THE FIRST INTERNATIONAL CONFERENCE ON THEORETICAL EAST ASIAN PSYCHOLINGUISTICS

Programme and Abstracts

The Chinese University of Hong Kong
March 10-12, 2017

TABLE OF CONTENTS

Contents

Words from the organizer

The First International Conference on Theoretical East Asian Psycholinguistics (ICTEAP-1) had its origin in discussions at a workshop on East Asian Language Acquisition Workshop held on March 27, 2015 at Soochow University, which was part of a larger international conference on Language Form and Language Function, organized by the School of Foreign Languages there.

Some of the participants thought that it would be a good idea to have an international conference that focuses on deepening our understanding of fundamental problems of language acquisition from the perspective of linguistic theory and cross-linguistic variation, with a focus on East Asian languages, to tackle directly the logical problem of language acquisition, what is called Plato's problem: how it is humans can acquire rich linguistic knowledge given limited and impoverished language input.

Discussion on how to launch the ICTEAP conference began in April of 2015 and CUHK was honored to be entrusted with the responsibility of hosting the first one, with subsequent conferences to be organized by various other East Asian institutions in alternate years. Members of the Preparatory Steering Committee (consisting of Mineharu Nakayama, Yiching Su and myself) agreed that the aims of ICTEAP could be formulated as follows, making reference to the Tokyo Conference on Psycholinguistics (TCP), an annual forum which started at Keio University in 2000 and has been a significant inspiration for the field in the last fifteen years in bringing together theoretical and empirical research that addresses key issues of Universal Grammar and parametric variation.

To promote dissemination of state-of-the-art findings in psycholinguistics, with emphasis on research that has cross-linguistic implications and empirical work that refers to East Asian languages, following the spirit of The Tokyo Conference on Psycholinguistics (TCP).

The conference invites submissions of papers in any area of linguistic theory (phonology, morphology, syntax, semantics, and pragmatics), L1 and L2 acquisition, (bimodal) bilingual acquisition, language processing, and cognitive neuroscience of language, among others. Studies from different paradigms that address "Plato's Problem" ("How can we gain a rich linguistic system given our fragmentary and impoverished experience?") are especially welcome.

Linguists and psycholinguists who seek to address Plato's problem have made great strides in the last several decades, working within the framework of Principles and Parameters (P&P) approach, and more recently the Minimalist Framework. Various researchers have demonstrated the mental reality of innate linguistic principles such as the structure dependence of syntactic operations, Binding principles that govern the interpretation of pronouns and reflexives, and constraints on movement of elements. Building on the inspiring concept that not only are there innate, biologically given linguistic categories and principles,

but there are also genetically encoded parameters which restrict the limits of language variation, enormous progress has been made in our understanding of how languages differ from each other according to certain general underlying principles, and in how systematic variation among languages of the world may be related to systematic variation between the grammars of children and adults. A variety of syntactic parameters, intended to be biologically endowed knowledge, has been proposed and empirically investigated in language acquisition research, including the head direction parameter, the null subject parameter, the wh-parameter, the governing category parameter, the V2 parameter, the polysynthesis parameter, the compounding parameter, etc. The list of putative parameters has included not only syntactic parameters, but also semantic parameters such as the referentiality parameter and the disjunction parameter. We are deeply honored that eminent scholars who have formulated or contributed to our understanding of the above-mentioned parameters, in first and second language acquisition, are participating in ICTEAP-1.

While the theory of parameters has led to a vast body of research findings on language universals and language variation, it has also been subject to continual re-examination in the last decade, challenged by opponents of generative linguistics as well as practitioners working within Chomsky's Minimalist framework. Despite its notable successes, parametric theory has been taken to task for its failure to come up with a definitive set of deep (macro) parameters that can relate a large cluster of properties which are not superficially linked to account for variation in languages that may not be typologically related.

Parametric theory has also been re-evaluated with respect to the Minimalist hypothesis that the only evolutionary event that made language possible was the emergence of the merge operation in the human brain due to genetic mutation, which increased vastly the human capacity for thought. On this view, then, variation in human language is restricted to the externalization of this instrument of thought at the sensory-motor interface, a process which is affected by factors such as physical laws, computational efficiency, and interactions with the environment involving the use of existing cognitive skills. On this view then, it would be difficult to maintain the idea of parameters as genetically encoded linguistic knowledge.

It is therefore timely for us to review the empirical evidence we have in support of Universal grammar and the theory of parameters, evidence old and new, and to re-examine the extent to which the theory should be further developed and modified. We are fortunate to have some of the strong proponents of parameter theory, for both L1 and L2 acquisition, among us today, to share with us their current thinking on the issue and engage in a dialogue with conference participants at the concluding roundtable on "Language acquisition and the theory of parameters". It is our conviction that data on language acquisition and language processing from East Asian languages will enrich and contribute to the lively debate on parametric theory.

We are grateful to the keynote speakers—Professors Stephen Crain, Teresa Guasti and Ken Wexler, and the invited speakers—Professors Donna Lardiere and William Snyder, for accepting

our invitations to speak at ICTEAP-1. We are also indebted to the Advisory Committee members—Professors Hintat Cheung, Stephen Crain, Takuya Goro, Jianhua Hu, Chumgmin Lee, Keiko Murasugi, Chunyan Ning, Hiromu Sakai, Tetsuya Sano, Koji Sugisaki, Gladys Tang, Jane Tsay and Xiaolu Yang for their support and help during various stages of the conference organization. We are glad to see that almost all of them are attending the conference as presenters or chairpersons. A special note of thanks to them, and to Aijun Huang and Sam Leung, for agreeing to serve as chairpersons for oral sessions of the conference.

A lot of the planning for the conference was discussed through email exchanges with Professor Mineharu Nakayama and Yi-ching Su, whose invaluable advice and input has helped steer me on the right path.

We received 108 abstracts from 22 countries and regions in Asia, Australia, Europe, Middle East and North America, and accepted 20 papers for oral presentation, 34 for poster presentation, and 6 paper alternates, based on 4-6 review reports for each submission. The expert evaluations given by the 35 reviewers for the conference abstracts, covering first and second language acquisition, language processing, sign linguistics and atypical development, are gratefully acknowledged.

The conference would not have been possible without the generous funding support of the Faculty of Arts and the Department of Linguistics and Modern Languages of The Chinese University of Hong Kong (CUHK), which is hereby acknowledged. We wish also to thank Pro Vice Chancellor Professor Fanny Cheung and our Faculty dean Professor Yuen-sang Leung for joining us for the inaugural event and offering their warm welcome.

Last but not least, we record our deep gratitude to the dedicated efforts of colleagues of the General Office of the Department of Linguistics of Modern Languages, and of the Language Acquisition Lab, in particular Kinson Lee, Yvonne Lee, Margaret Lei and Gloria Poon, who brought the conference into existence.

A hearty welcome to ICTEAP-1!

