars (not every implicates some, while being logically compatible with none). This study compared direct and indirect SI in children (~6 years) and adults. Participants were asked to determine if statements (including some or not every) given by a puppet in response to short videos were said well. We found no difference in the rates of direct and indirect SI responses in adults. Children SI rates were significantly higher than their indirect SI rates. This confirms that indirect implicatures are generated by adults and children providing evidence against the lexical approach to SI. The lower rates of indirect SI in children may indicate that computing them is more difficult than computing direct SI.

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FRIDAY 8:00 PM

KEYNOTE ADDRESS

Issues in acquisition from the perspective of the Parallel Architecture

Ray Jackendoff Tufts University

This talk summarizes the Parallel Architecture (Jackendoff, Foundations of Language, Oxford, 2002) and suggests some ways that it impacts on questions of language acquisition.

The central questions of the Parallel Architecture are (a) what a speaker must store in the lexicon, (b) what procedures a speaker uses to combine lexical items into a full utterance, and (c) how language learners acquire this knowledge. Taking the first of these questions seriously leads to the view that the lexicon contains not only words, but idioms, collocations, meaningful constructions (e.g. Bill belched his way out of the restaurant), productive morphological affixes, and ultimately phrase structure rules. One important consequence is that there is no formal distinction between words and rules; both are pieces of stored structure. A lexical item is more rule-like to the extent that it contains variables that must be satisfied in the course of combining this item with other pieces of structure (a position shared with Construction Grammar).

This view of the lexicon leads to a treatment of online computation in which sentences are constructed by combining lexical items – both words and rules – by means of the operation of Unification, a piece of formal machinery the Parallel Architecture shares with HPSG, LFG, and Construction Grammar. The process of grammar acquisition then involves constructing new lexical items – structural schemas – that capture generalizations among existing items by means of variables.

An important issue that then arises is how the grammar distinguishes between fully productive regularities (such as the form of English regular present participles) and semiproductive regularities (such as the form of English –tion nominals). In standard lexicalist approaches, the former is "in the syntax" and the latter "in the lexicon." In Pinker's "words and rules" approach, productive regularities are captured by rules, but semiproductive patterns are just statistical regularities among words. In the Parallel Architecture, the distinction between fully productive and semiproductive can be localized in a feature on a variable in a structural schema. I will show that this solution is preferable on grounds internal to the grammar, and that it pertains to syntax as well as to the classic cases in morphology.

This distinction is important for acquisition: what is the learner doing when determining whether a regularity is productive or semiproductive? The Parallel Architecture's approach makes this distinction not a radical difference in what component of grammar a regularity belongs to, but a simple feature distinction which then can be affected by various well-known frequency effects.

The overall message is that the Parallel Architecture offers a more graceful account of the formal character of language processing and language acquisition than has been previously possible, permitting a better integration of linguistic theory with cognitive neuroscience.

Top-down knowledge and syllable alignment in infants' word form interpretation

Mireille Babineau, University of Quebec - Montreal Rushen Shi, University of Quebec - Montreal

French liaison is a phonological process involving the underlying coda of certain words (typically function words) surfacing as the onset consonant of the following vowel-initial word. We examined infants' understanding of determiner liaison coda. French-learning 14-, 24- and 30-month-olds were familiarized with liaison-triggered ambiguous cases (e.g., "ces /z/onches", "these /z/onches"). Half of the infants were tested with the syllable-alignment interpretation ("zonches" versus another non-familiarized consonant-initial word). The other half was tested with the vowel-initial interpretation ("onches" versus another non-familiarized vowel-initial word), requiring the knowledge of determiner coda. Results showed that 30-month-olds discriminated the test trials in the vowelinitial condition, but not in the syllable-alignment condition. Fourteen-month-olds' responses were opposite: discrimination only in the syllable-alignment condition. Twenty-four-montholds showed no bias in either condition. Thus, infants are initially guided by the syllable-alignment constraint. Around age two, they start learning complex properties of determiners, and use their liaison knowledge to guide lexical processing.

POSTER SESSION I

Three-year-olds are more likely to imitate phrases produced once each by two speakers than those produced twice by a single speaker

Colin Bannard, University of Texas - Austin

It is well established that frequency affects language acquisition - all else being equal, children acquire greater facility earlier with forms that they encounter more. All recurrences, however, are not equal. Twenty-four three-year-olds played a game involving 20 drawings of objects that were described with novel adjective-noun pairs. In the corroboration condition, one experimenter and then another described 10 pictures (both using the same adjective-noun pair), before it was then the child's turn. In the repetition condition a single experimenter described 10 pictures twice before it was the child's turn. The order of conditions and the experimenter roles were counterbalanced. The children's utterances were coded for similarity to the experimenter utterances. The children copied the experimenter-produced phrase more in the corroboration than in the repetition condition. This finding suggests that linguistic forms produced by multiple sources (and hence more likely to be conventional) are more likely to be learned.

POSTER SESSION I

Cues to turn boundary projection in adults and preschoolers

Marisa Casillas, Stanford University Michael Frank, Stanford University

Children take significantly longer to respond in conversation than adults do. Is children's delay due to difficulty in formulating a response, or an inability to predict when it's their turn to start speaking? We tested whether children, like adults, can predict points of speaker exchange during conversation by tracking cues to points of potential turn-exchange. We measured the gaze of 72 preschoolers and 11 adults while they watched a six-minute video with two 30-second dyadic conversations in English and four in languages they did not speak. We find that preschoolers and adults not only predict speaker exchanges with their gaze, but do so during non-English conversation. This means that they attend to both prosodic and lexical information in finding the right time to come in. Their predictions were best for question-answer switches, suggesting that when a next turn is likely, children cue in to speaker switches.

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Effects of interference in L2 prosodic learning in relation to speech-accompanying gestures

Esther Y. Chung, Johns Hopkins University

The L2 learner must acquire both segmental and suprasegmental features for intelligibility. One such suprasegmental feature is stress, for which L2 learners have been shown to have transfer effects. English has both lexically contrastive and phrasal stress, typically realized with increased amplitude, duration, and pitch movement. Korean may have lexical stress, occurring on the first syllable if the first syllable is heavy and on the second syllable otherwise, or it may have phrasal edge prominence. By looking at the timing of speech-accompanying gestures (i.e., tapping), this study aims to answer: (1) Is prosodic acquisition susceptible to transfer effects? (2) Does Korean have lexical stress or phrasal prominence? The results show a negative transfer effect for L1 Korean speakers, but not for L1 English speakers. Furthermore, taps fell mostly on the first syllable in Korean utterances for L1 Korean speakers, providing support for the edge prominence view of Korean intonation.

POSTER SESSION I

Learning to count spatially: The acquisition of plurality in ASL verbs of location

Frances Conlin-Luippold, Boston University Robert Hoffmeister, Boston University

The present study examined the acquisition of plurality within classifier constructions of American Sign Language (ASL) (specifically verbs of location (VOLs)) and the influence the movement root has on this process. To attain productive fluency in verbs of motion and location, deaf children must learn the various classifier handshapes along with a repertoire of movement roots. In this study, we investigated four different movement roots (trace, hold sweep, dual stamp and hold stamp) commonly employed to express plurality in VOLs. The Plurals and Arrangement subtest (Hoffmeister, 1999) was administered to deaf students ages 4 to 18. Results revealed significant effects for age and parental status while analysis of the individual movement roots found trace and dual stamp movement roots were more easily acquired than hold stamp and hold sweep movement roots. We propose this divergence to be due to differences in articulation and conceptual understanding of the movement roots.

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POSTER SESSION I

The decomposition of verbal inflections in native and nonnative French

Caitlin Coughlin, University of Kansas

The present study uses a masked-priming word-naming task to investigate whether adult learners of French, and native French speakers, decompose regularly inflected verb forms into stem and affix. Masked primes are presented on the screen for 50ms, followed by a target word which the participant says as quickly as possible into a microphone. Primes were either the same form as the target word, a different form of the same verb as the target, an orthographically similar word, a semantically similar word, or an unrelated word. Pronunciation latencies from the appearance of the target and onset of pronunciation are measured and analyzed with linear mixed-effect models. The results show that like native French speakers, French learners show evidence of decomposing inflected forms into stem and affix. Previous studies do not show learner decomposition, suggesting that this methodology may be more sensitive to nonnative decomposition compared to previously used methods.

Direct and indirect effects of morphological awareness on reading comprehension for adolescent Spanish-English emergent bilinguals

Rebecca Curinga, City University of New York - Graduate Center

This study adds to the growing body of research on morphological awareness and reading. It involves 88 Spanish-English emergent bilinguals in a NYC high school, who entered with a large range in L1 literacy skills. It explores the relationship between morphological awareness and reading comprehension using multiple regression path analysis in both Spanish and English as well as across languages from L1 to L2. The path takes into consideration mediating variables such as reading vocabulary and L1 reading comprehension. Results suggest a strong relationship between morphological awareness and reading comprehension above and beyond that of reading vocabulary in both languages. After splitting participants into two groups: low- 2nd to 4th grade and high- 7th to 11th grade, differences in Spanish and English and between readers above/below 4th grade level in L1 emerged. Findings indicate the need for morphological awareness interventions at early stages of reading for Spanish-English emergent bilinguals.

POSTER SESSION I

Child listeners integrate pragmatic and phonetic cues:

Evidence from Korean

Young Ah Do, Massachusetts Institute of Technology

Different levels of linguistic representation often interact in language processing (Ganong 1980, Crain and Steedman 1985 among many). This study compares the maximum extent of such interactions from adults and children by testing integration of top-level pragmatic and bottom-level phonetic cues in speech perception in Korean. I report results from three experiments in which pragmatic contexts create referential bias of nouns (Rhode & Ettlinger 2010) and the nouns are confusable with different degrees showing that these two unrelated sources of information are only additively integrated to adult listeners, while children integrate the two cues super-additively.

POSTER SESSION I

Covert contrast in the acquisition of second language phonology

Fred Eckman, University of Wisconsin - Milwaukee Gregory Iverson, University of Wisconsin - Milwaukee Jae Yung Song, University of Wisconsin - Milwaukee

Research in both child phonology and disordered speech has reported a stage of acquiring phonemic contrasts in which some learners produced a statistically reliable, acoustically demonstrable distinction between segments which adult listeners and transcribers did not perceive. This type of distinction is termed a covert contrast, and is hypothesized to be an intermediate stage in progressing from making no distinction between contrasting target segments to full phonetic implementation of the contrast. Our paper reports the production of a covert contrast between English /s/-/z/ by 14 native speakers of Spanish. This phonemic distinction is absent in Spanish, where [z] occurs as an allophone of /s/. Acoustic analysis revealed that four participants who were transcribed as lacking the distinction between /s/ and /z/ in at least some word positions were nonetheless contrasting these segments covertly, showing a systematic distinction between [s] and [z] via voicing in relation to fricative noise.

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The relationship between L1 antonym knowledge in a sign language (ASL) and L2 reading comprehension in a spoken language (English)

Sarah Fish, Boston University Rama Novogrodsky, Boston University Robert Hoffmeister, Boston University

When considering the relationship between L1 and L2 vocabulary knowledge, one assumption is that there is a reciprocal dependency of concepts, skills, and linguistic knowledge, with transfer between one's L1 and L2. The current study examines whether this assumption is realized for an L1 and L2 of different modalities: American Sign Language (ASL) and English. This study is particularly of interest due to the fact that the L1 under investigation (ASL) does not have a written modality, so any transfer to the L2 (English) would indicate that the mechanism is not modality-dependent. 530 deaf participants (ages 8;0-18;0) took both an ASL antonyms test and an English reading comprehension test. Results indicate that there is a positive relationship between ASL and English, indicating that transfer between an L1 and L2 is not modality-dependent.

POSTER SESSION I

Distinguishing 'count' and 'mass' nouns in a language that doesn't: Bare nouns in L2 Japanese

Alison Gabriele, University of Kansas Mamori Sugita Hughes, City University of New York - Queens College

The study focuses on how differences in the morphological properties of the noun phrase in English and Japanese influence learners' interpretation of bare nouns in L2 Japanese. English and Japanese are similar with respect to the interpretation of 'mass' nouns. However, in Japanese, bare 'count' nouns are ambiguous and the specific interpretation will depend on the context. The results of an interpretation task suggest that English-speaking learners at early stages of development may take bare 'count' nouns to refer maximally to all items relevant in the context and have difficulty allowing the bare noun to refer only to a subset of items. Although there is an advantage for the mass nouns, the learners still have difficulty, suggesting that the problem is not due solely to L1/L2 differences but also to the ability to map between the linguistic form and the discourse context.

Notes

POSTER SESSION I

Bilingualism promotes indexically-cued segregation of language structures in infancy

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

The language environment for many children is a complex intersection of proficiency levels, accents, dialects and languages. One proposal is that children use speaker voice and other salient cues to disentangle this linguistic variation. Here we asked whether infants can segregate structures by voice and whether this depends on bilingual experience. Bilingual and monolingual learning 12-month-olds listened to an artificial language produced by two interleaved speakers. One speaker produced opposite patterns of word class relations in random order; the other speaker produced just one of these patterns. Since only this latter speaker followed a single pattern, we hypothesized that infants would have difficulty discriminating patterns unless they segregated voices. Results showed discrimination in bilinguals only. Experiment 2 ruled out that bilinguals are simply better at tracking probabilistic patterns across alternating voices. Consistent with PRIMIR, results support the joint roles of external (cues) and internal (cognitive processing) constraints on structural segregation.

Quantifying the relationship between infants' haptic and visual response to word-object pairings

Kristi Hendrickson, University of California - San Diego, San Diego State University Margaret Friend, San Diego State University

There has been a lively debate in the infant development literature regarding which response modality best measures infant knowledge. Recently two methodologies using different modalities (visual and haptic) have been offered for testing decontextualized word comprehension: the looking-whilelistening procedure (Fernald et al., 2008) and the Computerized Comprehension Task (Friend et al., 2008). We created an intermodal procedure combining the looking-while-listening procedure and the Computerized Comprehension Task to quantify the concurrent relationship between visual and haptic response as measures of infant word comprehension. Results show the haptic measure corresponded well with parent report in contrast to the looking-time measure. Additionally infants' attentional style was related to their haptic performance. Specifically infants who had shorter fixation durations touched the target more often and accurately than did infants with longer fixation durations. Together these data suggest haptic and visual indices, as well as parent report, may be differentially sensitive to latent versus active lexical representations.

POSTER SESSION I

The effect of statistical regularities on optional infinitives in spontaneous speech

Jill Hoover, University of Massachusetts - Amherst

Young children's inconsistent use of grammatical finiteness markers characterizing the optional infinitive stage of language development may, in part, be related to statistical regularities of words in the input, with some differences noted between typical development and Specific Language Impairment (SLI; Hoover et al., 2012; Leonard et al., 2007; Marshall & van der Lely, 2006). A remaining question is whether effects are present in spontaneous speech or limited to well-controlled experimental tasks. Following, this study examined whether neighborhood density and phonotactic probability of verbs influenced children's third person singular finiteness marking in spontaneous speech. Consistent with findings from experimental tasks, spontaneous language sample data from 40 children, 20 typically developing and 20 with SLI, confirm effects of both variables and group differences between typical development and SLI. Theoretical implications and future directions will be discussed.

POSTER SESSION I

Cultural differences in narratives and reading achievement in African American and Caucasian children

Vrinda Kalia, Worcester State University Makeba Wilbourn, Duke University Carlene Mitchell, Duke University Erin Donohue, Worcester State University

Decontextualized language requires the story-tellers to use certain linguistic features, known as literate language features (LLFs), to provide information about the story that is unshared between the teller and listener of the narrative (Pellegrini, 1985). Thus, LLFs reduce ambiguity and increase explicitness of the information being conveyed (Curenton & Justice, 2004). Cultural factors may influence the use of LLFs in children's narratives. Unfortunately, little is known about the development of LLFs in African American (AA) children's narratives (Curention & Justice, 2004), and their relationship with language and literacy development. The presented study compared the use of LLFs in school-aged AA and Caucasian children and found that AA children used more conjunctions and simple elaborated noun phrases in their narratives. Further, use of LLFs was unrelated to AA children's reading but associated with their vocabulary. Our findings indicate a complex relationship between oral language, narrative, and academic achievement in AA children.

Notes

Representations of goals and sources in causal motion events over development

Laura Lakusta, Montclair State University
Paul Muentener, Massachusetts Institute of Technology
Ivonne Mejia, Loyola University Maryland
Lauren Petrillo, Seton Hall University
Noelle Mullanaphy, Montclair State University
Lauren Muniz, Montclair State University

Previous studies have shown that when children talk about motion events, they tend to encode the goal path more prominently than the source path. The current study explores the hypothesis that non-linguistic aspects of the event modulate a linguistic goal bias. In particular, given that the ability to cause motion in another object (e.g. – a cannon shooting a ball) increases the prominence of entities in language (Kako, 2006), we investigate whether the causal status of a source object modulates the goal bias in children and adults. The results revealed that for both children and adults, a goal bias persisted for Causal events, although it was less robust compared to a goal bias for Non-Causal events. These findings suggest that non-linguistic features of event representations, specifically, the causal status of the source, influence a goal bias over development.

POSTER SESSION I

Executive skills and metalinguistic awareness: Cognitive correlates of late second language learning

Amanda Lane, Christopher Newport University Kelly Cartwright, Christopher Newport University Audrey Karney, Christopher Newport University Laura Umberger, Christopher Newport University Timothy Toler, Christopher Newport University

The current study investigated the relations of executive functioning and metalinguistic awareness in a sample of college students who learned a second language later in life, at the secondary and college level. Because early bilingualism is related to cognitive benefits in areas such as executive skills and metalinguistic awareness, we expected that late language learners might also accrue similar benefits. A sample of 42 undergraduate students (mean age 20 years) participated. Significant relations between college-level language experience, executive functions, and metalinguistic awareness were found. Language majors/minors scored significantly higher than monolingual students in nonverbal working memory, phonemic awareness, and morphological awareness. Overall, college-level language experience was associated with better non-verbal working memory, switching, inhibition, cognitive flexibility, phonemic awareness, and morphological awareness. Our findings are important because they confirm prior work and add to the existing research on cognitive advantages for late second language learners.

Notes

POSTER SESSION I

The influence of vocabulary size and phonotactic probability on two-year olds' nonword repetition

Paul Leseman, Utrecht University Josje Verhagen, Utrecht University Hanna Mulder, Utrecht University Elise de Bree, Utrecht University

Vocabulary acquisition is essential for language acquisition and is related to many skills, among which is nonword repetition (NWR). Many studies have shown that phonotactic probability (PP) influences NWR performance such that repetition of high-PP nonwords is superior to repetition of low-PP nonwords. This study investigates whether a PP effect is found in the NWR performance of a sample of 708 monolingual Dutch 2-year olds. It also examines how vocabulary, measured through a receptive vocabulary task, relates to the size of the PP effect. The NWR task that was administered contained mono- and bisyllabic nonwords that had been manipulated for PP. The results show that 1) children repeated high-PP nonwords significantly more accurately than low-PP nonwords, and 2) there was a significant interaction between vocabulary and PP for bisyllabic items. The implications of the finding that PP affects NWR at 2 years. especially in children with large vocabularies, will be discussed.

The effect of input on children's acquisition of class extension rules for denominal verbs

Marie Lippeveld, McGill University Yuriko Oshima-Takane, McGill University

The present study investigated whether French-speaking 2-year-olds' ability to understand novel denominal verbs in an experimental task is related to the amount of flexible use of noun-verb pairs in their input. In the experimental task, children were taught novel nouns, and then tested on their interpretation of these nouns, as well as the denominal verbs. In the observational task, we recorded a 30-minute interaction between mothers and their children, and calculated the proportion of flexible use of noun-verb pairs for each mother. The results demonstrated that while the children as a group were able to learn the parent nouns, only those whose mothers used noun-verb pairs flexibly at a high rate (26-100%) during the observational task were able to correctly interpret the denominal verbs. This provides the first evidence for a link between the flexible use of noun-verb pairs in parental speech and children's acquisition of the class extension rules.

POSTER SESSION I

Floating quantification in child grammar

Troy Messick, University of Connecticut - Storrs

English *all* can occur in either a pre-NP position (*All* the students ran) or in a floated position distinct from the NP (The students *all* ran). The present study investigates the acquisition of both structures by analyzing the spontaneous speech of ten (10) English speaking children from the CHILDES database. The child utterances of *all* were analyzed, and imitations, repetitions and routines were removed from the data. A correlation analysis was run, and the results suggest that the pre-NP structure and the floated structure are acquired simultaneously. The study also revealed that children use the pre-NP structure with both full and pronominal NPs but have a very strong bias towards pronominal NPs with the floated structure.

POSTER SESSION I

Saliency of discourse entities and production of referential expressions in L2 English

Mari Miyao, University of Hawaii - Manoa Bonnie D. Schwartz, University of Hawaii - Manoa, Radboud University Nijmegen

This study investigates the production of referential expressions (REs) within discourse by intermediate to advanced L2ers of English whose L1 is Chinese or Japanese. Arnold & Griffin (2007) showed that English-speaking natives tend to produce a more explicit RE (repeated name over pronoun) as the number of discourse entities increases. Two pictures depict a sequence of events; participants read the sentence provided for Picture1 and then complete the sentence for Picture2 following And then (1). Conditions differ by number of entities in the pictures (1NP/2NPs), gender-match/mismatch, and topic continuity/shift. (1) Picture1: Last Sunday, Mickey went to church (with Donald/Daisy). Picture2: And then, Mickey/he/ ___. Natives predominantly Daisy/she produce pronouns in the 1NP context but repeated names in the 2NP contexts even when pronouns would suffice. L2ers show a similar RE-production pattern. Such results challenge Sorace's (2011) claim that L2ers have difficulty coordinating lexical/syntactic knowledge and discourse/ pragmatic information due to computational complexity.

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Auxiliary movement and the role of person: The case of Korean-English bilingual children

Sunny Park-Johnson, DePaul University

The present study provides evidence that Korean-English (K-E) bilingual children show an effect of person [PRS] in their acquisition of Subject Auxiliary Inversion (SAI) in English. Twenty-one K-E bilingual and 19 monolingual English-speaking (M-E) preschool-aged children were recruited for an elicitation study testing the effect of person on the use of SAI. Results indicated a significant main effect for person on SAI for the K-E group, while no effect of person was found for the M-E group. Furthermore, qualitative analysis of K-E productions revealed four stages of SAI acquisition based on person for the K-E children. The paper proposes a syntactic analysis in which the person feature forms a complex matrix with other features in T, causing pied-piped movement of the features to C. The paper thus presents new evidence for a link between person and SAI and a theoretical account of the results that link [PRS] and SAI.

POSTER SESSION I

Residual neural activation to a lost first language in internationally adopted children from China

Lara Pierce, McGill University
Denise Klein, Montreal Neurological Institute
Jen-Kai Chen, Montreal Neurological Institute
Fred Genesee, McGill University

Internationally adopted (IA) children discontinue their birth language at adoption language onset. To investigate whether neural L1 traces remain we compared: (1) IA children from China adopted by age two who now speak only French 2) bilingual Chinese/French children who began learning French by age two and 3) monolingual French-speaking children. using BOLD fMRI while they discriminated Chinese pseudowords that differed in tone. As expected, bilinguals showed left hemisphere activation to tonal contrasts, particularly in temporal auditory regions, and the inferior frontal area. In contrast, monolinguals showed bilateral temporal activity, stronger in the right, with no left frontal activity. Finally, like monolinguals, IA children showed bilateral temporal activation; however, like bilinguals, left hemisphere activation was stronger. IA children also showed left frontal activation; however, less so than bilinguals. Finally, IA and bilingual children, but not monolinguals, showed basal ganglia activation. This suggests some degree of persistence of early language experience.

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POSTER SESSION I

Syntactic bootstrapping does not equal word learning: What do toddlers think a novel verb means?

Rachel Pulverman, Delaware State University Kailani Capote, Delaware State University Salihah Hughson, Delaware State University Williann Garber, Delaware State University Phontaye Sorrell, Delaware State University

Two-year-olds map the sentence Goofy is blicking Mickey to Goofy spinning Mickey, rather than Goofy and Mickey squatting side-by-side. But what does the verb blicking mean? The sentence provides information about the action structure encoded by the verb, such as whether the action is causal. But verbs do not have meanings like 'doing something (and it doesn't matter what) to someone else.' They refer to particular actions. Spin refers to a turning motion whether it is used in a sentence like Goofy is spinning Mickey or Goofy and Mickey are spinning. This study investigates whether toddlers and adults interpret a novel verb as referring to a particular action (e.g., spinning) or an action with a particular structure (e.g., causal). In a forced choice task, adults interpreted verbs in transitive sentences as causal and verbs in intransitive sentences as referring to particular actions. Comparisons between adults and toddlers will be discussed.

On the computation of the gender feature: Evidence from adjective agreement in L2 French, Spanish, and Hindi

Claire Renaud, Arizona State University

This study examines the debate on the availability of uninterpretable features in second-language acquisition. For some researchers (e.g., Hawkins & Casillas, 2008), uninterpretable features absent from the first-language grammar are not acquirable and learners will thus rely on domain-general feature associations. For another group of researchers (e.g., Lardiere, 2009), although all features are acquirable, the task is quite daunting. To relieve processing costs, less specified forms may be inserted, but clashing forms will be avoided. These proposals are tested with gender agreement on adjectives in English learners of French, Spanish, and Hindi—the gender feature is absent in English. Results from a self-paced movingwindow judgment task suggest that low-proficiency learners have less determinate grammatical judgments than advanced learners and native speakers. In processing, the asymmetries point to the computation of the uninterpretable gender feature by all learner groups in all languages and by the native speakers.

POSTER SESSION I

Comparing language production and comprehension in young bilinguals

Krystal Ribot, Florida Atlantic University Erika Hoff, Florida Atlantic University

This study investigates the developing productive and receptive language skills of 86 Spanish-English bilingual 2½-year-olds (36 boys, 50 girls). Participants' exposure to each language (input) and their language choice during production (output) were measured via caregiver interview. Language skills were assessed using standardized measures. Hierarchical regression analyses revealed a significant linear relation between input and productive language, with no additional variance accounted for by the quadratic function. In contrast, there was a significant quadratic relation between English input and receptive language skill. The results of ANCOVAs, which tested the effect of children's output across different language measures, holding input constant, revealed a significant main effect of output on English language skills. Results across the Spanish measures followed similar patterns. These findings describe patterns of productive and receptive language skill and address competing theories regarding the roles of input and output in the development of comprehension and production in young bilinguals.

POSTER SESSION I

Concurrent learning of multiple structures in an artificial language

Alexa Romberg, Indiana University Jenny Saffran, University of Wisconsin - Madison

Natural languages contain many layers of sequential structure, from the distribution of phonemes within words to the distribution of phrases within utterances. However, most research modeling language acquisition using artificial languages has focused on only one type of distributional structure at a time. In two experiments, we investigated adult learning of an artificial language that contains dependencies between both adjacent and nonadjacent words. We found that learners rapidly acquired both types of regularities and that the strength of the adjacent statistics influenced learning of both adjacent and nonadjacent dependencies. Additionally, though accuracy was similar for both types of structure, participants' knowledge of the deterministic nonadjacent dependencies was more explicit than their knowledge of the probabilistic adjacent dependencies. The results are discussed in the context of current theories of statistical learning and language acquisition.

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Call me! Toddlers' language learning from contingent and interrupted conversations

Sarah Roseberry, University of Washington Jessa Reed, Temple University Kathy Hirsh-Pasek, Temple University Roberta Golinkoff, University of Delaware

Contingent interactions facilitate early language development, yet, the impact of contingent interactions on toddlers' word learning is unknown. In a series of two studies, we examined toddlers' ability to learn novel words from contingent interactions (Study 1), and from interactions in which contingency was interrupted, breaking the natural flow of conversation (Study 2). Study 1 used video chats as a contingent, video-based medium for language learning whereas Study 2 incorporated cell phone conversations as an ecologically valid interruption within mother-child interactions. Results suggest that children learned language better in contingent and in uninterrupted interactions. These studies suggest that maintaining a reciprocal backand-forth flow in social interactions is critical for language learning. Practically, this research points to the utility of new technologies that create contingent social communication and invites evaluation of technologies that disrupt these interactions.

POSTER SESSION I

Comprehension of subject and object relative clauses by heritage language speakers (HLS) and second language learners (L2L) of Spanish

Noelia Sanchez-Walker, University of Illinois - Urbana-Champaign

This study investigates comprehension of subject and object relative clauses (SRC and ORC) by second language learners (L2L) and heritage speakers of Spanish (HS). Spanish SRC and ORC feature one word order that matches English SRC and ORC word order, respectively, and one that does not match it. Thus, manipulating type of relative (subject vs. object), and word order (English-matching vs. non Englishmatching) these questions were addressed: (1) Do Spanish HS and L2L have more difficulties with ORC than with SRC? (2) How does word order affect HS and L2L performance in the aural comprehension of Spanish ORC and SRC? HS and L2L comprehended English-matching SRC and ORC comparably well. HS with two Spanish-speaking parents comprehended English nonmatching SRC and ORC better than HS with one Spanish-speaking parent and better than L2L. Results suggest that L1 transfer, early exposure, and amount and/or quality of early exposure affect comprehension of these clauses.

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POSTER SESSION I

L2 processing of English plural inflection

Yoonsang Song, Georgetown University

This study investigates (1) whether adult Korean learners of English, whose L1 employs a different type of numbermarking system from that of English, acquire sensitivity to English plural-agreement violations, and (2) whether Korean learners are sensitive to structural distance between the plural agreement sources and targets. In a self-paced reading task, 19 native English-speaking controls and 22 Korean advanced learners of English read English sentences testing plural inflection, and their reading times for each word were measured. The structural distance between the plural-agreement sources and targets was manipulated in two structural conditions (the short-distance condition vs. the long-distance condition). The results revealed that the learners were sensitive to English plural-marking. Furthermore, like the natives, the learners' sensitivity to plural inflection was affected by the structural distance. These results suggest that Korean speakers can acquire target-like knowledge of English plural inflection, and that nonnatives construct hierarchical structural representations during online sentence-processing.

Acquiring the non-exact reading of numerical expressions: What semantics says you have to do and what pragmatics allows

Kristen Syrett, Rutgers University - New Brunswick Christopher Kennedy, University of Chicago Julien Musolino, Rutgers University - New Brunswick Stephanie Buco, Rutgers University - New Brunswick Kristen Starcher, Rutgers University - New Brunswick

Numerical sentences can have 'exactly', 'at least', and 'at most' readings. According to neo-Griceans, 'at least n' is basic, and scalar implicature derives upper-bounding for 'exact' and 'at most' readings. Children typically assign 'exact' interpretations to numerical sentences, suggesting that upper-bounding is semantic. Musolino (2004) showed that children accept 'at most' readings in '<' and '=' contexts, but did not test '>' contexts, leaving the source of upper-bounding uncertain. In a modified TVJT (32 preschoolers, 32 adults), Character1 said what Character2 was allowed to ('at most') or had to do ('at least'). Character2 then performed an action. A puppet asked if what Character2 did was ok. Participants robustly accepted 'allowed to' sentences in '=' contexts, and were more likely to accept them in '<', and reject them in '>', contexts. We therefore argue that upper bounding is semantic, appealing to an analysis of numerals as scope-taking degree quantifiers (Kennedy, 2011).

POSTER SESSION I

When good predictions go bad: The role of cognitive control in word learning from syntax

Susan Teubner-Rhodes, University of Maryland - College Park Jeffrey Lidz, University of Maryland - College Park

Young children have both poor cognitive control (CC) and difficulty overriding temporary misinterpretations during language processing. We explored whether CC supports syntax-based word-learning when children have to revise misinterpretations. Using preferential-looking, we tested whether 20-month-olds could use syntax to assign meaning (instrument vs. patient) to novel nouns in sentences containing patient-biased verbs ("She's pushing with the blicket" vs. "She's pushing the blicket"). We also assessed infants' CC using a working memory game. High- and low-CC infants preferred the correct interpretation in "patient" sentences (when verb-bias matched the syntax-based interpretation), but only high-CC infants preferred the correct interpretation in "instrument" sentences (when verb-bias mismatched the syntax-based interpretation). Thus, individual differences in CC in 20-month-olds predict performance on a syntax-driven word-learning task, but only when assigning the correct syntaxbased interpretation requires overriding a conflicting verb-bias. Apparently, young children employ cognitive control to resolve syntactic ambiguity, thereby aiding word learning from syntax.