Thomas Hun-tak Lee
For Preparatory Steering Committee, ICTEAP;
For Organizing Committee, ICTEAP-1
Chairperson, Department of Linguistics and Modern Languages, CUHK

Organization

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Reviewers

We express sincere gratitude to the following colleagues for their support in reviewing abstracts for ICTEAP-1:

Hin Tat Cheung (The Education University of Hong Kong)

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Acknowledgments

Geographical distribution of abstracts

COUNTRY/REGION	NO. OF AUTHORS
Armenia	1
Australia	3
Bangladesh	2
China	31
France	5
Greece	2
Hong Kong	16
Israel	1
Italy	7
Japan	39
Korea	29
Kuwait	1
Latvia	1
Malta	1
Netherlands	5
Russia	1
Singapore	4
Spain	2
Taiwan	16
USA	14
United Kingdom	3
Vietnam	2

Conference venues

MARCH 10, 2017

Main venue:	Cho Yiu Conference Hall
Lunch venue:	Lu Ming Room, Benjamin Franklin Center
Venue for welcoming reception:	G24, Arts and Humanities Hub, Fung King Hey Building

MARCH 11 AND 12, 2017

Venue for oral sessions:	LT5, 2/F., Yasumoto International Academic Park (YIA)
Venue for poster sessions:	Oval Area, 2/F., Yasumoto International Academic Park
Lunch venue:	Oval Area, 2/F., Yasumoto International Academic Park

SHUTTLE BUS SERVICE

Complimentary shuttle bus service is provided between the conference hotel (Courtyard by Marriott Hong Kong Shatin) and the conference venues (CUHK) during the three days of the conference.

DATE	DEPARTURE TIME (FROM THE HOTEL)	DEPARTURE TIME (FROM CUHK)
March 10, 2017	08:15	20:00 (outside Fung King Hey Building)
March 11, 2017	08:30	18:30 (outside YIA)
March 12, 2017	08:30	17:30 (outside YIA)

WI-FI NETWORK

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Information for presenters

ORAL PRESENTATIONS

For oral presentations, the time allotted is 30 minutes (20 minutes for presentation and 10 minutes Q&A).

POSTER PRESENTATIONS

Poster presentations will be held on Day 2 (1:00-2:30pm) and Day 3 (1:30-3:00pm). Please refer to the board number indicated in the programme for the display location of your poster. The poster boards will be divided into three zones: red (R), green (G), and blue (B). The dimensions of the display board for mounting posters are 76 inches (height) x 42 inches (width). The posters can be displayed in either a portrait or a landscape orientation. Pins will be provided for your use.

PROGRAMME

Programme

March 9, 2017 (Thursday) 16:00-20:00

Registration at Courtyard by Marriott Hong Kong Sha Tin

[Address: 1 On Ping Street, Sha Tin, New Territories, Hong Kong]

March 10, 2017 (Friday) [Venue: Cho Yiu Conference Hall, CUHK]

08:00-08:45	Registration
08:45-09:30	**Opening ceremony** **Fanny Cheung**, Pro-Vice-Chancellor for Research, The Chinese University of Hong Kong **Yuen Sang Leung**, Dean of Arts, The Chinese University of Hong Kong **Thomas Hun-tak Lee**, Member, Preparatory Steering Committee of ICTEAP and Chairperson, Department of Linguistics and Modern Languages, The Chinese University of Hong Kong **Group photo**
09:30-10:30	(Chair: Xiaolu Yang, Tsinghua University) **Keynote Paper:** Issues in the Development of Syntax and Semantics: Why We Have No Alternatives to Parameters Plus Biology **Kenneth Wexler** *(Massachusetts Institute of Technology)*
10:30-10:45	Coffee break
10:45-11:15	(Chair: Tetsuya Sano, Meiji Gakuin University) Root Infinitive Analogues in Asian Child Languages and the Implications for Minimalist Theory **Keiko Murasugi** *(Nanzan University)*
11:15-11:45	Rethinking Parameter Setting from Locality and Orientation Constraints for *Ziji* in Mandarin **Yi-ching Su** *(National Tsing Hua University)*

11:45-12:15	Japanese EFL Learners' Interpretations of Reflexives and Pronouns in Control Constructions **Mineharu Nakayama** *(The Ohio State University)*, **Noriko Yoshimura** *(University of Shizuoka)*, and **Atsushi Fujimori** *(Shizuoka University)*
12:15-12:45	On the Acquisition of Argument/Adjunct Asymmetry and the Complex NP Constraint in Japanese **Kanako Ikeda** *(Ochanomizu University)* and **Kyoko Yamakoshi** *(Ochanomizu University)*
12:45:14:00	Lunch [Venue: Lu Ming Room, Benjamin Franklin Centre, CUHK]
14:00-14:30	(Chair: Koji Sugisaki, Mie University) Second Language Incremental Comprehension: Evidence from Japanese Passives **Sanako Mitsugi** *(University of Kansas)*
14:30-15:00	Thematic Roles versus Grammatical Functions: Processing Japanese Passive Sentences with Canonical and Scrambled Orders by L1 and L2 Japanese Speakers **Katsuo Tamaoka** *(Nagoya University)* and **Michael Mansbridge** *(Nagoya University)*
15:00-15:30	A Cross-linguistic Comparison of L2 Acquisition of Chinese Applicative Double Object Construction **Yuhsin Huang** *(University of Cambridge)*
15:30-16:00	Coffee break
16:00-16:30	(Chair: Jane Tsay, National Chung Cheng University) On the Acquisition of Variation in Count Noun Modification using Numerals: Comparing Japanese and English **Tetsuya Sano** *(Meiji Gakuin University)*
16:30-17:00	A New Look into Deaf Children's Acquisition of Classifier Predicates in Hong Kong Sign Language **Gladys Tang** (The Chinese University of Hong Kong) and **Jia Li** (The Chinese University of Hong Kong)

17:00-18:00	(Chair: Keiko Murasugi, Nanzan University)
	Invited Paper:
	Evidence that Children Set Parameters **William Snyder** *(University of Connecticut)*
18:00-20:00	Welcoming Reception
	[Venue: G24, Arts and Humanities Hub, Fung King Hey Building, CUHK]

March 11, 2017 (Saturday) [Venue: LT 5, 2/F, Yasumoto Academic Park, CUHK]

08:00-09:00	Registration
09:00-10:00	(Chair: Jianhua Hu, Chinese Academy of Social Sciences)
	Keynote Paper:
	Parameters of Logic **Stephen Crain** *(Macquarie University)*
10:00-10:30	Anti-reconstruction Effects of Focused Phrases in Child Japanese **Koji Sugisaki** *(Mie University)*
10:30-11:00	Coffee break
11:00-11:30	(Chair: Takuya Goro, Tsuda College)
	Branching Ambiguity Resolution in Children and Adults: Interpretation of Role-Ambiguous Prosodic Cues **Yuki Hirose** *(The University of Tokyo)* and **Reiko Mazuka** *(RIKEN Brain Science Institute)*
11:30-12:00	A Fine Differentiation of Korean NPIs: Evidence from ERP Responses **Myung-Kwan Park** *(Dongguk University)*, **Euiyon Cho** *(Dongguk University)*, **Jeong-Ah Shin** *(Dongguk University)*, and **Wonil Chung** *(Dongguk University)*
12:00-12:30	The Functional Specification of "Focus": Evidence from Event-related Potentials of Mandarin Chinese Processing **Chin Lung Yang** (The Chinese University of Hong Kong) and **Haihua Pan** (The Chinese University of Hong Kong)
12:30-13:00	Lunch (on-site)