POSTER SESSION I

Multilingualism and cognitive control: Simon and Flanker task performance in monolingual and multilingual young adult

Virginia Valina, City University of New York - Hunter College April Humphrey, City University of New York - Hunter College

Although lifelong, balanced bilinguals show advantages in certain aspects of cognitive control compared to monolinguals, advantages for young adults have only been inconsistently reported. To address those inconsistencies, we compared different groups of multilinguals to monolinguals on the Simon and flanker tasks. We assessed participants on their proficiency in each of their languages via self-report, and additionally assessed their proficiency in English via a language assessment test and a picture-naming task. Self-report of speaking and listening in English correlated strongly with results of the objective tests. Using self-reports, we categorized participants into a variety of multilingual groups. Regardless of their group, all participants showed a decrement in performance on both the Simon and flanker tasks when responding to incongruent relative to congruent stimuli; there were no ceiling effects. But no group performed better than monolinguals. We can eliminate SES, age, sex, computer exposure, and type of language as confounds.

Notes

Slow mapping: Color word learning as a gradual inductive process

Katie Wagner, University of California - San Diego Karen Dobkins, University of California - San Diego David Barner, University of California - San Diego

Most current accounts of color word acquisition propose that the delay between children's first production of color words and adult-like understanding is due to problems abstracting color as a domain of meaning. Here we present evidence against this hypothesis, and show that, from the time children produce color words in a labeling task they use them to represent color. In Experiment 1, an analysis of early color word errors finds that before acquiring adult-like understanding, children make systematic hypotheses about color word meanings, which are best characterized as overextensions of adult meanings. Using a comprehension task, Experiment 2 finds that these overextensions are due to overly broad color categories, rather than a communicative strategy. These results indicate that the delay between production and adultlike understanding of color words is not due to difficulties abstracting color, but is largely attributable to the problem of determining color boundaries marked by specific languages.

POSTER SESSION 1

Lexical tone in statistical learning

Tianlin Wang, University of Wisconsin - Madison Jenny Saffran, University of Wisconsin - Madison

Although many studies have focused on how adults attend to regularities in speech, little is known about how statistical learning operates in tonal languages. To investigate adults' ability to track regularities in tonal input, three groups of participants were exposed to an artificial language in which syllabic and tonal information provided identical and redundant cues to the boundaries of three trisyllabic 'words'. When tested, Mandarin-English bilinguals and monolingual Chinese adults were significantly more likely to choose these words over part-words (which spanned boundaries), with the bilinguals surpassing the monolinguals. English monolinguals performed at chance, suggesting difficulty in tracking the redundant regularities. The bilinguals' superior performance to both monolingual groups may be due to their extensive familiarity with both tonal cues and multisyllabic English words, and these results suggest that adults' varying degrees of familiarity with tones influence their ability to extract structure in novel tonal input.

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Speaker adaptation in infancy: Is lexical access necessary?

Marieke van Heugten, University of Toronto Elizabeth Johnson, University of Toronto

Between-accent differences in the pronunciation of words have been claimed to hinder infants' word recognition. This study examines whether speaker exposure allows infants to accommodate accents. Using the Headturn Preference Procedure, Canadian-English-learning 15-, 18-, and 22-montholds were presented with lists containing known (e.g., ball) and nonsense words (e.g., bog) in an unfamiliar Australian accent. Although 15-month-olds easily recognize the known words in their own accent, it was not until 22 months of age that infants reliably preferred to listen to known over nonsense words in Australian English, indicating that the ability to recognize accented words in the absence of speaker exposure develops with age. However, after listening to 'The Very Hungry Caterpillar' story recorded by the Australian-accented speaker, even 15-month-olds accommodated the speaker and recognized the Australian-accented words in the test phase. Interestingly, adaptation only occurred when the story was familiar, suggesting that lexical feedback may mediate the adaptation process.

Session B--East Balcony

The poverty of the stimulus has developmental consequences

Anne Fernald, Stanford University Adriana Weisleder, Stanford University Virginia Marchman, Stanford University

New findings on the influence of early language experience on language learning emerge from studies that include a broad range of families varying in SES, and combine fine-grained measures of both English- and Spanish-learning children's efficiency in real-time language processing with analyses of extensive samples of caregivers' speech: (1) Infants show differential gains in processing efficiency and vocabulary: Those who are relatively more efficient in interpreting familiar words are more advanced in later lexical development. (2) SES differences emerge early: By 24 months, there is already a 6-month gap between children from advantaged and disadvantaged families in processing skills critical to language development. (3) Early experience with language really matters: Infants exposed to richer child-directed language learn vocabulary more quickly, and develop processing skill more rapidly. (4) Gains in realtime processing efficiency mediate the effect of child-directed speech on vocabulary: Richer language experience strengthens learning mechanisms that facilitate language growth.

Session C--Conference Auditorium

The meanings of the *wh*-word *shenme* in the L2 Chinese of English and Korean speakers

Wei Chu, University of Hawaii - Manoa Bonnie D. Schwartz, University of Hawaii - Manoa, Radboud University Nijmegen

This study compares the development of wh-existential shenme vis-à-vis wh-interrogative shenme in the L2 Chinese of native English and Korean speakers to investigate the consequence of L1 lexical properties on L2 knowledge. Chinese whexistential words are confined to syntactico-semantic environments denoting non-veridicality (Giannakidou, 1998); Korean wh-existential words are free of these restrictions (Gil & Marsden, 2010); and English wh-words can never function as existentials. Intermediate and advanced L1-English and L1-Korean L2ers as well as Chinese native controls completed a picture-based contextualized multiple-choice task comprising 20 experimental items and 20 fillers. The results show clear L1 transfer effects in three key aspects: (i) incorrect overgeneralization of wh-existential shenme to veridical contexts is much stronger with Korean L2ers than with English L2ers; (ii) English L2ers are more likely than Korean L2ers to interpret shenme solely as interrogative; (iii) Korean L2 groups outperformed English L2 groups in interpreting shenme sentences in non-veridical contexts.

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Talker-independence in word comprehension before 12 months

Elika Bergelson, University of Pennsylvania Daniel Swingley, University of Pennsylvania

This study builds on recent work showing that 6-12 month olds fixate pictures of foods and body parts named by their mother (Bergelson and Swingley 2012), and examines whether infants show adult-like speaker-invariance in interpreting word meanings. Rather than the mothers labeling words for their infants, we had an unfamiliar experimenter do so. Infants (6-12 months) performed above chance, looking more to the named picture. Moreover, this data did not differ statistically from the original mother-speaking results. We discuss the roles of speaker-identity and infant-responsive speaker-timing in word recognition, and infants' general capacity for generalizing over lexically irrelevant dimensions. Before age one, infants' lexical comprehension seems to be appropriately flexible; that is, young infants' ability to understand word meanings does not rely on specific voice characteristics of their most familiar interlocutor.

Notes

Session B--East Balcony

Interpretation of pronouns and reflexives in Russian-speaking children with language impairment (LI)

Natalia Rakhlin, Yale University
Jodi Reich, Yale University
Sergei Kornilov, Moscow State University, University of
Connecticut - Storrs
Elena Grigorenko, Moscow State University, Yale University

We investigated the comprehension of pronouns and reflexives by Russian-speaking children with language impairment (LI) in transitive and Exceptional Case Marking (ECM) sentences. We tested whether LI involves a weakness with morphosyntactic features of pronouns, which should result in disproportionate difficulty with the ECM pronoun condition (Baauw & Cuetos, 2003; Philip & Coopmans, 1996) or a broader weakness with syntactic dependencies associated with syntactic complexity (van der Lely, Jones, & Marshall, 2011) leading to greater difficulty with both pronoun and reflexive ECM conditions. The participants (10 children with LI and 19 controls; M=9.1, SD=1.3) were given a picture-choice task with sentences containing reflexives and pronouns as objects in transitive sentences or as ECM subjects. The children with LI significantly underperformed in the ECM pronoun condition. This supports the account attributing children with LI a weakness in representing or retrieving morphosyntactic features of pronouns, leading them to treat pronouns as non-referential.

Session C--Conference Auditorium

Dative word-order alternations with respect to givenness in adult L2 Korean

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

It is suggested that the Given-before-New Principle holds in adult speech such that given information more likely precedes new information (e.g. Gundel, 1988). Choi's (2009) corpus study on Korean dative constructions provides evidence in support of this principle. Our study investigates whether L1-English adult L2ers of Korean who have knowledge of the Given-before-New Principle in their L1 automatically adhere to it in Interlanguage. Two dative orders-canonical (S-IO-DO-V) vs. scrambled (S-DO-IO-V)—were tested using novel oral contextualized preference tasks. Results show that natives overwhelmingly comply with the Givenbefore-New Principle. L2ers prefer the given-before-new order in the given-recipient condition; in the given-theme condition, however, they prefer the new-before-given order. These intermediate-to-advanced L2ers thus exhibit a strong preference for the canonical order: Canonical order 'wins' over the Given-before-New Principle. Findings are discussed in light of syntactic complexity, frequency (canonical vs. scrambled orders), null arguments, and proficiency.

Impossible to ignore: Phonological inconsistency slows vocabulary learning

Sarah Creel, University of California - San Diego Kristin Muench, Emory University

Though recent work examines how language learners deal with morphosyntactic input inconsistency, few studies explore learning under phonological inconsistency. The predominant picture of phonological acquisition is that young learners encode native-language speech sound distributions, and these distributions—phonemes—then guide lexical acquisition. Yet most children's phonological experiences, even within a language, contain variability due to regional dialect variation, L2 speakers, and casual speech, potentially generating seeminglydifferent phonological realizations of the same word. Do learners merge variant word forms, or store each variant separately? To distinguish between these possibilities, children (ages 3-5) and adults learned words with or without phonological inconsistency. Both children and adults showed increased difficulty when learning phonologically inconsistent words, suggesting they do not merge speech-sound category variability. Data are more consistent with learning separate forms, one per accent, though this appears easier than learning two completely-different words. Ongoing work explores real-world accent variation.

Session B--East Balcony

Comprehension of wh-questions in French and German typically developing children and children with SLI

Anne Roesch, Bangor University Vicky Chondrogianni, Bangor University

German and French preschool children with SLI and their typically developing (TD) age-matched controls were tested on the comprehension of referential and non-referential whquestions to assess the effect of morphological cues and word order in German and in French respectively. While in German argumenthood is designated via the use of case marking, in French argumenthood is denoted via word order. Results showed an effect of referentiality for both languages, with both SLI and TD children performing better on referential than on non-referential questions. In German, there was an effect of morphological cues; wh-questions with morphological marking on the wh-element and the NP elicited higher accuracy than wh-questions with case marking only on the wh-element or the NP in both groups. In French, there was an effect of word order; wh-questions with canonical word order had higher accuracy than wh-questions with non-canonical word order.

Session C--Conference Auditorium

Full access confirmed!: Restrictions on clitic solidarity in L2 Spanish

> Becky Halloran, University of Florida Jason Rothman, University of Florida

This study examines the mental representation of clitic object pronouns in English L2 Spanish speakers of beginning, intermediate and advanced proficiencies. Following insights from Masullo's (2004) analysis, we maintain that knowledge of restrictions on clitic solidarity (when multiple clitics are projected they must stay together in pre or postverbal position) in ECM + infinitive contexts elucidates underlying syntactic representation for clitics since such restrictions derive from universal prohibitions on how Merge/movement can apply. Our findings suggest that the advanced L2 learners only have converged on the Spanish grammar, showing high sensitivity to the restrictions placed on clitic solidarity in ECM constructions coupled with acute knowledge of the language specific distribution of clitics in non-ECM environments. However, all learner groups show sensitivity to the universal restrictions on clitic solidarity application. We will argue that this pattern supports UG-accessibility approaches to adult L2 acquisition.

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The neural correlates of childhood linguistic isolation

Naja Ferjan Ramirez, University of California - San Diego Matt Leonard, University of California - San Diego Eric Halgren, University of California - San Diego Rachel Mayberry, University of California - San Diego

It is widely assumed that much of the trajectory of language acquisition is guided by brain maturation; however direct evidence supporting this hypothesis is lacking because infants almost always experience language from birth. We studied the brain underpinnings of American Sign Language (ASL) in two adolescent homesigners who were first immersed in ASL around age ~14. Using anatomically-constrained magnetoencephalography (aMEG), we find that in these two individuals, processing meaning from signed words mainly activated right superior parietal, anterior occipital, and dorsolateral prefrontal areas. This spatiotemporal activity pattern was significantly different from the left frontotemporal pattern observed in deaf adults who acquired ASL from birth, and in hearing adults who acquired ASL as a second language. These results provide strong evidence that the timing of language experience over human development affects the organization of neural language processing.

Session B--East Balcony

Vowel devoicing in infant-directed Japanese

Andrew Martin, RIKEN Brain Science Institute Akira Utsugi, University of Tsukuba Reiko Mazuka, Duke University, RIKEN Brain Science Institute

Infant-directed speech is often described as a form of hyperspeech, in which phonetic distinctions are exaggerated in order to increase intelligibility. This hypothesis predicts that a phonological rule which hinders intelligibility will be implemented less often in infant-directed speech. We show that, consistent with this prediction, Japanese-speaking mothers implement the rule of high vowel devoicing, which renders vowels harder to perceive, less often when speaking to their infants than when speaking to an adult. For non-high vowels, however, which are not typically targets of the rule, the trend is reversed, with more vowels being devoiced in infantdirected speech. These results suggest that what appears on the surface to be a single phenomenon—vowel devoicing—is actually two distinct processes, and that a single-dimensional hyper- to hypospeech continuum is not sufficient to capture the ways in which speakers modify their speech to infants.

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Session C--Conference Auditorium

The role of verb bias in structural priming: Evidence from children and adults

Michelle Peter, University of Liverpool Ryan Blything, University of Liverpool Caroline Rowland, University of Liverpool Franklin Chang, University of Liverpool

Conceptualising the relationship between verbs and syntactic structure is central to our understanding of language. The current study used a priming paradigm to explore whether children and adults show the same sensitivity to verb syntactic preferences. All age groups demonstrated significant structural priming effects, but only adults showed increased priming when the prime and target shared a verb (the lexical boost). Both children and adults produced more double object datives with DOD-biased verbs (eg. give) than with PD-biased verbs (eg. bring), and priming was stronger when there was a mismatch between the prime verb's bias and its structure (prime surprisal). The results suggest that 3 year olds have already built and established links between syntactic representations and some verbs. However, they also suggest that lexical effects on structural priming are different for children and adults, indicating that children's syntactic representations are more tied to particular verbs than those of adults.

Effects of delayed first-language acquisition on spatial cognitive skills: Evidence from signers of Nicaraguan Sign Language

Amber Martin, Barnard College Ann Senghas, Barnard College Jennie Pyers, Wellesley College

Earlier work shows an advantage for signers in mental rotation. Is this due to experience with devices that involve mentally aligning one's body with others' perspectives? We examine mental rotation of two different objects (human doll; L-shaped block) on two planes of rotation (vertical; horizontal) in 33 deaf Nicaraguan signers whose age at first exposure ranged from 3 to 11, and 36 hearing Nicaraguans. Deaf participants were more accurate and faster than hearing non-signers, with early learners showing higher accuracy than late learners and hearing participants. A regression analysis showed that among deaf adult participants, rotation accuracy decreases with increasing age of sign language acquisition. Overall, performance was better for dolls than blocks, and for horizontal than vertical axes. These results suggest that earlier sign language learning offers an advantage in mental rotation skills. This advantage is not limited to those conditions (human figure, horizontal plane) utilized in comprehending sign language.

Session C--Conference Auditorium

Priming cross-linguistic interference in Spanish-English bilingual children

Lisa Hsin, Johns Hopkins University Géraldine Legendre, Johns Hopkins University Akira Omaki, Johns Hopkins University

The hypothesis that bilingual syntax is shared between both languages generates a surprising prediction: exposure to a construction which is grammatical in only one language (e.g. adjective-noun word order in English) should prime its ungrammatical use in the other language (e.g. Spanish, where the grammatical order is noun-adjective), regardless of language-dominance. Using a novel picture-description task with Spanish-English bilingual preschoolers, we report the first evidence of this 'cross-linguistic interference priming'. While participants' default Spanish noun modification is grammatical, we find that the rate of Spanish productions containing an ungrammatical word order increases significantly when participants comprehend a (grammatical) utterance in English that corresponds to that order, relative to trials in which the English stimulus' Spanish counterpart is not ungrammatical. English-language dominance predicts spontaneous but not primed interference, suggesting the involvement of distinct mechanisms. We discuss implications of these findings for bilingual grammatical architecture during development and in the adult speaker.

Session B--East Balcony

Acoustic correlates of stress in infant- and adult-directed speech

Yuanyuan Wang, Purdue University Alejandrina Cristia, Max Planck Institute for Psycholinguistics Amanda Seidl, Purdue University

Vowels in infant-directed speech (IDS) tend to be longer, higher-pitched, and more dispersed than vowels in adultdirected speech (ADS). This acoustic profile may promote language acquisition by providing clearer instances of linguistic units and may be exaggerated in prosodically prominent positions. We analyzed acoustic characteristics of vowels in bisyllabic trochees in the speech of 20 mothers of 4and 11-month-olds to examine whether acoustic differences between IDS and ADS were particularly marked in salient positions (comparing vowels in strong vs. weak syllables, utterance-medially vs. -finally). While strong vowels differed significantly between IDS and ADS in duration, pitch and vowel dispersion, weak vowels only differed on pitch. However, age was also a factor with strong vowels addressed to 11-month-olds showing more dispersion, indicating an enhancement of segmental information to older infants. Interestingly, we found no interaction with utterance position, suggesting IDS/ADS differences are maintained both utterance-medially and -finally.

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LUNCH SYMPOSIUM

Language delay - Does it matter?

Yonata Levy, Hadassah-Hebrew University

Language acquisition studies typically contrast delay vs. deviance, treating the former as theoretically uninteresting, while considering bizarre errors, atypical productions and a-synchronous development as evidence for the latter. Considering the notions of sensitive periods and experiencedependency and the network properties of cognition, as well as the focus in current neuro-biological research on the three-way interaction among genes, age and environment, developmental delay deserves another look (McGrath's talk). Delays in language acquisition may be due to extrinsic circumstances, such as missing input in the case of international adoptees (Genesee's talk), or intrinsic reasons, such as the case of late talkers (Rescorla's talk) or deaf children (Morgan and Woll's talk). Research examining the long term effects on linguistic and cognitive functions in these populations, brought about by delay in acquisition will be presented. The talks will examine the claim that within developmental context, delay is indicative of deviance that is likely to impact development in significant ways.

LUNCH SYMPOSIUM

Delayed Language Development in Internationally-Adopted Children: Effects and Explanations

Fred Genesee, McGill University
Audrey Delcenserie, McGill University

Internationally-adopted children discontinue acquisition of the birth language upon adoption when they are totally immersed in a "second first language" and, thus, provide an interesting test case for studying the effects of early delayed exposure to language on development in otherwise healthy individuals. This presentation will discuss an 8-year longitudinal study of IA children from China from 4 to 12 years of age. These children generally score in the typical range for monolingual native speakers but significantly lower than carefully matched control groups on many language tests indicating that they often do not achieve the levels of language ability expected of learners raised in comparable environments. They also show consistent and significant lags in verbal memory abilities, especially phonological short term memory. The results will be discussed in terms of the possible role of delayed language exposure along with discontinuation of the birth language on verbal memory and language development.

LUNCH SYMPOSIUM

Neurogenetic perspectives on language delay

Lauren McGrath, MGH, Harvard University

One of the foundational principles of complex human genetics is that genetic and environmental factors interact to create individual differences in behavior. However, a neglected aspect of this equation is the importance of age in these gene x environment interactions. This notion of age x gene x environment interactions is consistent with emerging evidence from animal models regarding the importance of maturational stages for defining sensitive periods. This talk will discuss some of the age-dependent neurogenetic mechanisms that constrain plasticity in model organisms and extrapolate these mechanisms to human language acquisition based on evidence from twin studies suggesting developmentally dynamic genetic influences. Here, we speculate that the errant timing of language delay creates a mismatch between the developmental task and the neurobiological substrate with potentially enduring behavioral consequences.

LUNCH SYMPOSIUM

Language delay matters for deaf people's linguistic and cognitive abilities

Gary Morgan, Deafness Cognition and Language Research
Centre UCL
Bencie Woll, Deafness Cognition and Language Research
Centre UCL

90% of deaf children are born to parents who have no knowledge or experience of deafness. Language delays and incomplete acquisition of an L1 are common despite early cochlear implants. In study 1, we compared understanding of false belief using preferential looking in 1-2 year olds, either hearing or deaf, with hearing parents. Hearing children, but not deaf children, understand a false belief. Study 2 found hearing mothers of deaf infants used very little mental state language in conversations. The issue of ToM recovery is discussed. Study 3 examines long term linguistic and cognitive effects of incomplete L1 acquisition in childhood. M had no exposure to an accessible language until his early 20s. Despite 25 years subsequent sign language and lifelong use of gesture, he failed to develop BSL phonology, had a limited BSL lexicon and was unable to process BSL morphology or syntax. Despite normal performance IQ he had severe difficulties with temporal ordering of information and ToM tasks.

SATURDAY 12:15 PM

LUNCH SYMPOSIUM	Notes
Late Talkers: Does Language Delay Matter, and If So, How?	
Leslie Rescorla, Bryn Mawr College	
Longitudinal studies of groups of late talkers indicate that : (a) they consistently obtain significantly lower scores than groups with typical language histories on most language measures, even when they perform in the average range; (b) late talkers with receptive as well as expressive delays have higher rates of persistent delay, but even most of these children end up scoring in the average range on expressive language measures by elementary school; (c) vocabulary delays resolve more quickly and completely than morphosyntax delays, with the latter being persistent for some children into elementary school; (d) a persistent deficit in verbal working memory is characteristic of many late talkers. These findings suggest that late talking reflects a mild but persistent weakness in the language endowment system.	
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Putting milk onto cows: A put-on bias in early denominal verb interpretation

Mahesh Srinivasan, University of California - San Diego David Barner, University of California - San Diego

In English, nouns are re-used as verbs in conflicting ways: some denote transfer toward goals (e.g., I salted the food), while others denote transfer from sources (e.g., I milked the cow). Three experiments explored how children learn such verbs. Experiments 1 and 2 showed that children make significantly more errors when interpreting attested take-off verbs than puton verbs: e.g., thinking that "milk a cow" means "put milk onto a cow." Strikingly, children misinterpret take-off constructions despite knowing the origins of relevant substances—e.g., that milk comes from a cow. Experiment 3 showed that children's put-on bias constrains their interpretation of novel verbs. Our results provide novel evidence of a goal bias in language acquisition: rather than waiting for evidence of a verb's meaning, children assume it denotes transfer toward a goal. Children continue to rely on this default even as they gain world knowledge that restricts interpretation for adults.

Session B--East Balcony

Input in the lab causes 15-month-olds to learn an English non-adjacent dependency

Jeffrey Lidz, University of Maryland - College Park Akira Omaki, Johns Hopkins University Naho Orita, University of Maryland - College Park

Non-adjacent dependencies between two constituents in a sentence are ubiquitous, but surprisingly little is known about how children acquire such dependencies in natural language. Artificial language learning studies with infants have found that in order to learn a nonadjacent dependency, infants require exposure to input with 18 to 24 variations in the variable part of the dependency. The present study replicates the finding that 15-month-olds do not yet know the is-V-ing dependency [3], and goes on to show that they can learn this dependency in the lab, generalizing across verbs. This result suggests that results from artificial language learning can be informative about the role of input in natural language acquisition.

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Session C--Conference Auditorium

Can you curl up with a good Agatha Christie in your second language?

Roumyana Slabakova, University of Iowa Jennifer Cabrelli Amaro, University of Florida Sang Kyun Kang, University of Iowa

Metonymy is the mental and linguistic process where a word denoting one thing or person shifts in meaning to represent a related thing or person. This process is a universal lexicalsemantic computation. However, comprehending a shifted sense takes processing resources because it involves further computation beyond computing the literal meaning, so metonymy could present a challenge to second language learners. This experimental study looks at acceptability of regular metonymy (e.g., I like to curl up with a good Agatha Christie) as well as productive, novel metonymy (e.g., The ham sandwich is a lousy tipper) by native speakers of English, Spanish and Korean in their native languages and in L2 English. Results of two interpretation tests indicate English natives readily accept regular metonymy but ratings of novel metonymy are significantly lower. Learner interpretations indicate that acquisition of this productive lexical process is not impossible, but metonymy certainly represents a processing challenge.

Learning manner and path verbs from the serial verb construction in Korean

Youngon Choi, Chung-Ang University Sudha Arunachalam, Boston University

In Korean, motion events are often described using Serial Verb Constructions (SVCs), which include both a manner and path verb in one sentence. How can the learner discover which verb labels manner and which path? The relative position of the verbs may be a useful cue: the manner verb consistently appears first, and the path verb second. We asked if Korean-speaking adults and 5- to 6-year-old children infer whether a verb lexicalizes manner or path from its position in an SVC. Participants heard sentences incorporating a novel verb in either first or second position, and had to use this information to map the verb to a manner or path event. While only adults, not children, successfully pointed to the predicted event, eye-gaze data revealed that children, too, used the verb's position to identify its referent. These data indicate that a verb's sentential position functions as a cue to its meaning.

Session B--East Balcony

Learning nonadjacent dependencies is easy when you make it realistically complex

Jon Willits, University of Wisconsin - Madison

We present a connectionist Simple Recurrent Network (SRN) model of nonadjacent dependency learning, simulating three phenomena: learning distance-invariant representations of nonadjacent dependencies; differential learning of nonadjacent dependencies as a function of the variability in the material that intervenes between nonadjacently-dependent items (e.g. Gomez, 2002); facilitated learning of nonadjacent dependencies in the presence of correlated perceptual or semantic cues (e.g. Newport & Aslin, 2004; Willits, Lany, & Saffran, in review). These simulations show that a single model captures the qualitative patterns of human performance in a variety of situations. That a single mechanism can account for all three phenomena (all of which represent critical aspects of language's nature) suggests a relationship between artificial grammar learning experiments and basic principles of language learning. One important conclusion is that the SRN, like people, significantly benefits from more realistic learning environments, incorporating cues like meaning and variability that children have when learning natural languages.

Session C--Conference Auditorium

Representation of multimorphemic words in the mental lexicon: Implications for second language acquisition of morphology

Ayşe Gürel, Bogazici University Serkan Uygun, Yeditepe University

Models of lexical access range from morphological decomposition to full-listing. While the decompositional model assumes that a morphologically complex form is parsed into constituent morphemes prior to lexical access, the full-listing model argues that no morphological parsing is involved in word recognition. Some L2 studies suggest that unlike native speakers, learners do not decompose regularly inflected forms due to problems in online grammatical computation (Silva & Clahsen, 2008). Therefore they depend on a lexical memory system and do full-listing. The present study tests these proposals in native speakers and L2 learners of Turkish via a simple lexical decision task with items including monomorphemic and multimorphemic words. Results reveal a significant difference between groups on all categories. L2 learners are slower than native speakers, suggesting that L2 learners do decomposition rather than full-listing. This might account for variability in the use of L2 morphology, a commonly observed phenomenon in L2 acquisition.

Notes

Quantity and quality of input influences verb comprehension – but in different ways

Haruka Konishi, University of Delaware Carolyn Kosko, University of Delaware Roberta Golinkoff, University of Delaware Kathy Hirsh-Pasek, Temple University

Little research has examined how quantity and quality of parental verb input influences children's verb comprehension. This study investigates the effect of quality of verb input on children's verb comprehension. Toddlers (27 - 33 months; N=24) who had participated in a study between 13- to 15-months were tested. Children's vocabulary scores were collected via the MCDI. Children also participated in a verb comprehension test and parents read a wordless picture-book to their children at Time 2. A multiple-regression determined the factors in maternal input that predict children's verb-test scores. Verb types (25%) and frames (32%) explained 57% of the variance in verb-test scores. Even when controlling for MCDI scores, verb types and frames explained 44% of the variance in children's verb-test scores, indicating that verb variety predicts to verb comprehension. As verbs take different meanings and structures, variety allows children to abstract a verb's range of meaning and syntactic uses.

Session B--East Balcony

A predictive and unbiased assessment of narrative language in low-income Hispanic preschoolers

Peter de Villiers, Smith College Lillian Masek, Smith College

This longitudinal study investigates the contributions of phonological awareness and narrative language in preschoolers with varying degrees of English-Spanish bilingualism to the children's reading development in English at the end of first grade. In 115 children, six features of "literate language" in narratives were scored in English and/or Spanish and scaled for syntactic complexity: reference specification; causal conjunctions and clauses; temporal adverbs and clauses; and desire, cognition and communication expressions. These features create a cohesive "text" of the story connecting events and relating characters. Bilingual literate language scores from the end of preschool significantly predicted English Passage Comprehension scores but not Letter and Word Identification at first grade. Preschool phonological awareness predicted later Letter and Word Identification, but not Passage Comprehension. Results are discussed in the context of contemporary theories of reading that highlight the different roles of "coderelated" processes and oral language skills in early reading.

Notes

Session C--Conference Auditorium

Pupillometry demonstrates 6-month-olds' representation of phonetic segments

Jean-Remy Hochmann, Harvard University

Describing young infants' representations of speech is crucial to our understanding of language acqusition. In particular, it is unclear whether infants represent sub-syllabic units. Two- to four-month-olds habituated to a series of syllables sharing the same initial consonant (i.e., bi, bo, ba, bør) dishabituate to a novel syllable with the same consonant (bu), as much as to a novel syllable with a different consonant (i.e., du; Bertoncini et al., 1988; Eimas, 1999). These results suggest that very young infants do not rely on a segmental representation of speech. Using pupillometry, we ask whether 6-month-olds represent phonetic segments. First, we show that, in an oddball paradigm, infants' pupil diameters increase for the deviant stimulus. Second, we show that 6-month-olds form a category of syllables sharing an initial consonant thus perceiving the same onset consonant in a variety of vowel contexts. These results suggest that infants represent phonetic segments.

Using 'overlap' as a measure of young children's syntactic knowledge

Hao Wang, University of Southern California Toben Mintz, University of Southern California

Recent corpus studies assessed young children's knowledge of the determiner category by examining overlap in contexts in which different determiners occurred. Children with the category were expected to use multiple determiners with a noun thus show similar overlap as adults. Because overlap correlates with sample size, we propose a new probabilistic method that computes expected overlap of a sample that takes the actual nouns into account. Moreover, this study provides a more finegrained view of the developmental pattern of determiner usage by comparing English- and German-learning two-year-olds' productivity to their mothers', month-by-month. The results show that children's actual overlap deviates from expected overlap to the same degree as their mothers and suggest that two-year-olds use determiners in the same way as adults do. Using deviation from expected values generated by our formulae, as opposed to raw overlap, could provide a baseline for evaluating children's overlap in a more meaningful way.

Session B--East Balcony

Orthographic transfer in highly proficient second language learners: Evidence from repetition blindness

Hui-wen Cheng, University of Utah Catherine Caldwell-Harris, Boston University

It is known that first language (L1) reading experiences influence second language (L2) reading (i.e., orthographic transfer). However, it remains unclear what components of the reading process are transferable (Koda, 2008), and whether orthographic transfer is specific to beginning L2 learners. To address these research questions, advanced English learners whose native language was either Spanish or Chinese performed a repetition blindness (RB) naming task. The results demonstrated orthographic transfer: phonological RB was stronger in the Spanish group, whereas semantic RB was stronger in the Chinese group. This finding has three important implications. Firstly, linguistic activation patterns can be transferred from L1 to L2 reading. Secondly, not only phonological processing but also semantic processing is transferrable. Thirdly, the influence of L1 orthography on the patterns of semantic and phonological activation is deep and long lasting, because these L1 transfer effects were found in advanced L2 learners.