PROGRAMME

13:00-14:30	**Poster Session 1** [Venue: Oval area, 2/F, Yasumoto Academic Park, CUHK]
14:30-15:00 15:00-15:30	(Chair: Aijun Huang, Soochow University) Acquisition of the Scalar Reading of *Dou* by Mandarin-speaking Children **Zhuang Wu** *(Guangdong University of Foreign Studies)* Japanese Passives and the Nature of Syntactic Priming: An Experimental Investigation **Megumi Ishikawa** *(The University of Tokyo; JSPS Research Fellow)* and **Takuya Goro** *(Tsuda College)*
15:30-16:00	Coffee break
16:00-16:30 16:30-17:00	(Chair: Sam Leung, Technological and Higher Education Institute of HK) Referent Introducing Strategies in Advanced L2 Usage: A Parallel Study on French Learners of Chinese and Chinese Learners of French **Ludovica Lena** *(INaLCO; La Sapienza University)* Korean L2 Learners' Online Processing of *wh*-dependency in English and the Role of the Grammar and Working Memory **Euhee Kim** *(Shinhan University)*, **Sunjoo Choi** *(Dongguk University)*, **Jaejun Kim** *(Dongguk University)*, and **Junhyeok Kwon** *(Dongguk University)*
17:00-18:00	(Chair: Gladys Tang, The Chinese University of Hong Kong) **Invited Paper:** Re-thinking Parameter Re-setting in Second Language Acquisition **Donna Lardiere** *(Georgetown University)*
19:00-20:30	Dinner banquet

PROGRAMME

March 12, 2017 (Sunday) [Venue: LT 5, 2/F, Yasumoto Academic Park, CUHK]

08:00-09:00	Registration
09:00-10:00	(Chair: Yi-ching Su, National Tsing Hua University) **Keynote Paper:** Improvising on Trees **Maria Teresa Guasti** *(University of Milan-Bicocca)*
10:00-10:30	Predicting the Structure vs. the Lexical Information in On-line Processing: Evidence from Mandarin Chinese Tone 3 Sandhi **Tzu-Yin Chen** *(The University of Tokyo)*, **Yuki Hirose** *(The University of Tokyo)*, and **Takane Ito** *(The University of Tokyo)*
10:30-11:00	Coffee break
11:00-11:30	(Chair: Hin Tat Cheung, The Education University of Hong Kong) Is Classifier-Noun Mismatch an Effective Cue for Relative Clause Prediction in Mandarin? **Chun-Chieh Hsu** *(National Tsing Hua University)*
11:30-12:00	An Experimental Study of Resumptive Pronouns in Chinese Relative Clauses **Yunchuan Chen** *(University of Hawaii at Manoa)*
12:00-12:30	Lunch (on-site)
12:30-13:30	**ICTEAP business meeting**
13:30-15:00	**Poster Session 2** [Venue: Oval area, 2/F, Yasumoto Academic Park, CUHK]
15:00-15:30	Coffee break
15:30-17:00	(Chair: Thomas Hun-tak Lee, The Chinese University of Hong Kong; Chungmin Lee, Seoul National University) **Roundtable Discussion on "Language Acquisition and the Theory of Parameters"** (Stephen Crain, Maria Teresa Guasti, Donna Lardiere, William Snyder, Kenneth Wexler)

PROGRAMME

Poster Session 1 (March 11, 2017 13:00-14:30)	**Board no.**

Allocation of the Cognitive Resources to the Processes of Unheralded Pronoun in a Second Language

Shiori Asami *(International Christian University)* and **Yasunori Morishima** *(International Christian University)*

R7

Processing the Focus Particle *Only* in L2 English Learners' Sentence Comprehension

Sunjoo Choi *(Dongguk University)*, **Jaejun Kim** *(Dongguk University)*, **Junhyeok Kwon** *(Dongguk University)*, and **Euhee Kim** *(Shinhan University)*

G1

The Focus Phrase and the Disjunction Parameter in Mandarin

Na Gao *(Macquarie University)*, **Rosalind Thornton** *(Macquarie University)*, and **Stephen Crain** *(Macquarie University)*

R1

A Study of Young Mandarin-Speaking Children's Implicit Temporal Reference

Han Hu *(Tsinghua University; Tianjin Normal University)* and **Xiaolu Yang** *(Tsinghua University)*

R2

Universal Grinder is Universal: An Empirical Study of Collective Nouns in Mandarin Chinese

Aijun Huang *(Soochow University)* and **Jingjing Li** *(Soochow University)*

R3

Learnability Issues in L2 about Prosody and Semantics Interface

Masaaki Kamiya *(Hamilton College)* and **Priya Ananth** *(Middle Tennessee State University)*

G2

The Acquisition of Telicity by Japanese Learners of English

Takayuki Kimura *(Tohoku University)* and **Shigenori Wakabayashi** *(Chuo University)*

G3

Aspect and Quantification in Child Cantonese: The Referential Effects of Verbal Affixes in Children's Production

Margaret Lei *(The Chinese University of Hong Kong)*

R4

Early Production of Tone Three Sandhi Avoidance

Chin-Ting Jimbo Liu *(National Cheng Kung University)* and **Li-mei Chen** *(National Cheng Kung University)*

R5

Voice/Case/Case (Mis)match in Pseudo-Sluicing of Korean: An ERP Approach	**B1**

Jeong-Ah Shin *(Dongguk University)*, **Euiyon Cho** *(Dongguk University)*, **Myungkwan Park** *(Dongguk University)*, and **Wonil Chung** *(Dongguk University)*

An Empirical Evaluation on the Subject/Object Asymmetry of Chinese Complex NP Island	**B2**

Yi-ching Su *(National Tsing Hua University)*, **Tzu-Yu Chen** *(National Tsing Hua University)*, and **Yu-Rou Tuan** *(National Tsing Hua University)*

The Role of Markedness in Hearing L2 Users of Taiwan Sign Language	**G4**

Jane Tsay *(National Chung Cheng University)*

Why is Aspectual Coercion Difficult to Process? Evidence from Event-related Brain Potentials	**B3**

Masataka Yano *(Tohoku University; Japan Society for the Promotion of Science)* and **Saki Tsumura** *(The University of Tokyo)*

Processing Chinese Relative Clauses with Different Lengths of Adverbials	**B4**

Ling Zhang *(The Education University of Hong Kong)*, **Yen-Hui Audrey Li** *(University of Southern California)*, **Chun Wai Leung** *(The Chinese University of Hong Kong)*, and **Patrick C. M. Wong** *(The Chinese University of Hong Kong)*

[±Null Topic] Parameters in Mandarin-speaking Children	**R6**

Jingtao Zhu *(Universitat Autònoma de Barcelona)* and **Anna Gavarró Algueró** *(Universitat Autònoma de Barcelona)*

Poster Session 2 (March 12, 2017 13:30-15:00)	**Board no.**
On the Acquisition of Japanese Conjunction and the Semantic Subset Principle: A Preliminary Report **Yoshiki Fujiwara** *(University of Connecticut)* and **Hiroyuki Shimada** *(Meiji Gakuin University)*	**R1**
Scalar Implicatures in Young Chinese Poor Readers **Shenai Hu** *(Xiamen University)*, **Peng Zhou** *(Tsinghua University)*, **Francesca Foppolo** *(University of Milano-Bicocca)*, and **Denis Delfitto** *(University of Verona)*	**G3**
The Course of V-V Compound Acquisition in Child Japanese **Yasuhito Kido** *(Kobe University; Research Fellow of the Japan Society for the Promotion of Science)*	**R2**
L1/L2 Influence on the Perception of Motion Events: Evidence from Eye Movements **Soo-Ok Kweon** *(POSTECH, Korea)* and **John Drury** *(Stony Brook University)*	**R5**
Unaccusative and Unergative Verbs in Child Mandarin: Revisiting the A-Chain Delay Hypothesis (ACDH) **Yaqiao Lu** *(The Chinese University of Hong Kong)*	**R3**
Ambiguity in the Processing of Prenominal Mandarin and Japanese Relative Clauses **Michael Mansbridge** *(Nagoya University)* and **Katsuo Tamaoka** *(Nagoya University)*	**B1**
Incremental and Predictive Processing of English Relative Clauses in Second Language **Itsuki Minemi** *(The University of Tokyo)* and **Masataka Yano** *(Tohoku University; JSPS Research Fellow)*	**B2**
Children's Early Acquisition of Cleft Sentences in Japanese **Akari Ohba** *(Ochanomizu University)* and **Kyoko Yamakoshi** *(Ochanomizu University)*	**R4**
Second Language Acquisition of Japanese *So*-series DPs **Tokiko Okuma** *(University of Shizuoka)*	**R6**

Online Predictive Processing of Mandarin Tone: Evidence from ERPs **B3**

Stephen Politzer-Ahles *(The Hong Kong Polytechnic University)*, **Seth Wiener** *(Carnegie Mellon University)*, and **Caicai Zhang** *(Chinese Academy of Sciences)*

Grammatical Processing Difficulties in Mandarin-speaking Preschool Children with Autism Spectrum Disorders: Assessment via Intermodal Preferential Looking **G4**

Yi (Esther) Su *(Central South University)* and **Letitia R. Naigles** *(University of Connecticut)*

Cross-modality Learning and the Overt Pronoun Constraint: A Case Study on Taiwan Sign Language **G1**

Devin Tankersley *(National Tsing Hua University)*

Can Second Language Learners Use Syntactic and Semantic Information for Ambiguity Resolution? **R7**

Saki Tsumura *(The University of Tokyo)* and **Itsuki Minemi** *(The University of Tokyo)*

Sensitivity to Gender Information in Anaphor Resolution: the Case of Mandarin Chinese **B4**

Yuhang Xu *(University of Rochester)* and **Jeffrey Runner** *(University of Rochester)*

The Perception of Handshapes in the Hong Kong Sign Language **G2**

Wenjing Zhao *(The Chinese University of Hong Kong)* and **Ziyi Pan** *(The Chinese University of Hong Kong)*

Keynote papers

Parameters of Logic

Stephen Crain
Macquarie University

Four parameters of logic have been proposed, and three have been subject to investigation in child language. This talk will discuss these three. The talk will make general observations about the parameters of logic, and report the findings of experimental studies. Different values of the parameters of logic yield different scope assignments for logical expressions in negative sentences. One scope assignment is taken as evidence that a logical expression is a Positive Polarity Item (PPI) on one value of the parameter. As a PPI, logical expressions take scope over negation iff both scope bearing expressions are (a) local and (b) overt (phonetically realized). This is supported by considerations of an uncontroversial PPI, the English existential *some* and its counterpart *any*. If negation and a logical expression do not reside in the same local syntactic domain, or if either one of them is covert, then the polarity sensitivity of the logical expression is cancelled and it is interpreted *in situ*. The parameters of logic determine the circumstances in which sentences are judged to be True or False by children and adults. One value of each of the parameters asymmetrical entails the other value, so the circumstances that verify a sentence on one value are a subset of those that verify it on the other value. In the absence of negative evidence, children's initial setting of these parameters is expected to be the subset value. Because the initial value is determined by a subset principle, positive evidence informs children of a mismatch between their grammars and those of adults. This enables children to reset the parameter if the initial setting of a parameter differs from that of adult speakers of the local language. In a class of languages, the circumstances in which negative sentences with a logical expression are judged to be True differ for children and adults. In view of these differences between child and adult language, it is implausible to suppose that children learn the initial value of the parameters based on input from adults. We will report some relevant findings from cross-linguistic experimental investigations of the parameters of logic, including examples of studies with children acquiring Mandarin. Taken together, the findings resist explanation on accounts of scope assignments that are based on (a) parsing principles (b) precedence (e.g., isomorphism) or (c) adult input. The findings are compelling evidence for the biolinguistic approach to language acquisition.

Improvising on Trees

Maria Teresa Guasti
University of Milano-Bicocca

Improvisation, which consists in inventing variations on a given framework, has played a major role in the musical tradition. Likewise, language, a unique human trait like music, is based on improvisation: Speaking is improvising on "trees" from our point of view. Unless one is repeating sentences learned by heart, it is unlikely that the same idea is expressed exactly with the same words or the same construction. Frameworks, and not random combination of single tones, are the basis of musical improvisation. Similarly, as it is well-known in the generative tradition, hierarchical abstract structures are the material for language improvisation. Early on, children (like adults) must rely on abstract structures (that capture sequential regularities and hierarchical organization). Since structures in language (but probably not in music) are signaled by morphosyntactic features, early on children must also be sensitive to these features.

Drawing on the literature, I show that children from 19 months have abstract knowledge of a basic parameter of language, the relative order of heads and complements and this is so for languages with SVO and SOV orders (Franck et al. 2011; Gavarro et al. 2015). Languages with mixed word order, which are likely the majority, do not invalidate the need for a parametric approach, as variations are limited and mainly based on abstract categories (Noun, Preposition) (Cinque, 2016).

Next, we revisit the subject/object asymmetry in the acquisition of relative clauses (RC) and wh-questions. Based on Mandarin and on the featural minimality approach (Rizzi, 2004; Friedmann et al. 2009), I show that children's difficulties with object extraction are evidence for the hierarchical organization (c-command) of such sentences (Hu et al. 2015): the subject of the RCs is hierarchically closer to the moved relative head than the object gap. I corroborate this view with two facts from Wenzhounese RC production (Hu, Cecchetto & Guasti, submitted). Like in Mandarin, children and adults prefer to produce subject over object RCs when syntactic movement occurs, as in head external RCs. However, in Wenzhounese, participants can opt for head internal and doubling RCs and, interestingly, they do so when asked to produce an object RC (giving rise to an object preference in this case). Wenzhounese head internal and doubling RCs might well be produced for the same reason why non-target structures are produced when head-initial object RCs are elicited; for example, from age 5, Italian-speaking children consistently produce passive SI-causative RCs (Contemori and Belletti 2015) or reduced (passive) RCs (Guasti et al. 2012) rather than object RCs. Interestingly, these structures are not frequently attested in corpora (Belletti and Chesi, 2011), and crucially, children and adults do not resort to the same options in elicitation contexts. Returning to subject/object asymmetry, I suggest that when faced with a challenging instance of A'-movement, participants "improvise" by producing head internal object RCs (Wenzhounese) or some forms of passives (RCs Italian) and in this way they obey a stricter version of locality than adults do (Belletti and Rizzi, 2011; Guasti, 2015).

Concerning sensitivity to morphosyntactic features, I discuss the case of article use by children and in particular, I show that Italian-speaking children are sensitive to the definiteness status of the (article introducing the) subject when they use unaccusative but nor unergative verbs (Vernice and Guasti 2014).

Concluding, language allows improvisation. One way to account for this astonishing feature of language is to admit that humans are biologically prepared to operate with abstract structures and organize them hierarchically, as proposed in the generative tradition (Chomsky, 1959).

Issues in the Development of Syntax and Semantics:
Why We Have No Alternatives to Parameters Plus Biology

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The Principles and Parameters framework has provided an enormously productive general framework, for both linguistic theory and for the extremely productive study of language acquisition. There have been various challenges to the notion of parameter in recent years. However, substitutes have for the most part not been offered. This talk will review some of the successes of the notion of parameter, especially with regard to the study of linguistic development, together with the challenges. We will conclude that the accomplishments of alternative proposals are at best vague and at worst non-existent.