Session C--Conference Auditorium

Perceptual narrowing in the second year: The case of pitch contour

Jessica Hay, University of Tennessee - Knoxville Tianlin Wang, University of Wisconsin - Madison Jenny Saffran, University of Wisconsin - Madison

During their second year of life, infants typically show improvement in object-label association tasks, particularly if the labels conform to native language phonology. In the current set of studies we examine the role of linguistic experience on infants' ability to use non-native pitch contours contrastively in a word learning task. Using the Switch paradigm, 14- and 19-month-old English-learning infants were presented with two nonsense words (rising /ku/ and falling /ku/) paired with two novel objects. Only 14-month-olds looked significantly longer to Switch than to Same trials (p<.05), successfully mapping the objects with pitch contour labels; 19-month-olds failed to map tonal minimal pair labels to novel objects (p=.27). These results suggest that as their native-language knowledge increases, English-learning infants show a decreased sensitivity to pitch contour as a contrastive cue to word meaning. This study presents one of the first demonstrations of perceptual narrowing of pitch contours during early object-label association.

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SATURDAY 5:45 PM

PLENARY ADDRESS

Human language development: Using brain measures to advance theory

Patricia Kuhl University of Washington

The tools of modern neuroscience are increasingly being used to study language development in children. In this talk I will show how the use of magnetoencephalography (MEG), event related potentials (ERPs), magnetic resonance imaging (MRI), and diffusion tensor imaging (DTI) are being used in my laboratory to test theories of language learning and development at the phonetic level. I will describe a model of the earliest phases of language acquisition that addresses the initial state as well as the role of cultural input in the acquisition of speech. The model proposes that in early language learning infants' statistical learning and computational skills are 'gated' by the social brain. The model is being tested using both brain and behavioral data: by examining brain and behavioral development in bilingual infants who are simultaneously exposed to two languages, by testing potential biomarkers for early identification of autism, and by examining functional brain activity while infants listen to language in social vs. nonsocial settings. Language provides a good model for combining brain and behavior to illuminate child development.

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The acquisition of ergativity among children learning Northern Quebec Inuktitut: Implications for language change

Shanley Allen, University of Kaiserslautern

Inuktitut is described in grammars as having an ergative case marking system where transitive subjects (henceforth A) take ergative case while intransitive subjects (S) and transitive objects (O) both take absolutive case (Dorais, 1988). In recent work based on elicitation data, Johns (2001, 2006) claims that accusative case-marking is replacing ergative case-marking as the default for transitive clauses in some dialects of Inuktitut. We explore this claim in naturalistic corpus data from both children and adults. Data comprise "frog story" narratives from nine native speakers of Inuktitut – three each at ages 9, 15, and adult (Allen, Pesco & Crago, 2005) – and naturalistic spontaneous speech data from four monolingual Inuktitutspeaking children aged 2;0 to 3;6 and their caregivers (Allen, 1996). Ergative structures were rare across all data at all ages, particularly for clauses with third person subjects. Accusative structures, passives, and noun incorporation structures were commonly used in their place. Thus, Johns's claim is substantiated in naturalistic data as well as in data from children.

POSTER SESSION II

Phonological awareness and reading in monolingual Arabic speaking and bilingual Arabic-English speaking Kuwaiti children

Nailah AlSulaihim, University of Reading Theodoros Marinis, University of Reading

Arabic is acquired in a linguistic context of diglossia, in which a colloquial spoken Arabic dialect co-exists with Modern Standard Arabic (MSA), which is a tool for education (reading and writing). The current study addresses the relationship between phonological awareness (PA) and literacy skills in monolingual and bilingual Kuwaiti children. Sixty Kuwaiti children (30 monolinguals; 30 bilinguals) completed PA tasks in the Kuwaiti dialect (L1), as well as PA tasks, single word reading tasks, and a receptive vocabulary test in MSA (L2). Bilingual children also completed English PA and reading tasks (L3). Between group comparisons show that bilingual children have significantly higher scores on most PA skills in MSA and the Kuwaiti dialect. Bilingual children also perform better in letter recognition and reading in MSA. A cross-linguistic relationship was also found for the bilingual children whereby PA abilities in Kuwaiti and MSA were highly correlated with reading skills in English.

POSTER SESSION II

Does bilingualism confer an advantage for pragmatic abilities?

Kyriakos Antoniou, University of Cambridge Napoleon Katsos, University of Cambridge Kleanthes Grohmann, University of Cyprus Maria Cambanaros, University of Cyprus Stella Vorka, University of Cyprus

Experimental evidence suggests that bilingualism leads to an advantage in children's executive control (EC), Theory of Mind (TOM) and pragmatic abilities (Bialystok 2009; Goetz 2003; Siegaletal. 2007; 2009; 2010; Quin Yow & Markman 2011). In this study we aimed to investigate (1) whether bilingualism confers an advantage in children's ability to understand implicatures and (2) whether a potential bilingual advantage in this ability is mediated by some aspect of EC or TOM. Overall, while the widely reported advantages for EC were indeed replicated in our sample, there was no robust evidence of an advantage in pragmatic language when using a task that (a) unambiguously tests for pragmatic ability (rather than world knowledge), and (b) studies implicature comprehension rather than mere detection of a violation of a Gricean maxim. Moreover, no link emerged between EC or TOM and pragmatic competence.

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Verb learning in non-social contexts

Sudha Arunachalam, Boston University Leah Sheline, Boston University

Acquiring word meanings is often described as a social process. Here we ask whether social context is required to trigger toddlers' abilities to acquire meaning, or whether in some situations, toddlers can learn at least some aspects of meaning in non-social contexts. We focus on verbs because linguistic context, in addition to social context, is a powerful cue for verb acquisition. Toddlers heard novel verbs in sentences, which occurred in adult-directed speech and played ambiently from a speaker while the toddler engaged in an unrelated activity. The verbs occurred in either transitive or intransitive sentences, and toddlers were tested on their abilities to map them to causative or non-causative events. Toddlers succeeded, indicating that impoverished social contexts are sufficient for acquiring some aspects of meaning, and providing insight into how toddlers can learn verbs in overhearing contexts in which no visual referent, discourse context, or child-directed conversation is available.

POSTER SESSION II

Consonantal specificity of name recognition in French- and English-learning 5-month-olds

Camillia Bouchon, CNRS, University of Paris Descartes Claire delle Luche, Plymouth University Caroline Floccia, Plymouth University Thierry Nazzi, CNRS, University of Paris Descartes

This study investigates phonetic specificity in familiar words at 5 months, using the Headturn Preference Procedure. Thirty French- and 30 English-learning infants heard their name and a one-feature phonetic mispronunciation of their name on the word-initial consonant (e.g. Mark/Nark). An ANOVA on orientation times (OT) with the factors pronunciation (Name vs. Misp), language (French vs. English) and order (Name first vs. Misp first) revealed no pronunciation effect (p = .17)but a significant pronunciation x order interaction (p = .01), corresponding to longer OTs towards the name only in the name-first group (planned comparison p = .01). This confirms name recognition at 5 months in English (Mandel et al., 1995) and extends it to French. The order effect suggests that the present results are the product of two interacting processes: phonetic difference detection (leading to a preference for the correct pronunciation) versus lexical activation (the one-feature mispronunciation being also activated).

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POSTER SESSION II

Pragmatic inference and part-whole language in children's early quantification of objects

Eleanor Chestnut, University of California - San Diego Mahesh Srinivasan, University of California - San Diego David Barner, University of California - San Diego

Four experiments provide developmental evidence that count nouns like fork denote both whole objects and their arbitrary parts. To restrict quantification to whole objects, nouns are enriched pragmatically, via contrast with part descriptions. Experiment 1 replicated findings that children count pieces of broken objects as whole objects (e.g., two pieces of fork as "two forks"). Experiment 2 showed, however, that children prefer measure phrases ("two pieces of fork") when they are explicitly presented as alternatives. Experiment 3 found that children were better at excluding pieces from their counts when measure phrases were primed first, making them accessible as alternatives to whole object labels. Finally, Experiment 4 taught children names for novel objects, and found that they exclude parts that have unique labels. These results suggest that nominal concepts do not provide sufficient criteria to restrict quantification to whole objects. Units of quantification are identified, in part, via pragmatic enrichment.

Production of definite articles in English-speaking sequential bilingual children and children with SLI

Vicky Chondrogianni, Bangor University Theodoros Marinis, University of Reading

The present study examines the effect of semantic factors in article production in monolingual (L1) English-speaking children with SLI and typically developing (TD) Englishspeaking L2 children. L1 children with SLI, L2-TD agematched children, L1-TD age-matched children and younger L1-TD controls participated in a task examining definite article production in an anaphoric and in a bridging context (Schafer & deVilliers, 2000). The anaphoric use of articles requires tracking discourse reference and the interplay between indefinite and definite article use; the bridging use of articles is established via world knowledge mapping (Coopmans & Avrutin, 2000). Results showed that the children with SLI and the L2-TD children were influenced by the same semantic factors as the L1-TD children. Additionally, the children with SLI made more substitution errors than the L2 children, who made more omission errors. These results suggest that error profiles can help us differentiate between children with SLI and L2-TD children.

POSTER SESSION II

Acquiring syntactic and referential properties of null subjects in a second language

Laura Dominguez, University of Southampton Maria Veale, University of Southampton

Spanish null subjects (NS) can be used in [+topic shift] contexts if the referent is salient enough (Lubbers Quesada & Blackwell 2009; Liceras et al. 2010) suggesting that both null and overt subjects (OS) have the same syntactic and pragmatic complexity. This challenges the accepted view that NS are easy to acquire because they are referentially simple and tend to refer to the subject in [Spec, IP] position, whereas OS are persistently difficult because they can be used in both [+/-topic shift] contexts and can refer to both a subject and an object antecedent. Sixty (beginner, intermediate and advanced) L1English-L2Spanish speakers completed one production and two comprehension tasks in order to test their syntactic knowledge and use of Spanish subjects. Advanced learners still allow pro to corefer with an object more often than the controls and overuse NS in both [+/-topic shift] contexts. As predicted, these results challenge the view that NS are automatically acquired whereas OS are intrinsically difficult.

POSTER SESSION II

Morphological decomposition in child German: New evidence from cross-modal priming

Elisabeth Fleischhauer, Potsdam Research Institute for Multilingualism, University of Potsdam Harald Clahsen, Potsdam Research Institute for Multilingualism, University of Potsdam

The current study investigates processes involved in children's recognition of regularly and irregularly inflected words using a cross-modal priming task. 82 German children (age range: 8;2-10;8) and 72 German adults, listened to prime words prior to reading out aloud as quickly and as accurately as possible visual target words that were identical, morphologically related, or unrelated to the primes. We tested -t participles and -n participles with and without stem changes. Response accuracies and naming latencies were measured. Although results showed significantly lower error rates for adults (0.5%) than for children (3.3%), children's naming latencies were overall slower but showed the same regular/irregular priming contrast as adults. Regular -t participles yielded a full stem-priming effect, whereas irregular -n participles yielded reduced stem-priming effects, irrespective of stem allomorphy. We propose a dualmechanism account for these results and conclude that children's processing mechanisms are adult-like in the age range tested.

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On the adjectival interpretation of passives: an experimental result

Anna Gavarró, Universitat Autònoma de Barcelona Xavier Parramon, Universitat Autònoma de Barcelona

The construal of passive sentences as verbal or as adjectival has been a longstanding issue in language acquisition research. Here we present the first experimental results that bear directly on that issue, based on Catalan. Unlike their English counterparts, Catalan short passives are not ambiguous. In Experiment 1, we tested passives with 162 children 3 to 6. The results indicate good performance with actives, good performance on passives by 6-year-olds, and poor performance for long passives for 3-, 4- and 5-year olds; with short passives there is with age an increasing number of correct responses. In Experiment 2 we compared the comprehension of short passive sentences and adjectival sentences by 80 children 3 to 6. The adjectival/resultative interpretation of the short passive was overwhelmingly preferred over the passive interpretation, while resultatives were understood above chance by all age groups. We interpret this finding as direct empirical evidence for the adjectival interpretation of passives.

POSTER SESSION II

Children's comprehension of number inflections in German

Sarah Girlich, Max Planck Institute for Evolutionary
Anthropology

Elena Lieven, University of Manchester, Max Planck Institute for Evolutionary Anthropology

Studies suggest that German children between 2;0 and 3;0 productively use verb inflections but comprehension in experimental studies is not till 4;0. We tested the comprehension of singular-plural contrasts in German noun and verb inflections. 24 children were tested in each of two age groups of 2;6 and 3;0. In a picture-pointing task, children had to point to one of two pictures according to the number information on the noun. For verbs, prompts (Show me how she/they paint/paints) were used to ask children to act out an action with (an) object/s. Since, in German, 3rd person singular feminine and 3rd person plural personal pronouns are homophones ("sie"), the only way to solve the initial ambiguity is by processing the verb inflection. The results show that the children aged 3;0 comprehended singular and plural in nouns and the singular form in verbs. We discuss the results in terms of comprehension-production asymmetry.

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POSTER SESSION II

Knowledge of translation equivalents in the lexicons of bilingual preschoolers depends on word type

Meghan Goldman, University of California, Irvine

This study compared the consistency of bilingual preschoolers' knowledge of number words across their two languages to knowledge of color words and common nouns. One theory of number word learning, known as conceptual-role bootstrapping, posits that the phonological forms are learned as placeholders long before their cardinal meanings (Carey, 2009). This suggests that when a child eventually constructs the concept of three, it may also be applied to the third word in any other counting list the child knows. Mandarin-English and Spanish-English bilinguals (aged 2-4 years) were asked to give a specific number of items, a specific color, or a specific animal or vehicle (for common nouns). Children were tested once in each language on all word types. Results indicated that bilinguals' knowledge of number words was more consistent across languages than knowledge of color words and common nouns, supporting Carey's proposal that number word learning is number concept creation.

Early word learning is influenced by relative phonotactic probability

Nayeli Gonzalez-Gomez, University of Paris V Silvana Poltrock, University of Paris V Thierry Nazzi, CNRS, University of Paris Descartes

The current study explores whether (and if, when) the relative phonotactic probability of a sound sequence in the native language has an impact on infants' word learning. We exploit the fact that Labial-Coronal (LC) words are more frequent than Coronal-Labial (CL) words in French, and that 10-monthold French-learning infants prefer LC over CL sequences, to explore the possibility that LC structures might be learned more easily and thus at an earlier age than CL structures. Eye movements of French-learning 14-and-16-month-olds were recorded while they watched animated cartoons in a word learning task. Analyses on the proportion of target looking revealed that while 14-month-olds only learned LC words, 16-month-olds learned both LC and CL words. The present results provide evidence that infants' knowledge of native language phonotactic regularities influences word learning: Words with a more frequent phonotactic structure are acquired at an earlier age than those with a less frequent structure.

POSTER SESSION II

Vocabulary development in a bimodal bilingual child

Corina Goodwin, University of Connecticut - Storrs

Researchers have found translation equivalents (TEs) in bilingual children's early vocabularies (e.g., Pearson et al., 1995), despite Volterra & Taeschner's (1978) claim that bilingual children initially learn only one word per concept. Researchers have also predicted delayed language development in bilingual children. This study addressed these issues by examining a dense sample of spontaneous productions by Ben, a hearing child of deaf parents acquiring American Sign Language (ASL) and English, from ages 1;05-2;06. At age 1;05, TEs already made up 23% of Ben's vocabulary. Furthermore, he reached two milestones (first 50 words and two-word combinations) near the monolingual mean age and his combined vocabulary size was within the expected monolingual range. Moreover, the Expressive Vocabulary Test (Williams, 1997), administered at age 6;00, estimated Ben's vocabulary to be equivalent to that of a child aged 7;10. This supports the view that bilinguals can separate their languages and are not necessarily delayed.

POSTER SESSION II

Constraints on non-adjacent dependency-learning: Distance matters

Ileana Grama, Utrecht Institute of Linguistics, Utrecht University

Frank Wijnen, Utrecht Institute of Linguistics, Utrecht University

Annemarie Kerkhoff, Utrecht Institute of Linguistics, Utrecht University

Artificial grammar learning (AGL) studies have shown that infants and adults detect correspondences between non-adjacent elements in nonce strings (aXb), when the elements are found on the edges of (a...b), rather than embedded within (...a...b...) a string. This learning mechanism has been claimed to underlie L1 acquisition of morpho-syntactic dependencies: at 18 months English infants can detect the BE ING paradigm in texts, only if BE and ING are 3 syllables apart or less. In this AGL study with adults we show that a_b dependencies can be detected in complex strings even where they are not in edge position (XaYb), and that, like in natural language, this sensitivity breaks down with increased distance between dependent elements (aXYb). We suggest that computational limitations on dependency-learning in AGL are similar to those found in natural languages, and that, therefore, AGL should be considered a valid tool for investigating mechanisms for language acquisition.