One challenge to the theory of parameters says that the theory of language learning should replace the Principles and Parameters framework by the general notion of statistical learning. The notion has had no success in accounting for grammatical (including semantic) learning or development. This is true for both the currently popular neo-Bayesian framework and the older Connectionist framework. This does not mean that there are no statistical properties of learning. I will very briefly review some proposals. In general these proposals don't even attempt to account for the developmental path of acquisition. They pay no attention to the remarkable discoveries of extremely regular patterns in child grammar, patterns that invoke the notion of parameter. Without the notion of parameter (or something similar) how could we even begin to talk about the Optional Infinitive stage of child grammar (which we understand to include particular difficulties with computation of grammar, e.g. the Unique Checking Constraint) while of necessity having to accept that the relevant parameters have been set exactly correctly. There is not even any attempt at a study of statistical learning that tries to get this widely accepted and pretty much exception-free empirical result based on voluminous data in many languages.

We don't as of yet have a successful model of parameter setting. I will briefly review some of the problems with the best attempts. My take is that we need to work harder at this model, not to throw out a concept that does so much remarkable empirical work, allowing an understanding of child grammar that escaped preceding generations in favor of a model that has no empirical or theoretical successes at all.

Invited papers

Re-thinking Parameter Re-setting in Second Language Acquisition

Donna Lardiere
Georgetown University

What does it mean to 'reset' a parameter in cases where a second-language learner brings a fully-developed native language grammar, presumably with L1 parameter values set, to the task of learning another language? Within a linguistic framework where parameter setting is claimed to involve the selection of features from a universal feature set and the assembly of those features into lexical items (e.g. Chomsky 1998, 2001), what happens in cases where both the L1 and the L2 select a feature F but overtly realize F under very different conditions? In this talk, I consider some challenges — both conceptual and empirical — for this parameter-setting-as-feature-selection model and demonstrate how little it actually accounts for or facilitates that which must be learned. I discuss findings from studies of the L2 acquisition of number marking in Korean and Indonesian (both classifier languages with plural marking that already renders them in apparent conflict with Chierchia's (1998) Nominal Mapping Parameter), as well as the L2 acquisition of variable case ellipsis in Korean. Finally, I consider the contribution of second language research to broader questions concerning the equivalence of parameters and features cross-linguistically and the plausibility of parameter setting as an explanatory mechanism within language acquisition studies more generally.

Evidence that Children Set Parameters

William Snyder
University of Connecticut

From the perspective of child language acquisition, many different approaches to cross-linguistic variation can be described as 'parametric'. The key property of a parameter is simply its abstractness. In other words, a proposed point of grammatical variation is parametric if it is substantially more abstract than any single word-type, sentence-type, or surface-level construction that it might influence.

On this view a parametric hypothesis potentially leads to one or more of the following three types of acquisitional prediction: (i) a prediction of concurrent acquisition (i.e., that two specific linguistic structures / properties / characteristics are necessarily acquired together); (ii) a prediction of ordered acquisition (i.e., that the two, if acquired separately, will necessarily arrive in a specific order); or (iii) a prediction of mysterious acquisition (i.e., that children will know a certain structure is grammatically possible, or that a certain grammatical property is present, even though direct evidence is ambiguous or exceedingly rare).

In this talk I present examples of parametric hypotheses, drawn from several different areas of grammar, that appear to make accurate predictions (of all three types) for child language acquisition.

Oral presentations

Predicting the Structure vs. the Lexical Information in On-line Processing:
Evidence from Mandarin Chinese Tone 3 Sandhi

Tzu-Yin Chen, Yuki Hirose and Takane Ito
The University of Tokyo

Numerous studies suggest that human language parser is capable of predicting the upcoming information. Syntactic head can be predictably processed even in head-final structures. For example, [1] demonstrated that case markers facilitate prediction of the argument structure of the verb in Japanese.

Evidence for pre-head prediction can be found in processing at a sub-sentential level.   In many languages, a noun can be segmentally ambiguous as to whether it is a head by itself or a modifier of a noun-noun compound, where a head noun is to follow (e.g., *chicken* vs.*chicken egg*). Oftentimes there is some prosodic cue indicating the compound status of the noun in on-line processing. For example, Compound Accent Rule (CAR) in Tokyo Japanese has been found to help listeners predicting the compound structure, when the pitch accent of the compound modifier is realized differently from its original lexical accent [2] due to application of CAR.

Arguments supporting pre-head prediction so far can lead us to a further question: is it the abstract structure (e.g., the argument structure and the modifier-head compound structure) that is predicted without digging into the lexicon, or is the parser actually predicting certain attributes of the head item that are stored in the lexicon? This study takes advantage of a phonological process in Mandarin Chinese that allows us to test these possibilities separately.

Mandarin Chinese Tone 3 Sandhi (T3S) is a phenomenon whereby a falling-rising tone (tone 3: T3) syllable changes to high-rising tone (tone 2: T2) when followed by another T3 (e.g. *ni*3+*hao*3→*ni*2 *hau*3 "hello"). We report two visual world paradigm experiments using novel compounds.

Experiment 1 tested whether the T3S applied on a noun facilitates prediction of its compound-modifier status. Participants were presented with eight visual objects and heard auditory stimuli such as (1a-b). The results showed that participants preferentially looked at the Target Compound and Competitor Compound objects (see Figure 2) over Target Single object when hearing a lexically T3 noun with T3S applied (i.e. (1b)) compared to when T3S is not applied (i.e. (1a)). Identification of the designated target objects (single or compound) was faster for (1a/b) compared to the cases where T3S is not relevant (1c/d).

Experiment 2 tested whether application of T3S further predicts the specific tone type (T3) of the upcoming head among multiple compound candidates. In this experiment, all target objects denoted a compound and the participants were presented with auditory stimuli such as (2a-d). If the presence of T3S in (2b) helps the listeners to eliminate the compound targets which would not trigger the T3S, the identification of the correct compound target would be faster in (2b) compared to the other conditions. We found no difference in the eye-movement patterns among the conditions.

The results of the two experiments together suggest that comprehenders exploit evidence of T3S application to anticipatorily select between the single head vs. compound representations effectively, without going further to predict the tone type of the head noun, which is irrelevant to the structural representation.

Example

(1) Auditory stimuli in Experiment 1

  a.T3/single

    zhu2 <u>sun3</u>   (竹筍 'bamboo-shoot')

  b.T3/compound (T3S applies)

    *zhu2 **<u>sun3→2</u>** <u>ru3</u> niu2*   (竹筍乳牛'bamboo-shoot cow')

  c.non-T3/single

    *xiang1 **jiao1***   (香蕉 'banana')

  d. non-T3/compound (No Sandhi applies)

    *xiang1 **jiao1** <u>ru3</u> niu1*   (香蕉乳牛 'banana cow')

(2) Auditory stimuli in Experiment 2

  a. *zhu2 <u>sun3</u> wu1 gui1*   (竹筍烏龜 'bamboo shoot turtle')

  b. *zhu2 **<u>sun3→2</u>** <u>ru3</u> niu2*   (竹筍乳牛 'bamboo shoot cow')

  c. *xiang1 jiao1 wu1 gui1*   (香蕉烏龜 'banana turtle')

  d. *xiang1 jiao1 <u>ru3</u> niu2*   (香蕉乳牛 'banana cow')

Reference

[1] Altman, Gerry T. M. & Yuki Kamide. (1999). Incremental Interpretation at Verbs: Restricting the Domain of Subsequent Reference, *Cognition*, 247-264.

[2] Hirose, Yuki and Reiko Mazuka. (2015) Predictive Processing of Novel Compounds: Eveidence from Japanese. *Cognition*, 136, 350-358.

Figure 1. An example of the visual stimuli used in Experiment 1

Figure 2. The proportion of looks to Target Compound and Competitor Compound in Experiment 1
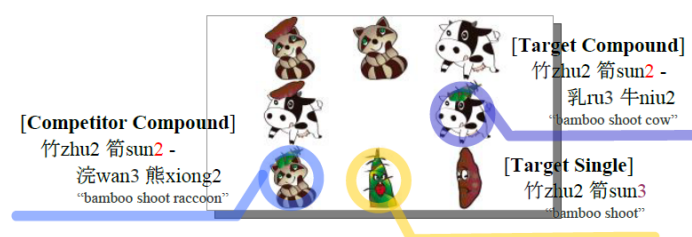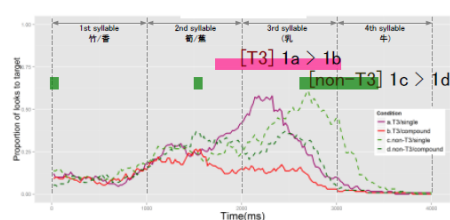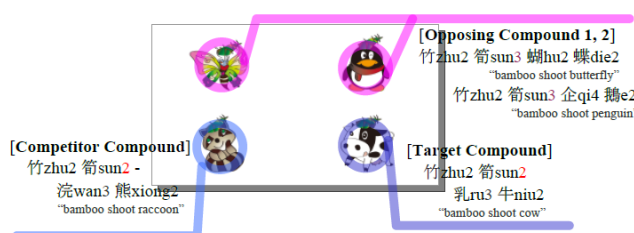

Figure 3. An example of the visual stimuli used in Experiment 2
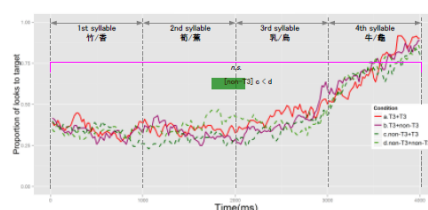

Figure 4. The proportion of looks to Target Compound and Competitor Compound in Experiment 2

An Experimental Study of Resumptive Pronouns in Chinese Relative Clauses

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The Issue: English resumptive pronouns (RPs) are preferred over gaps only when gaps are inside islands that involve multiple violations (Han et al., 2012; McDaniel & Cowart, 1999; Keffala & Goodall, 2011). In contrast, while Irish and Hebrew RPs cannot appear in subject gaps in simple relative clauses (RCs) (1a) due to the 'High Subject Restriction' (HSR) (McCloskey, 1990), they freely occur in object gaps (1b) and subject gaps in embedded RCs (1c) (McCloskey, 1990; Shlonsky, 1992). Meanwhile, it has been claimed that the Chinese RP *ta* can occur within Chinese relative clauses (CRCs) (2) (e.g. Aoun & Li, 2003; Gu, 2001; Huang, 1984; Huang, Li, & Li, 2009), which is in line with Hebrew and Irish. However, it is unclear whether the RP has the same acceptability as the gap in CRCs. Moreover, it is unknown whether the HSR, which was found in Hebrew and Irish, applies to CRCs. Thus, we need to examine whether the RP can be licensed in subject gaps inside simple RCs.

Experiments: Experiment 1 examined acceptability of subject gaps/RPs inside simple and embedded RCs, while Experiment 2 did the same with object gaps/RPs. They are both acceptability judgment studies with a 5-point scale with two factors: (a) whether the RC has a gap or RP (GAP-TYPE) and (b) whether the RC is simple or embedded (EMBEDDING) ((3)-(6)). Sixteen different lexicalizations of critical items, each in the four conditions, were created and distributed among four lists, such that each participant saw only one condition of each lexicalization, and mixed with 36 fillers. Two groups of 30 university students in China participated.

Results: Figure 1 summarizes the results of Experiment 1. There were main effects of GAP-TYPE ($F(1, 29)=95.17$, $p<.01$), EMBEDDING ($F(1, 29)=89.10$, $p<.01$) and an interaction between the two ($F(1, 29)=27.18$, $p<.01$). The result of a paired t-test shows that a gap is preferred to a RP in both simple and embedded RCs. Figure 2 summarizes the results of Experiment 2. There were main effects of GAP-TYPE ($F(1, 29)=41.40$, $p<.01$), EMBEDDING ($F(1, 29)=35.60$, $p<.01$), and an interaction between the two ($F(1, 29)=42.92$, $p<.01$). However, the result of a t-test shows that a gap is preferred to a RP only in simple RCs. There is no significant difference between a gap and a RP in embedded RCs ($t(29)=1.61$, $p=.12$).

Conclusion: The results showed that both the gap and the RP are possible within CRCs and the HSR does not apply in Chinese. However, the gap is preferred over the RP in the subject and object positions of simple CRCs. For embedded CRCs, there was an asymmetry of what is preferred: in the subject position, the gap is preferred to the RP while in the object position, the gap and the RP are equally acceptable. This asymmetry could be accounted for by Keenan and Comrie's (1977, 1979) Noun Phrase Accessibility Hierarchy (NPAH) but was not predicted by Hawkins' (2004) proposal that complexity of RCs is measured in the size of the filler-gap domain (FGD).

(1) a. ha-√is   še-(*hu)   √ohev √et   Rina   [Hebrew]
         the-man that-(he)   love ACC   Rina
         'the man who loves Rina.'
    b. ha-√is   še- ra√ti (√oto)
        the-man that-(I) saw (him)
        'the man that I saw (him).'
    c. ha-√is   še-   xašavt   še(-hu)   melamed   √anglit
        the-man that(-you) thought   that(-he)   teaches   English
        'the man that you though teaches English.' (Shlonsky 1992; (6), (1) and (2))

(2) wo xiang kan [CP ni shuo [CP Zhangsan hui dai   t$_i$/ta$_i$ huilai de] [xiaohai]$_i$]
    I want see   you say   Zhangsan will bring him back DE child
    'I want to see the child that you said that Zhangsan would bring back.'
                                                  (Aoun and Li, 2003: 170; (25))

(3) subject-gap: simple RC with a gap or a RP (SG/SRP)
    Jingguan shenwen-le   [CP t$_i$/ta$_i$ zai zhubaodian-li tou-le   baoshi de] zuifan$_i$.
    police   interrogate-PST   he at jewelry shop-in steal-PST jewelry DE criminal
    'Police interrogated the criminal$_i$ who ___$_i$ stole jewelry at the jewelry shop.'

(4) subject-gap: embedded RC with a gap or a RP (EG/ERP)
    Jingguan shenwen-le   [CP faguan duanding [CP t$_i$/ta$_i$ zai zhubaodian-li tou-le
    police   interrogate-PST   judge believe   he at jewelry shop-in steal-PST
    baoshi de]] zuifan$_i$.
    jewelry DE criminal
     'Police interrogated the criminal$_i$ who the judge believed ___$_i$ stole jewelry at the
    jewelry shop.'

(5) object-gap: simple RC with a gap or a RP (SG/SRP)
    Jingguan xunwen-le [CP zuifan   zai zhubaodian-li   xiji-le t$_i$/ta$_i$ de] yuangong$_i$.
    police   ask-PST   criminal at jewelry shop-in hit-PST he DE staff
    'Police asked the staff$_i$ whom the criminal hit ___$_i$ at the jewelry shop.'

(6) object gap: embedded RC with a gap or RP (EG/ERP)
    Jingguan xunwen-le [CP faguan duanding [CP zuifan zai zhubaodian-li xiji-le t$_i$/ta$_i$
    police   ask-PST   judge believe   criminal at jewelry shop-in hit-PST he
    de]] yuangong$_i$.
    DE   staff
     'Police asked the staff$_i$ whom the judge believed the criminal hit __$_i$ at the jewelry shop.'