The extended optional infinitive stage in child Spanish SLI

John Grinstead, Ohio State University Paij Lintz, Ohio State University Juliana De la Mora, West Virginia University Myriam Cantú-Sánchez, Universitat Autònoma de Barcelona Blanca Flores, Centro Nacional de Rehabilitación

The existence of an Optional Infinitive Stage in child Spanish has been denied in some prominent developmental linguistic studies, while other authors have concluded that such a stage does exist in child Spanish. A parallel debate, meanwhile, has taken shape in the literature on verb finiteness in Spanish-speaking children with SLI. Some authors conclude that evidence for an Extended Optional Infinitive (EOI) Stage does not exist, while other studies have argued that such evidence does exist. In contrast with previous work that argues for an EOI stage in child Spanish, which have used grammaticality judgment and elicited production data, we find evidence of an EOI stage, using a novel corpus of spontaneous production data, produced by five year-old Spanish-speaking children with SLI and age controls. Consequences for theoretical accounts of the Optional Infinitive and Extended Optional Infinitive Accounts are discussed.

POSTER SESSION II

ERPs hint at adult-like perception of prosodic boundary cues in six-month-old infants

Julia Holzgrefe, University of Potsdam Caroline Schröder, University of Potsdam Barbara Höhle, University of Potsdam Isabell Wartenburger, University of Potsdam

Infants' early sensitivity to prosodic boundary markers was investigated in an ERP study with German-learning infants, testing the impact of two frequently occurring cues, namely pitch change and final lengthening, independently of pause detection. We presented six-month-old infants with short auditory stimuli from three conditions: lists of three coordinated names either contained no prosodic boundary cues (A), an inserted pitch rise (B), or a combination of both inserted pitch rise and final lengthening (C) at the critical boundary position. In response to condition (C), a positive deflection was observed in the ERP data that could not be found for condition (B), which instead did not differ from the baseline condition (A). This result pattern mirrors ERP effects found in adults, where a so-called closure positive shift (CPS), reflecting the perception of a major prosodic boundary, was also found for condition (C), but not for the sole pitch cue (B).

Notes

POSTER SESSION II

The emergence of structural properties in infant and toddler phonological networks

Tamara Hudon, University of Ottawa Christopher Fennell, University of Ottawa

Many real-world networks such as social networks and the web have been shown to contain non-random structural properties that influence the flow of information. Using graph-theoretic methods, language researchers have examined the structure of the mental lexicon in terms of lexical connections based on phonological similarity. Previous research suggested that the structural properties of static phonological networks in adults and children facilitate efficient information processing. Until now, however, no work had examined phonological networks developmentally, leaving the question of when these structural properties emerge unanswered. Here, phonological networks of similar sounding words commonly known to infants and toddlers were graphed several times between the ages of 9 and 30 months to capture network development. The resulting graphs demonstrate a small-world structure, assortative mixing and modules predominantly organized by onset and rime. Potential implications for the emergence of phonological awareness are discussed.

Poor performance on scrambled Korean OSV sentences by Korean heritage children: Performance, not competence

Kitaek Kim, University of Hawaii - Manoa William O'Grady, University of Hawaii - Manoa Kamil Deen, University of Hawaii - Manoa

Korean allows scrambled word order due to case markers. Korean monolingual children correctly interpret scrambled sentences at age 4yrs, but Korean heritage children in the U.S. (henceforth KHC) exhibit difficulty even at 12yrs (Song, O'Grady, Cho, & Lee, 1997). We report on a series of picture-selection-tasks and a picture-description-task (participants: 34 KHC, 8yrs–14yrs; 23 monolingual Korean adolescent controls, 10yrs–11yrs) showing that in a baseline scrambled condition, KHC do poorly, but when a context that supports a scrambled reading is included, or when the case markers are made prosodically prominent, KHC do significantly better, indicating that failure to comprehend scrambled sentences is not necessarily a deficit of knowledge, but may be a performance related.

POSTER SESSION II

Sentence revision and executive functions in French-speaking children and adults: Evidence from wh-questions with filled-gaps

Romy Lassotta, University of Geneva Akira Omaki, Johns Hopkins University Daniele Panizza, University of Geneva, Fondazione Marica De Vincenzi, ONLUS, Italy Sandra Villata, University of Geneva Julie Franck, University of Geneva

Previous research on garden-path recovery showed that children sometimes fail to revise initial parsing commitments, possibly because of immature executive functions (EF). We investigate this hypothesis in French-speaking children (mean=6;8yrs) and adults through the combination of (1) a Question-after-Story comprehension task involving complex wh-questions, ambiguous or disambiguated with a filled gap ("Where did Aline explain [in the cellar] that she was going to catch butterflies?"), and (2) the Dimensional-Change-Card-Sorting task measuring the inhibitory component of EF. Both children and adults showed a preference to attach the wh- to the main verb in the ambiguous condition, but children revised this initial commitment less than adults in filledgap sentences. Adults with strong EF revised more than those with weak EF, while children with strong EF were slower to access the incorrect interpretation, suggesting possible attempts to revise it. The data support the hypothesis of a tight link between EF and sentence revision.

POSTER SESSION II

Children's discourse integration: evidence from eye tracking

Pim Mak, Utrecht University
Frank Wijnen, Utrecht Institute of Linguistics, Utrecht
University
Lisanne van Weelden, Tilburg University

Data on children's understanding of elliptic anaphors such as bare cardinals are sparse. In a previous study, we found that 3-5-year-olds answered affirmatively in 35% of the cases when presented with (1) in combination with a picture in which two children were sitting on a bucket outside the sandbox.

(1) Three children are playing in a sandbox. Are two sitting on a bucket?

To further explore children's processing of anaphoric bare cardinals we ran a visual world experiment. Six-year olds were shown scenes and heard sentence pairs similar to (1). Over 50% of the children responded affirmatively when shown a picture of two figures on buckets outside the sandbox. These children's gaze patterns were markedly different from those of adult-like responders, suggesting that they did not expect the second sentence to comment on the discourse referent set up in the first sentence. We submit that this may be an effect of processing overload.

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The production of periphrastic passive in Italian preschool children: evidence from an elicited production task and a syntactic priming study

Claudia Manetti, University of Siena

We report three experiments investigating Italian children's competence of passive syntax, under non-priming and syntactic priming conditions. In an elicited production task (Experiment 1), 3- and 4-year-olds selected pronominalised structures (e.g. clitic dislocations) to answer patient-focused questions and produced no passives; whereas adults opted for periphrastic passives. In two syntactic priming studies (Experiments 2 and 3), 3- and 4-year-olds, exposed to actives and passives, showed priming of abstract syntactic structure for actives and passives. Syntactic priming effects were observed with both transparent verbal passive morphology (Exp. 2: passive auxiliary 'to come') and copular passive morphology (Exp. 3: passive auxiliary 'to be'). Results suggest that Italian children preferentially use pronominalised structures to topicalise the patient in spontaneous production. However, the priming effect we found for abstract passive structure suggests that children, around age four, display underlying competence for verbal passives, in line with English findings.

POSTER SESSION II

The development of Dutch who and which questions: Processing number agreement in comprehension

Marijke Metz, University of Groningen Angeliek van Hout, University of Groningen Heather van der Lely, Harvard University

Preschoolers understand subject wh-questions better than object wh-questions. In contrast to the investigated languages, Dutch wh-questions are structurally ambiguous; the preferred reading is a subject question, both for children and adults. Subject-verb agreement can disambiguate Dutch wh-questions. Using such unambiguous questions, we investigated Dutch who and which questions in 5 to 9-year-old children, asking (i) whether number on the verb is correctly used as a cue to interpret wh-questions, (ii) what the influence of wh-phrase type is, and (iii) whether there is an effect of age. There was indeed development in subject-question interpretation, but there was no development for object questions. These were essentially always interpreted as subject questions, even by the 9-year-olds, despite a number mismatch. We argue that number is too weak a processing cue to lead children out of the kindergardenpath triggered by a strong Subject-First bias.

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POSTER SESSION II

Frequency of use and the acquisition of the Turkish causative

Mine Nakipoğlu, Bogazici University Özge Sarıgül, University of Chicago Esra Yıldız, Bogazici University Neslihan Yumrutaş, Bogazici University

Investigation of the path children follow in the acquisition of irregularities in morphology has proven to provide crucial insights into the nature of mental representations for morphemes. Bringing in acquisition data from Turkish causative which exhibits a four-way distribution: $\{-t\}/\{-DIr\}/\{-Ir/-Ar\}/\{-It\}$ this study shows that rules are indispensable, nonetheless they are shaped by frequency of examplars. Evoking causative use through picture-description tasks, we tested 120 children (age -range:2;5-10;6). Our results have shown that i. Productivity in causative use increases with age; ii. Type-frequency shapes the acquisition path of the Turkish causative, i.e., {-DIr}-form is chosen as the default and non-DIr-taking verbs are overregularized with {-DIr}, yielding errors such as *iç-tir for iç-ir 'drink' iii. While DIrtaking verbs are never irregularized, non-DIr-taking forms are irregularized to a lesser extent yielding errors such as *iç-it for iç-ir; iv. Overregularization errors are shaped by frequency of use: low-frequency verbs are overregularized significantly more compared to high-frequency verbs.

The relational shift in word interpretation during childhood: Evidence from noun-noun compounds

Simon Snape, University of Birmingham Andrea Krott, University of Birmingham

Initial word interpretations show a developmental focus shift from static non-relational to dynamic relational features. In previous research non-relational aspects were always static and relational aspects dynamic. It is therefore unclear whether the shift is from non-relational to relational aspects of possible word referents or from static to dynamic aspects. This study disentangled a static-dynamic from a non-relational - relational shift by investigating children's generalisations of novel noun-noun compounds that have either a static HAS relation or a dynamic FOR relation. Two-five year-olds and adults were asked to generalise compounds (e.g. wug binto) to one of two object-pairs: either correctly to object-pairs combined via the same relation as the training item but with perceptually dissimilar objects (e.g. different colour), or incorrectly to object-pairs combined via a different relation but with the same objects. Results support a developmental focus shift from non-relational to relational aspects, but not from static to dynamic aspects.

POSTER SESSION II

The acquisition of infinitival constructions in European Portuguese: from bare forms to embedding

Carla Soares, Université Paris Diderot

We examine the acquisition of different infinitival constructions by 3 monolingual children (1;2-4;6; 18884 utterances). The first infinitival constructions to emerge (and the most frequent) are those presenting semi-auxiliaries (from 1:5). Complement infinitival clauses, which emerge before finite complements, are attested from 1;10 but until 3;5 they correspond exclusively to complements selected by the control verb querer (to want'). Embedded infinitive complements selected by causative verbs are rare (from 3;5). Children start producing infinitives that are VP extended domains before producing embedded infinitives. We argue that embedding entails dependence relations that involve a higher degree of structural complexity. Moreover, we will suggest that subordinates that involve CP are more complex and also that the categorical nature of the embedded clause has to be taken into account to characterize syntactic complexity. Furthermore, embedded infinitival complements emerge earlier than purpose adjuncts; this does not confirm that non-selected subordinates are less complex.

POSTER SESSION II

Narrative perspective appears first in gesture

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

A key aspect of narrative development is learning to build narrative coherence. Adults achieve narrative coherence by tracking story referents with pronouns—a strategy that presents challenges for young children. We ask whether children build narrative coherence initially in gesture by tracking story referents from the perspective of the characters. If gesture is part of the process of building narrative coherence, then we would predict that children increase their use of character viewpoint gestures around the time they begin to produce more extended narratives. Examining the narratives produced by 3- to 6-year-old children, we found that by age 5, children showed reliable increases not only in the number of story events they expressed in speech but also in the number of character viewpoint gestures that accompanied these descriptions. Adults and younger children used significantly fewer character viewpoint gestures, showing a U-shaped pattern of development in building narrative coherence across modalities.

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The acquisition of prosodic focus marking: evidence from 5-year-olds

Kriszta Szendroi, University College London Judit Gervain, CNRS, University of Paris V Frauke Berger, University of Potsdam Barbara Höhle, University of Potsdam

Focus marking indicates to the hearer what the speaker intends to assert. Focus is often marked prosodically: for instance, in English by shifting stress and accent to the focal constituent (1). This is also possible in French, although clefting is preferred (2). In German, syntactic displacement may accompany accent shift (3). In our experiment, we investigate whether 5-year-old children show comprehension of focal differences marked by changes in accent placement alone. We designed a novel comprehension task in which children correct false assertions made by the experimenter with either subject or object focus. The experiment is carried out simultaneously in English, German and French to reveal any cross-linguistic differences. Preliminary results from German-speaking adults and children showed sensitivity to accent placement in both groups: subject-correction in SUBJECT-condition was 64.3% (adults), 68.8% (children); object-correction in OBJECT-condition was 82.1% (adults), 78.7% (children).

POSTER SESSION II

Does motherese help children acquire native-language rhythm? — A corpus analysis of "mora-timed" rhythm in Japanese infant-directed speech

Keiichi Tajima, Hosei University Kuniyoshi Tanaka, Hosei University, RIKEN Brain Science Institute

Andrew Martin, RIKEN Brain Science Institute Reiko Mazuka, Duke University, RIKEN Brain Science Institute

The present study investigated whether infant-directed speech (IDS) "exaggerates" rhythmic properties of a "mora-timed" language like Japanese, as has been reported for "stress-timed" languages like English. The RIKEN Japanese Mother-Infant Conversation Corpus, which contains approximately 11 hours of IDS by 22 mothers talking with their 18-to-24-month-old infants, and 3 hours of adult-directed speech (ADS) by the same mothers, was analyzed. Results showed that the duration distinction between short and long vowels and singleton and geminate consonants was not greater in IDS than ADS, except at the end of intonational phrases. When rhythm measures that have typically been used to classify different languages were applied to this corpus, measures of proportion of vocalic intervals (%V) were greater in IDS, while measures of variability of vocalic and consonantal intervals (VarcoV, VarcoC) were smaller in IDS. These results suggest that Japanese IDS does not necessarily show exaggerated rhythmic properties, but diverges from ADS in more subtle ways.

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POSTER SESSION II

Phonological memory and the acquisition of morphosyntax by child L2 learners

Josje Verhagen, Utrecht University Paul Leseman, Utrecht University Marielle Messer, Utrecht University

Phonological memory (PM) span correlates with L2 grammar learning, but it is unclear whether 1) this relationship is specific to certain PM tasks, and 2) whether vocabulary mediates/explains the effect. This study investigates how PM relates to the acquisition of morphosyntax in 43 Turkish child L2 learners of Dutch (mean age=4;4). PM was assessed with serial word and nonword recall tasks and grammar was assessed through narrative retelling. The results show that word recall accounts for 14% and 24% of significant variance in children's production of subject-verb agreement and verb placement, above and beyond vocabulary. Nonword recall does not explain any significant additional variance. We assume that the production of morphosyntax by child L2 learners, at least in part, involves storage-based learning. However, the strength of the effects found may vary with the specific properties of the task used to measure PM.

Syntactic ambiguity resolution in L2 parsing: Effects of prosodic boundaries and constituent length

Lydia White, McGill University Heather Goad, McGill University Daniel Goodhue, McGill University Hyekyung Hwang, McGill University Moti Lieberman, McGill University

There are crosslinguistic differences in parsing ambiguous sentences involving relative clauses, e.g. 'Someone shot [street], the servant [of $[_{NP}$, the actress $[_{RC}$ who was on the balcony]]]]'. English prefers low attachment (LA; RC modifies NP2); Spanish prefers high attachment (HA; RC modifies NP1). Other factors also influence parsing: location of prosodic break; length of RC. Fodor (1998) explains length effects through the Same-Size Sister Constraint: short RCs attach low, balancing with NP2; long RCs attach high, balancing with the complex NP. We examine parsing preferences in Spanish-English L2ers. Comparing HAprosody+HA-SSSC and HAprosody+ LA-SSSC, native speakers and advanced L2ers show a significantly higher incidence of HA when prosodic break and constituent length favour the same attachment. For LAprosody+ LA-SSSC and LA-prosody+HA-SSSC, intermediates show a significant increase in HA responses when cues conflict. Prosodic boundary cues are less robust in LA contexts; when length cues together with L1 preferences favour HA, intermediates are more likely to opt for HA.