Figure 1: Means of the four critical   Figure 2: Means of the four critical
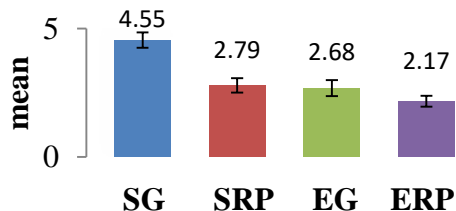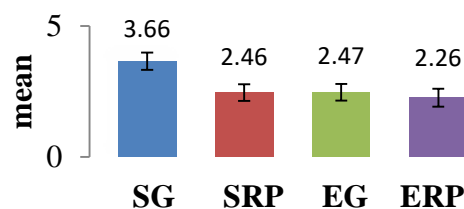conditions from Experiment 1 (**subject gap**)   conditions from Experiment 2 (**object gap**)

**Branching Ambiguity Resolution in Children and Adults:
Interpretation of Role-ambiguous Prosodic Cues**

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The syntax-prosody correspondence in Japanese requires a structurally-ambiguous head final NP such as (1) to have distinct intonation patterns reflecting its branching structures. The left branching (LB) structure (i.e., (2)) is associated with a default downstepping pattern over the three constituents while the pitch peak on W2 is realized notably higher in the right branching (RB) structure (i.e., (3)) ("metrical boost", Kubozono, 1993), indicating W2 and W3 are grouped together. Meanwhile, an enlarged pitch range on the same word in (2) could mean the contrastive focus on "cat" (e.g., as opposed to dog). Thus, perceptually very similar prosodic signals can carry ambiguity regarding its role. Recent study by Ito et al. (2013) argue that interpretation of such prosodic information modulates with the degree of referential support for adult speakers: the less felicitous the contrastive interpretation was in the given discourse, the more likely it was taken as signaling syntax.

Our visual world study tested how adults (N=13) and children (6-7 yrs, N=23) respond to this potentially role-ambiguous prosodic cue. The auditory stimuli (twelve sentences) with the branching ambiguity were either with the default prosody or with a raised pitch on W2 (marked prosody). The visual display (e.g., Figure1) had eight objects including the possible LB and RB referents and the competitor referents that stood in contrast with the potential referents by W2 (an umbrella with a blue squirrel/ a blue umbrella with a squirrel). If the marked prosody is interpreted as signaling the RB structure, looks to the RB target should be facilitated during processing. Alternatively if it is interpreted as expressing contrast, the looks to the LB should increase, since the information "blue CAT" (as opposed to blue squirrel) is focused in the incremental processing when W2 is received.

The LME analysis of the log ratio of the looks to LB /RB target during the 200-300ms interval from the offset of the second noun revealed that the marked prosody, compared to default, caused more looks to the LB target relative to RB in adults (p<.05). This suggests adults processed the prosodic cue primarily as a contrastive cue. For children, on the other hand, it facilitated looks to the RB target relative to LB target, though their data were subject to a large individual variability. Yet, it seems that children react to the prosodic cue even at an earlier time course compared to adults, but towards the opposite direction (to RB target). The direction of the effect appears to be consistent with the prediction assuming the syntactic interpretation of the prosody. This is consistent with previous findings about developing sensitivity to discourse information (e.g., Trueswell et al., 1999; Snedeker & Trueswell, 2004). However, the fact that children are in fact reacting at a relatively early time region might suggest that the pitch-emphasis "CAT" has yet another function in children. For example, children may temporarily interpret the prosodic cue as emphasizing any cat referent without necessarily establishing the syntactic relation between "blue" and "cat" (the plain (non-colored) cats depicted in the RB target object might look more conspicuous than the colored cats in the LB in our visual material). The nature of the apparent preference in looking at the RB-referring objects will be further discussed.

Examples

(1) W(ord)1   W2   W3
    ao'i   ne'ko-no   ka'sa
    blue   cat-Gen   umbrella

(2) LB interpretation: "an umbrella with a blue cat on"
    [[ao'i   ne'ko-no]   ka'sa]

(3) RB interpretation: "a blue umbrella with a cat on"
    [ao'i   [ne'ko-no   ka'sa]]

Figure 1. An example display

Is Classifier-Noun Mismatch an Effective Cue for Relative Clause Prediction in Mandarin?

Chun-Chieh Hsu
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Whether a classifier-noun mismatch (1a) may serve as an effective cue for relative clause (RC) prediction in Mandarin is debatable. A mismatching classifier is an unambiguous cue for RC structure, because the only way to continue the mismatch is an object-gap RC (1b). Yet, nothing in the grammar of the classifier and the noun directly requires a RC structure, which is an optional modifying clause. Previous studies have produced mixed results. Some show that a pre-RC mismatching classifier can facilitate RC processing (Wu, et al., 2012; Chen, et al., 2013), but others argue that the facilitation is found only when a felicitous context is provided (Hsu, et al., 2005, 2006). However, a closer look reveals that the former set of studies used only animate-counting classifiers (e.g. *wei*(位) for humans) and the length between the classifier and the head noun is short like (1b) (with no intervening adverbs), whereas the latter set of studies used mostly inanimate-counting classifiers (e.g., *ke*(棵) for trees) and the length between the classifier and the head noun is long (with 3-4 intervening adverbs). To examine if the length between the classifier and the head noun may affect the parser's ability in utilizing inanimate-counting classifiers to predict RC structure, two self-paced readings experiments that used inanimate-counting classifiers were conducted: Exp.1 with Test paradigm (2) which contained two adverbs (two intervening words) and Exp.2 with Test paradigm (3) which contained a three-word adverbial phrase plus an adverb (four intervening words). Interestingly, the results of both experiments show that the participants read the disambiguating region (embedded verb plus DE) faster in the mismatching classifier conditions than in the matching classifier conditions (Exp.1, n=19, F_1(1, 18)=3.762, p=.068; Exp.2, n=20, F_1(1,19)=3.827, p=0.65). This suggests that the length between the classifier and the head noun does not affect the prediction, and that inanimate-counting mismatching classifiers can facilitate prediction, counter to Hsu et al. (2014)'s proposal that only animate-counting classifiers are effective in RC prediction.

Exp.3 and Exp.4 were run to further understand the failure of facilitation as well as the role of context in assisting the prediction. Exp.3 adopted the test materials used in Hsu et al. (2006) like (4), but without any context. The results replicated Hsu et al. (2006)'s that mismatching classifiers did not facilitate RC prediction (n=32, t=1.39, p = .17) when no felicitous context was provided. We suspect that the failure is related to the variation of the intervening adverbs used. Lastly, Exp.4 examined whether indefinite determiners (like *one-of-the-CL*) combined with a felicitous context like (5) may induce RC prediction. The result is negative (n=26, t < 1), suggesting that, for a context to play a role, it takes a definite article together with the classifier (like *that-CL*), as those used in Hsu et al. (2006). Taken together, our findings provide a clearer picture to the issue of whether a mismatching classifier is an effective cue to RC prediction. Theoretical implications about parsing mechanisms and the roles of grammar and context will be discussed.

(1) (a) na-*wei*   xuexiao   (b)[NP na-*wei*   RC [CP [IP xuexiao yaoqing de]] yanjiangzhe]
     that-CL$_{HUMAN}$ school   *that-CL$_{HUMAN}$*   *school   invite   DE   speaker*
                  'the speaker that the school invites'

(2) **Na-wei/ke**   [nongfu **tebie xixingdi** zaoliao-de]   guoshu zongyu chengshoule.

   that-CL$_{(HUMAN/TREE)}$ farmer special carefully take-care-DE fruit-tree finally get-ripened

   'The fruit-tree that the farmer took care with special care finally got ripened.'