POSTER SESSION II

Selective attention in cross-situational statistical word learning

Chen Yu, Indiana University Yiwen Zhong, Indiana University

The present study provides evidence for the operation of selective attention in the course of cross-situational learning with two main goals. The first was to show that selective attention is critical for the underlying mechanisms that support successful cross-situational learning. The second one was to test whether an associative mechanism with selective attention can explain momentary gaze data in cross-situational learning. Toward these goals, we collected eye movement data from participants when they engaged in a cross-situational learning task. Various gaze patterns were extracted, analyzed and compared between strong learners who acquired more word-referent pairs through training, and average and weak learners who learned fewer pairs. Fine-grained behavioural patterns from gaze data reveal how learners selectively attend to individual objects which compete for attention within a learning trial, and how statistical evidence is accumulated trial by trial, and integrated across words, across objects, and across word-object mappings.

POSTER SESSION II

Mutual exclusivity and vocabulary structure

Daniel Yurovsky, Indiana University Ricardo Bion, Stanford University Linda B. Smith, Indiana University Anne Fernald, Stanford University

Children learning words face ambiguity at two scales. First, in any individual naming event, the child must determine which object is the referent. Second, across naming events, the child must determine which word-object mappings define the lexicon. These problems could be independent for early word learners. For instance, two-year-olds may use mutual exclusivity to solve the referent selection problem but not actually learn new mappings (Horst & Samuelson, 2008). However, the problems are connected; information about either can help solve the other (Frank, et al., 2009). We provide evidence that two-year-olds do solve them jointly: individual differences in use of mutually exclusivity predict reliably different vocabulary structures. Mutual exclusivity task performance and MCDIs were collected for thirty-four two-year-olds. The words produced by each child were used to build a semantic network using McRae Features (Hills, et al., 2009). The networks of ME-users were found to have significantly more hub-like structures.

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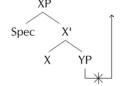
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Rapid lexical ambiguity resolution in highly-verbal children with autism

Hugh Rabagliati, Harvard University Noemi Hahn, Albert Einstein College of Medicine Jesse Snedeker, Harvard University

What causes linguistic deficits in autism spectrum disorders (ASD)? Effective integration of contextual information is vital for communication, and the weak central coherence account of ASD claims this should be impaired in even highly-verbal individuals. Consistent with this, ASD-individuals have demonstrated insensitivity to context when resolving lexical ambiguity. But is this ASD-specific, or a result of their low language skills? We evaluated lexical ambiguity-resolution in 41 highly-verbal ASD, and 40 matched, children, using an implicit eve-tracking task. Sentences contained (un)ambiguous words (star/actor) following neutral contexts (saw the...) or contexts selecting the less-frequent meaning (met the...). Participants freely viewed four pictures, including one semantic associate of the unselected meaning (sun). Matched children used context: They looked more to associates following ambiguous words, but less when the meaning was constrained. Critically, ASDchildren demonstrated a very similar (not significantly different) pattern of looking, suggesting effective contextual integration, and providing evidence against weak central-coherence.

Session B--East Balcony

What anticipatory eye-movements reveal about covert speech: A deep look into the developing production lexicon

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

We examine the earliest stages of the development of a production lexicon, and show that infants can 1. covertly produce wordforms they do not yet pronounce, and 2. categorize these forms based on their length. 21-month-old French-learning infants were tested in an anticipatory eye-movement procedure where they had to anticipate the appearance of an object's image on the left or right side of a screen, depending on the length of its name (e.g. pot 'potty' vs. toboggan 'slide'). In the learning phase, infants simultaneously saw the object's image and heard its label prior to anticipation, while in the test phase new images of known but not yet pronounced objects were presented silently. Thus, in order to successfully anticipate, infants needed to internally generate the objects' names themselves and inspect their lengths. During test, infants' mean difference score on first looks was significantly above chance (t(21) = 3,0; p < 0.01).

Session C--Conference Auditorium

Word order and information structure in a case-marked language: Lexically advanced Czech 3-year-olds comprehend OVS sentences

Filip Smolik, Academy of Sciences of the Czech Republic Veronika Bláhová, Academy of Sciences of the Czech Republic

An experiment examined the role of case marking, word order, and information structure in the comprehension of transitive sentences in Czech children. Children aged 2;9 to 4;5 (N=107) were tested for comprehension of noun-verb-noun sentences in which word order and given-new status of nouns were manipulated. Children's receptive vocabulary was assessed as well. The results confirmed that noncanonical, objectinitial (OVS) sentences are more difficult to comprehend than sentences with the standard SVO word order, but that many children can interpret noncanonical sentences before 4 years of age. Information structure had no effects on comprehension in the less advanced children, but the effects emerged around 4 years of age. The results indicate that children have some abstract knowledge of word order and case marking when they first show evidence of transitive sentence comprehension, but they initially cannot use this knowledge when word order and case marking signal conflicting interpretations.

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Word-mapping in autism: Evidence for backwards bootstrapping of social gaze strategies

Kristina Patrick, Drexel University Felicia Hurewitz, Drexel University Amy Booth, Northwestern University

To help dissect the roles of attention, syntactic cues, and social information in word learning, 25 children with autism and matched controls were given a word-mapping task with increasing levels of gestural support. Looking patterns showed children with autism attended less to the speaker, especially during labeling. Looks to teacher predicted performance across gestures, suggesting social attention improves mapping. Looks at the target during labeling did not predict autism participants' performance except in the gaze condition. For the younger autism group, standardized vocabulary on adjectives and verbs, but not nouns, predicted the ability to use eye gaze information for noun learning. Furthermore, joint attention strategies showed no relation to word-mapping performance. While word mapping in the co-presence of a concrete object is assumed to be an automatic skill in typical children, our results suggest that in autism, this ability becomes available later, after structurally-based word-learning strategies are in place.

Session B--East Balcony

On the development of the productivity of plural suffixes in German

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

Native speakers have the ability to produce a plural for a given novel singular, and a singular for a given novel plural. This productivity involves generalizations over related words. We investigate the development of these generalizations over time. We conducted two production experiments to study the productivity of plural suffixes in German with five-, sevenyear-olds and adults. In one experiment we asked participants to form the plural for given singular words and nonces, in the other experiment we asked them to form singulars from given plural words and nonces. All groups are able to form plurals for singular words; the number of plurals for nonces increases with age. All groups are able to form singulars for plural words; adults are able to form singulars for plural nonces, but neither five-year-olds nor seven-year-olds are. These findings are evaluated in the light of probabilistic, paradigmatic and generative theories of relations between words.

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Session C--Conference Auditorium

Ditransitives in Slavic: Evidence from Russian and Ukrainian acquisition

Roksolana Mykhaylyk, University of Tromso Yulia Rodina, Center for Advanced Study in Theoretical Linguistics, University of Tromso Merete Anderssen, University of Tromso

This paper addresses two main questions with regard to the ditransitive constructions in Russian and Ukrainian: i) does givenness affect the ordering of the object arguments in child production; and ii) is there any basic/neutral syntactic structure in Slavic? If so, can we find evidence for it in the grammar of young language acquirers? Results of an elicited production task show that the 3-6-year-olds alternate between the two word orders (i.e., DAT>ACC and ACC>DAT) with regard to givenness; apply object omissions in appropriate contexts (i.e., omit only given objects); and are more target-like in the use of one word order, i.e., DAT-ACC. These findings suggest that the children have knowledge of object givenness, and that their bias toward one word order may be indicative of the basic/neutral/'default' syntactic structure (in line with Junghans & Zybatow 1997, Dyakonova 2007 and others).

A surprising contrast: Children with autism spectrum disorders (ASD) use contrastive stress to identify new referents but not to establish a contrast set

Rebecca Nappa, Harvard University Jesse Snedeker, Harvard University

Prosodic impairments in ASD are common, but their scope is controversial and there is almost no work exploring the role of prosody in online comprehension. The visual-world paradigm was used to explore two functions of prosodic stress: introducing new information (Exp-1: "Move the candy. Now, move the candy/CANDLE.") and linking a referent to a contrast set in the discourse ("Exp-2: Move the red house. Now, move the GREEN house/green shoe."). In Exp-1, children with ASD (5-10yrs), like language-matched TD controls, used stress rapidly and appropriately. In Exp-2, children with ASD showed the opposite pattern of TD children. TD children (like adults) interpreted contrastive stress on the adjective as indicating that the noun would stay the same (red house/GREEN house) while ASD children interpreted this cue as indicating a change in kind (red house/GREEN shoe). Perhaps children with ASD interpret stress as signaling novelty or are unable to construct contrast sets.

Session B--East Balcony

The gradual development of English /l/

Susan Lin, Macquarie University Katherine Demuth, Macquarie University

One of the fundamental issues in developmental phonology is why some speech sounds are acquired early whereas others are acquired much later. Laterals are of particular interest due to their articulatory complexity and protractedness of acquisition. This study examines the development of onset ("leap") and coda laterals ("peel"), by analyzing audio recordings as well as ultrasound images collected from Australian English speaking children ages 3;0 to 7;6. In our data, coda /l/ productions were generally vocalized before 5;6, and realized in an adult-like manner by older children, in line with existing literature. All onset /l/s recorded in this study were rated to be accurate by adult transcribers. However, nearly all children varied in their production of onset /l/s, alternating between a simple single-articulator realization and an adult-like double-articulator realization. These results suggest that the acquisition of /l/ may be more gradual than previously thought.

Session C--Conference Auditorium

Spontaneous and elicited production of European Portuguese clefts

Ana Lucia Santos, University of Lisbon Maria Lobo, Universidade Nova de Lisboa Carla Soares, Université Paris Diderot

Based on (i) spontaneous production (6 children 1;2-4;6, 37376 child utterances), (ii) child-directed speech (55591 utterances), and (iii) elicited production tasks eliciting subject, direct object, indirect object and adjunct clefts, applied to 22 adults, 14 3-year-olds (mean 3;6), 20 4-year-olds (mean 4;6), and 17 5-year-olds (mean 5;6), we discuss the emergence of different types of clefts. Earlier emergence of é que clefts confirms both Soares (2006) prediction based on a scale of complexity (Derivation Complexity Hypothesis) and an analysis of é que clefts as monoclausal structures. Moreover, the asymmetry found in clefts is not a simple subject/object asymmetry, it is instead a subject vs. (direct/indirect) object, adjunct asymmetry, a fact weakening an intervention explanation in Friedmann, Belletti & Rizzi's (2009) terms. Finally, the data also supports the analysis of certain types of fragments as partially elided clefts, both in adult and in child speech.

Notes

To peek and to peer: "visual" verb meanings are largely unaffected by congenital blindness

Marina Bedny, Massachusetts Institute of Technology Jorie Koster-Hale, Massachusetts Institute of Technology Lindsay Yazzolino, Massachusetts Eye and Ear Infirmary William Johnson, Massachusetts Institute of Technology, Northeastern University

Rebecca Saxe, Massachusetts Institute of Technology

We examined the role first-person sensory experience in conceptual development by studying the verb-meanings of congenitally blind adults (Landau and Gleitman, 1985). Congenitally blind (24) and aged-matched sighted (22) adults judged the semantic similarity for pairs of verbs describing perceptual experience (visual e.g. "to peek" and tactile e.g. "to touch" n=60), perceptible qualities (visual e.g. "to shimmer" and auditory e.g. "to boom", n=45) and manner of motion (e.g. "to spin", "to strut", n=15). The similarity ratings for all verb categories, including "visual" verbs, were remarkably similar across groups (all r>.85); cluster analyses on similarity ratings produces nearly identical clusters. By contrast, human ratings were not well correlated with similarity matrices obtained from Latent Semantic Analysis (LSA), suggesting little reliance on word associations. The results suggest that congenitally blind individuals acquire typical meaning for visual and non-visual verbs. First-person sensory experience is not required for typical meaning acquisition.

Session B--East Balcony

Time course of processing of grammatical agreement information by Russian children

Irina Sekerina, City University of New York - College of Staten Island, City University of New York - Graduate Center

Eye movements of 30 Russian-speaking 6-year-old children were compared to adults as they viewed 30 4-picture displays in 5 conditions. In Fem-UNAMB, the FEM Target 'bird' contrasted in gender with two MASC and one Plural objects. In Fem-AMB, there was a Competitor of the same gender. The gender of the Target (MASC/FEM) was crossed with referential ambiguity (UNAMB/AMB). The 5th Plural condition tested Plural objects. Participants listened to 'In the sky flew a silver bird' and clicked on the Target. Locative-V-Adj-N order ensured that the number/gender agreement markers were on V and ADJ, prior to N: their occurrence was ~600 ms earlier in PL and UNAMB conditions. Children's accuracy was 96%. Proportions of looks to the Target during ADJ indicate that the marker on the V was not enough for children; they used gender only during the N demonstrating a longer competition from the Competitor in both AMB conditions.

Notes

Session C--Conference Auditorium

8-Month-old French infants' acquisition of the word order of their native language

Carline Bernard, CNRS, University of Paris V Judit Gervain, CNRS, University of Paris V

Phrasal prosody and word frequency bootstrap word order in prelexical infants. Here we ask whether they are processed independently, or whether infants expect them to form a unified representation. In natural languages, they both correlate with word order and with each other: functors are frequent and unstressed, content words infrequent and prominent. We report a headturn preference and an EEG study with French-exposed 8-month-old infants. In the former, we tested whether infants expect infrequent words to be prosodically prominent, and frequent words to be non-prominent. In an artificial grammar task, infants showed a preference for their native (frequentword initial) order when prosody and frequency were aligned (frequent words were less prominent), but not when they were misaligned. In the EEG study, we sought to determine the neural basis of this bootstrapping using the same artificial grammar. We found an early (500msec) differential response to word orders consistent with the infants' native order.

Linguistic and conceptual representations of inference as a knowledge source

Ercenur Unal, University of Delaware Anna Papafragou, University of Delaware

Turkish grammatically encodes the source of information about past events with evidentiality markers (direct vs. indirect: hearsay/inference). We investigate the relation between linguistic and non-linguistic representations of information sources by assessing whether children can benefit from inferential cues and the familiarity of objects used as cues in both linguistic and cognitive tasks. In Experiment 1, when presented with photographs giving three types of access to events (Direct, Indirect-Familiar, Indirect-Unfamiliar), 4- and 5-year-old Turkish-speaking children did not produce evidential morphemes in accordance with available evidence. However, in Experiment 2 the same children were able to successfully link matching verbs to events (and avoid linking mismatching verbs to events) regardless of whether access to events was direct/ perceptual or indirect/inferential. In both language and cognition, familiarity of objects used as cues did not affect performance. We conclude that conceptual understanding of information sources develops before the linguistic acquisition of evidentiality.

Session B--East Balcony

It takes two (of the same kind) to play! Animacy effects on the comprehension of conjoined-subject intransitive sentences

Lucia Pozzan, University of Pennsylvania Lila Gleitman, University of Pennsylvania John Trueswell, University of Pennsylvania

The study investigates whether children's inability to interpret conjoined- and plural-subject intransitive sentences (The boy and girl are blicking) as referring to non-causal events might stem from their tendency to interpret novel verbs in this syntactic context as symmetrical predicates (e.g., play, fight), thereby making intransitive sentences compatible with both causal and non-causal interpretations. To test this, we manipulated the animacy of the second NP (Animate-Animate vs. Animate-Inanimate) in a preferential looking paradigm. The reciprocal interpretation of such sentences is unavailable when the two NPs differ in animacy (the girl and the box are falling/*playing), predicting that only children in the Animate-Inanimate condition would show a preference for a non-causal scene over a matching causal scene. The prediction was confirmed. 3-4 year-olds assigned the correct non-causal interpretation to conjoinedsubject intransitive sentences, but only when the syntactic and referential contexts successfully constrained the possible interpretations of novel verbs (Animate-Inanimate Condition).

Session C--Conference Auditorium

Prosodic bootstrapping across ages and languages

Kara Hawthorne, University of Arizona LouAnn Gerken, University of Arizona Reiko Mazuka, Duke University, RIKEN Brain Science Institute

There is mounting evidence that prosody is a useful tool for parsing speech into words, phrases, and clauses (e.g., Langus et al., 2012; Johnson & Seidl, 2009; Soderstrom et al., 2005). In a series of experiments, we ask whether prosody's role in syntax acquisition relates to its general acoustic salience or to the learner's acquired knowledge of the language-specific correlations between prosody and syntax in her native language. Results from American and Japanese 19-month-olds suggest that infants are equally adept at using native and non-native prosody to parse speech into clause-like units. This is evidence that extensive prior experience with the target language is not required for prosody to bootstrap syntax acquisition in infants. On the other hand, American adults can only use native prosody for a similar task, suggesting that infants and adults differ in how they interpret unfamiliar prosodic cues.

Notes

Language and thought relation in learning how stuff counts

Jinjing Wang, Johns Hopkins University Peggy Li, Harvard University Susan Carey, Harvard University

Infants fail to distinguish two piles of sand from one in habituation studies, or to track them through occlusion. The tendency to quantify substances continuously rather than as individuals persists into preschool; three-year-olds cannot tell that four cupful of sand is "more sand" than three, although they can determine that four cups is "more cups" than three. This paper explores the hypothesis that learning measure language ("a cup of sand") leads children to appreciate portions as individuals for quantification. Three- and four-year-old Mandarin- and English-learners were assessed on their language and ability to use containers for comparing quantities of substances. Whereas many children, especially the majority of Mandarinspeaking children, did not have a full grasp of measure phrase language, they were nonetheless able to use containers in quantifying substances. This data supports the alternative hypothesis: the development in the ability to reason about discrete units of substances precedes language development.

Session B--East Balcony

Crosslinguistic influence in scope ambiguity: Evidence for acceleration

Luisa Meroni, Utrecht University Sharon Unsworth, Utrecht University Liz Smeets, Utrecht University, McGill University

The present study provides evidence of crosslinguistic influence in the form of acceleration in the area of syntax-semantics in simultaneous bilingual (2L1) Dutch-Italian children. Previous research has shown that unlike adults, 4-to-6-year-old Dutch monolinguals, often treat scrambled sentences as ambiguous between a specific and a non-specific interpretation (Unsworth et al. 2008). In Italian, indefinite objects are unambiguously specific because they have the same lexical entry as the numeral "one" (uno/a/un'/un) (following Su 2001). Truth value judgement data from monolingual Italian-speaking children demonstrate that this is indeed the case. Comparable data in both languages from age-matched Dutch-Italian bilinguals reveal that (1) bilinguals also consistently accept the specific interpretation in Italian and (2) in Dutch, bilinguals accepted the specific reading significantly more frequently (97% (63/65)) than their monolingual peers (48% (34/65)). We claim that the availability of the specific interpretation in Italian facilitates its acquisition in Dutch in Italian-Dutch 2L1 children.

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Session C--Conference Auditorium

Language and memory abilities of internationally-adopted children from China

Audrey Delcenserie, McGill University Fred Genesee, McGill University

The present study examined the language and memory abilities of 30 internationally-adopted (IA) children from China (9;0-12;5 years of age). The IA children were compared to 30 monolingual non-adopted French-speaking children (CTL) matched for age, gender, and SES using a battery of tests of cognitive and socioemotional development, and language and memory abilities. The groups did not differ on cognitive or socio-emotional development, but the IA children scored significantly lower than the CTLs on all measures of language abilities (vocabulary, grammar, fluency) and on verbal short-term, working, and longterm memory. No differences were found between the groups on non-verbal memory, indicating that IA children's memory difficulties are language-specific. Additional analyses revealed that the best predictor of the IA children's language abilities was verbal STM. The findings suggest that, despite several years of exclusive exposure to French, IA children not only experience language difficulties but also verbal memory difficulties.

Modeling verb choice in spatial language: Refining the learning problem for English

Kristen Johannes, Johns Hopkins University Colin Wilson, Johns Hopkins University Barbara Landau, Johns Hopkins University

Differences between child and adult spatial language have been previously attributed to underdeveloped conceptual representations (Johnston & Slobin, 1979) or incomplete adposition semantics (E.Clark, 1973). We report experimental and modeling evidence in favor of an alternative hypothesis: namely, that children and adults have the same core semantics for spatial adpositions, and differences stem from the development of spatial verbs (e.g., stick, hang) used for specific categories of relations. In Experiment 1, children and adults differed substantially in their use of adpositions and spatial verbs when describing support but not containment relations. A probabilistic model supported non-copular verb use as a main source of spatial language differences across age groups. In Experiment 2, we tested our verb-based hypothesis by instructing adults to avoid using non-copular verbs. Unlike Experiment 1, adults displayed the child-like pattern of spatial language use. Our results suggest that adult-like spatial concepts and adpositional semantics are achieved by four years, and children later acquire the complex compositional semantics required for spatial verbs.

Session B--East Balcony

The logic of double negation in child language

Peng Zhou, Macquarie University Stephen Crain, Macquarie University Rosalind Thornton, Macquarie University

This study investigated children's knowledge of double negation in Chinese. Double negation is a phenomenon where two negatives cancel each other out, thereby yielding a positive meaning. Previous research found that children did not have knowledge of double negation until the age of seven or later. We argue that the observed difficulty of children in previous research is due to an artefact of the experimental task where the target structure was presented without the support of an appropriate context. To see whether preschool children have knowledge of double negation, we used experimental tasks which presented the structure in a plausible context. The results show that 5-year-olds already know that two negatives cancel each other out. By age 6 children are even able to produce double negation in an adult-like manner. This is evidence that double negation does not pose significant difficulty for young children if a plausible context is provided.

Session C--Conference Auditorium

Learning from speaker word choice by assuming adjectives are informative

Alexandra Horowitz, Stanford University Michael Frank, Stanford University

Listeners may use adjective information to infer implicit contrast dimensions (e.g. calling a blicket "red" may imply that blickets can differ by color). In five experiments, we presented sets of aliens that differed along two dimensions to examine listeners' inferences from adjective use. In Experiments 1-3, adults demonstrated strong sensitivity to adjective information across a variety of contrast categories. In Experiments 4-5, we extended our design to 4-year-olds examining color vs. size and pattern vs. size contrasts. Children younger than 4.5 exhibited biases to match by a perceptually salient feature (color in Experiment 4, pattern in Experiment 5), while older children were better able to use adjective information to infer a relevant contrast dimension. Sensitivity to adjective use may require development of executive control to overcome perceptual biases. Recognizing implied information from word choice may help children extract implicit information from utterances and learn about the world more efficiently.

Notes

Acquisition of the trochaic bias in French-German bilingual infants

Ranka Bijeljac-Babic, Universite of Poitiers - CNRS, CNRS Josette Serres, University of Paris Descartes, CNRS Barbara Höhle, University of Potsdam Thierry Nazzi, CNRS, University of Paris Descartes

We explored the emergence of a trochaic bias in bilingual infants learning two different prosodic systems: one with a trochaic predominance (German) and one lacking lexical stress contrast (French). German-learning infants develop a preference for trochaic over iambic words between 4 and 6 months of age, while 6-month-old French infants have no stress pattern preference (Höhle et al., 2009). Twenty-four 6-monthold French-German bilingual infants were tested in the same conditions as the French- and German-learning monolinguals in Höhle et al. (2009). Bilingual infants showed a preference for trochaic sequences and their performance was not affected by the relative amount of exposure to the two languages. The present results establish that the development of a trochaic bias in simultaneous French-German bilinguals is not delayed compared to German-learning monolinguals and that even 30% of exposure to German is enough for bilingual infants to develop a trochaic bias when processing German stimuli.

Alternates

Language differentiation by 20-month-old bilingual infants

Krista Byers-Heinlein, Concordia University Liane Rebner, Concordia University

A key task for bilingual infants is to not only discriminate between their languages at a perceptual level, but to differentiate the languages in their representations. Bilingual adults are slower to process mixed-language speech, which is attributed to the cost of switching between language systems. We tested whether 20-month-old English-French bilingual infants would demonstrate a similar cost, thereby implying language differentiation. In an eye-tracking task, infants were presented with picture pairs (e.g. dog-cookie) and heard either a same-language ("Look at the dog!") or a mixed-language ("Look at the chien!") sentence naming one picture. Infants successfully fixated on the target object on same-language sentences, but were at chance on mixedlanguage sentences. Bilingual infants' representations of familiar words support language differentiation.

Notes	

Alternates

The role of prosody in interpreting novel verb argument structure

Isabelle Dautriche, Ecole Normale Supérieure Alejandrina Cristia, Max Planck Institute for Psycholinguistics Perrine Brusini, Ecole Normale Supérieure Sylvia Yuan, University of California - Berkeley Cynthia Fisher, University of Illinois - Urbana-Champaign Anne Christophe, Ecole Normale Supérieure

Two-year-olds use structural cues to interpret a novel verb (verbs occurring in transitive syntax refer to causative events, Yuan&Fisher, 2009). In certain constructions, however, prosody can lead to alternative interpretations of structural cues; this is the case of right-dislocated sentences in French ("il VERB, le bébé"/"he is VERBing, the baby" = the baby is VERBing), whose surface order is identical to canonical transitive sentences but where prosody provides an unambiguous cue to the verb intransitivity. We assessed 28-month-olds' use of structural and prosodic cues by comparing their interpretation of a novel verb introduced in one of three conditions: transitive, dislocated and intransitive. Children in the transitive and dislocated conditions behaved similarly, interpreting the new verb as referring to a causal event, unlike children in the intransitive condition. This result reveals the importance toddlers assign to structural cues in early sentence interpretation, which leads them to overlook prosodically-cued alternative interpretations.

Comprehension costs reflect production patterns: Evidence from Spanish-English codeswitching

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We examine whether the correspondence between production patterns and comprehension difficulty observed in monolingual sentence processing extends to bilingual code-switching. Participants' eye movements were recorded while reading switches involving the Spanish auxiliary estar 'to be' and an English present participle (i.e., frequent code-switches) and the Spanish auxiliary haber 'to have' and an English past participle (i.e., infrequent switches). The results showed that frequently produced code-switches were easier to comprehend (as measured by gaze duration, regression path and total time) than infrequent switches. The findings are congenial with exposurebased models of processing in which linguistic experience plays a crucial role in the way language is processed (e.g., Gennari and MacDonald, 2009). The findings are discussed in terms of the constraints that may be responsible for the distributional patterns of code-switches found in production.

Alternates

Desire really is easier than belief

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Children understand the verb 'want' before they understand the verb 'think.' This set of experiments controls for several factors that could explain this asymmetry. 'Want' is traditionally tested in a future-oriented context with no conflict with reality, while 'think' is tested in a present-oriented context that often involves a conflict. The first experiment rules out both of these as the cause of the asymmetry. The second experiment rules out another possible cause. 'Want' is often tested in contexts where there is no conflict with the child's personal desires, while a conflict with reality inherently means a conflict with the subject's own beliefs in the 'think' case. The second experiment shows that even with a conflict with the child's own desires, they are still good at representing the desires of others. These experiments rule out several hypotheses for the differences observed in the acquisition path of belief v. desire verbs.

Alternates

Interpretation of ambiguous subject pronouns in Croatian by people with Down syndrome and typically developing children

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This study investigates the interpretation of ambiguous subject pronouns in intra-sentential contexts in Croatian (a null-subject language) by people with Down syndrome (DS) and typically developing children. People with DS, mentally matched typically developing children and typically developing adults completed a picture selection task. Complex sentences featured an ambiguous null or overt subject pronoun in the subordinate clause, which followed the main clause. The participants had to choose between two pictures, thereby selecting the matrix subject or object as the antecedent of the pronoun. People with DS and typically developing children did not differ in their antecedent preferences for null and overt pronouns, but both differed from adults in the overt pronoun condition. This suggests that people with DS are developing in the same way as typically developing children in the domain under investigation and that both populations exhibit a developmental delay with respect to the interpretation of overt pronouns.

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Distributional learning in pragmatic interpretation of prosody

Chigusa Kurumada, Stanford University Meredith Brown, University of Rochester Michael Tanenhaus, University of Rochester

Sentence prosody is a powerful tool for conveying the pragmatic meanings of utterances (e.g., nuclear accenting of contrasted items: YOU shouldn't have done that vs. You shouldn't have done THAT). However, much is still unknown about its processing and acquisition. Drawing on insights from recent work on phonetic categorization and adaptation, we examine how children and adults navigate variability in prosodic information and arrive at speakers' intended pragmatic meanings. First we demonstrate that adult listeners are capable of flexibly attributing different pragmatic interpretations to the same prosodic contour depending on the distribution of prosodic cue values. With this background we then present data from a study targeted at 4-year-olds, suggesting that contextual expectation supports categorical perception in prosody and thereby increases the chance of children's successful interpretation of contrastive accent. Implications are discussed with respect to the continuity between adults' comprehension and children's learning of pragmatic meanings of contrastive prosody.

Notes

Alternates

Using clustering methods to describe the development of intonational categories within a target-oriented parametric approach

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In this paper we analyze the relation between adults' intonational categories as described in the ToBI framework and children's intonation contours, using a parametric approach and cluster evaluation methods based on a German corpus. In the field of prosody, an increasing number of studies on the development of intonation apply the intonational categories of adult speech described as a sequence of high (H) and low (L) tones to child speech. However, the categories described by ToBI or by its language-specific variants are developed for adult speakers. Instead of imposing adult category representations on the description of developmental stages in L1 intonation acquisition, we propose and validate a parametric approach and cluster evaluation method that are applicable to both adult and child speech. First, we show that clusters of parametrized contours obtained from German adult-directed and child-directed speech correlate well with German ToBI categories. We then assess how well clusters at different stages of intonation acquisition correspond to adult target categories. Our results indicate that the proposed methodology is capable of demonstrating, in qualitative and quantitative terms, the continuous development of intonational categories at early ages towards adult target categories.

Alternates

Gender concord and semantic processing in French children: An auditory ERP study

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French-speaking children seem to master adjective and determiner agreement at young ages. However, productive use of gender-marked adjectives is rare in corpora and idiosyncratic gender marking causes variable production. Although they appear to have grammatical constraints, they can be unreliable on grammaticality judgments. We studied agreement and semantic processing in the French determiner phrase using event-related potentials to auditory stimuli. Children saw images of colorful objects with concurrent concordant / discordant auditory stimuli that were grammatical (une chaise verte 'a green chair'), semantically incongruous (the same stimulus with a green FISH), or contained agreement errors (determiner or adjective, *un/e chaise *vert/e 'a.m/f chair.f green.m/f'). Semantic errors elicited negativities (N400s), while gender errors elicited sustained positivities (P600s). These show that children elicit distinct ERPs for semantic and gender errors in tasks without grammaticality judgments, but no reliable early negativities for agreement, contrary to adults, suggesting that agreement is not yet automatized.

Long vs. short QR: Evidence from the acquisition of ACD

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Only three previous studies have investigated children's performance with Antecedent Contained Deletion (ACD). Kiguchi&Thornton (2004) and Syrett&Lidz (2009) show that four- and five-year old children correctly interpret sentences where Binding Principles (B&C) are relevant. Syrett&Lidz (2011) tested ambiguous ACD sentences with multiple QR sites. They show that in scenarios that favor just one interpretation, children choose the correct interpretation about 50% of the time, giving justifications that favor the other interpretation the rest of the time. Based on this, S&L concluded that QR in child grammar can target multiple landing sites. Our experiment investigated whether child grammar in fact targets multiple landing sites for QR, testing unambiguous sentences that contain two VPs, and allowing for short ACD and long ACD interpretations. We report that the accuracy rate of children (N=61, M:5;4) was above chance level for both short and long conditions, which support what S&L report.

Alternates

The ban on adjunct ellipsis in child Japanese

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One of the significant characteristics of Japanese is the availability of Argument Ellipsis. In light of its theoretical importance, a number of acquisition studies demonstrated experimentally that the knowledge of Argument Ellipsis is in the grammar of Japanese-speaking preschool children. However, a serious question remains as to whether children indeed have knowledge of Argument Ellipsis, not the knowledge that any phrase can undergo ellipsis. In adult Japanese, this distinction can be made from the observation that adjuncts are not allowed to be elided. Then, in order to verify children's knowledge of Argument Ellipsis, it has to be demonstrated that children do not permit ellipsis of adjuncts. Given this background, an experiment was conducted with 14 Japanese-speaking children (mean age 5;01). The results succinctly demonstrate that children rule out ellipsis of adjuncts, which in turn provides further support for the conclusion that Argument Ellipsis is in the grammar of Japanese-speaking preschool children.

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