(3) **Na-wei/ke**   [nongfu **yi youxiao fangshi xixingdi** zaoliao -de]   guoshu

   that-CL$_{(HUMAN/TREE)}$ farmer with effective method carefully take-care-DE   fruit-tree

   zongyu chengshoule.

   finally get-ripened

   'The fruit-tree that the farmer took care with special care finally got ripened.'

(4) **Na-wei/ke**   [nongfu **jingchang zai zhoumo** zaoliao-de]   guoshu

   that-CL$_{(HUMAN/TREE)}$ farmer often   at weekend take-care-DE fruit-tree

   zongyu chengshoule.

   finally get-ripened

   'The fruit-tree that the farmer took care of with special care finally got ripened.'

(5) **Zhege nongchang you san-ke   guoshu.**

   This   farm   YOU three-CL$_{TREE}$ fruit-tree

   "This farm has three fruit-trees."

   Qizongyi-ke   [nongfu **jingchang zai zhoumo** zaoliao-de]   guoshu

   One-of-the-CL$_{(/TREE)}$ farmer often   at weekend take-care-DE   fruit-tree

   zongyu chengshoule.

   finally get-ripened

   'One of the fruit-trees that the farmer took care of with special care finally got ripened.'

References:
 Chen, Q., Xu, X., Tan, D., Zhang, J., & Zhong, Y. (2013). Syntactic priming in Chinese sentence
   comprehension: Evidence from event-related potentials. *Brain and Cognition, 83*(1), 142-152.
 Hsu, C.-C. N., Hurewitz, F., & Phillips, C. (2006). *Contextual and syntactic cues for head-final
   relative clauses in Chinese.* Paper presented at the 19th Annual CUNY Conference on Human
   Sentence Processing, The City University of New York, NY.
 Hsu, C.-C. N., Phillips, C., & Yoshida, M. (2005). *Cues for Head-final Relative Clauses in Chinese.*
   Paper presented at the 18th Annual CUNY Conference on Human Sentence Processing, University
   of Arizona, Tucson, AZ.
 Hsu, C.-C., Tsai, S.-H., Yang, C.-L., & Chen, J.-Y. (2014). Processing classifier-noun agreement in a
   long distance: An ERP study on Mandarin Chinese. *Brain & Language, 137*, 14-28.
 Wu, F., Kaiser, E., & Andersen, E. (2009). The effects of classifiers in predicting Chinese relative
   clauses. In M. Grosvald & D. Soares (Eds.), *Proceedings of the western conference on linguistics
   (WECOL)* (pp. 318-329). Davis: University of California.

A Cross-linguistic Comparison of L2 Acquisition of Chinese Applicative Double Object Construction

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Inspired by Cuervo (2003) and Pylkkänen (2008) among others, this paper follows Sun & Li (2010), arguing that a functional Applicative head introduces a non-core indirect object (IO), yielding the Applicative Double Object Construction (DOC; see (1a)) in Chinese. In (1a), the IO is interpreted as Source that loses a once-possessed Theme argument (the direct object; DO) and therefore this DOC is designated Source-DOC. Chinese allows another type of DOC where the IO can only be interpreted as Location, at which the DO is located and with which the DO forms an inalienable relationship. This DOC is designated At-DOC (see (1b)).

Languages allow different types of Applicative DOC. English allows Goal-DOC with the IO being Goal, which is intended to receive the DO and disallows At-DOC (see (2)). Korean allows neither Goal-DOC nor Source-DOC, but allows At-DOC where the IO and DO form an inalienable relationship (see (3)). Spanish, interestingly, allows all three types of DOCs; in addition, unlike Chinese and Korean, Spanish does not limit its At-DOC to an inalienable relationship between the IO and DO (see (4)). Assuming Full Transfer (Schwartz & Sprouse, 1994), learners with different L1s should display different trajectories in their L2 acquisition of Chinese DOCs. Nevertheless, the acquisition might not be as straightforward as it has been just suggested if we take morphological factors and word orders into consideration. For example, Spanish differs from Chinese in requiring a morpheme (i.e., clitic *le*) to license Applicative DOCs; Spanish and Korean differ from Chinese on word orders.

This study conducted both an off-line Acceptability Judgment Task (AJT), testing learners' conscious evaluation, and an online Animation Matching Task (AMT), assessing learners' intuitive interpretation. A total of 117 L2 learners and 20 native speakers participated in the experiment. AJT and AMT results agree that intermediate learners generally make judgment in accordance to their L1s but Spanish speakers reject target DOCs possibly due to the lack of licensing morphemes analogous to *le* even though Spanish also allows Source-DOC and At-DOC. As proficiency increases, learners are found unable to unlearn the L1-based DOC that is not instantiated in Chinese. Also, due to the lack of confirming or disconfirming evidence, the L1-based DOC loses vigour and becomes dormant (Yuan, 2014) in L2 grammars and learners demonstrate indeterminate judgment. On the other hand, learners who have to acquire a new DOC that is not instantiated in L1 are found to develop alternative representations made available by L1 rather than displaying native-like representations. While these findings lend support to Full Transfer, there is no evidence that L1 word order is transferred to L2 DOC as the Computational Complexity Hypothesis (Jakubowicz, 2011) predicts. The mixed results for and against Full Transfer may be explained on the basis of Yang's (2002) Variational Learning, elaborated by Slabakova (2008) into the study of L2 acquisition. To complete the learning model, this study consulted a corpus to analyse the quantitative distribution of grammatical patterns in the input in attempt to provide a unified explanation.

Examples
(1) <u>Chinese</u>
    a. Zhangsan chi-le   **Lili** liang ge pingguo. (Source-DOC)
      Zhangsan eat-PERF   Lili two CL apple
      Lit: '*Zhangsan ate Lili two apples.' Intended: 'Zhangsan ate two of Lili's apples.'
    b. Zhangsan mo-le   **Lili** datui. (At-DOC)
      Zhangsan touch-PERF Lili thigh
      Lit: '*Zhangsan touched Lili thigh.' Intended: 'Zhangsan touched Lili on the thigh.'
(2) <u>English</u>
    a. John baked **Lili** a cake. (Goal-DOC)
    b. *John touched **Lili** thighs. (*At-DOC)
(3) <u>Korean</u>
    a. *Mary-ka   John-ul   kong-ul   tenci-ess-ta. (*Goal-DOC)
      Mary-NOM John-ACC ball-ACC throw-PAST-DECL
      Lit.: 'Mary threw John a ball.'
    b. *John-i   Mary-ul   ton-ul   hwumchi-ess-ta. (*Source-DOC)
      John-NOM Mary-ACC money-ACC steal-PAST-DECL
      Lit.: 'John stole Mary some money.'
    c. Yongsu-ka   Suni-lul   meli-lul   manci-ess-ta. (At-DOC)
      Yongsu-NOM Suni-ACC head-ACC touch-PAST-DECL
      Lit.: 'Yongsu touched Suni head.'
(4) <u>Spanish</u>
    a. Pablo le   diseñó   una falda a Andreína. (Goal-DOC)
      Pablo CL designed a skirt Andreína.DAT
       Lit.: 'Pablo designed Andreína a skirt.'
    b. Pablo le   robó la bicicleta a Andreína. (Source-DOC)
      Pablo CL stole the bicycle Andreína.DAT
      Lit.: 'Pablo stole Andreína the bicycle.'
    c. Pablo le   besó   la frente   a Andreína. (At-DOC with an inalienable relationship)
      Pablo CL kissed the forehead Andreína.DAT
      Lit.: 'Pablo kissed Andreína the forehead.'
    d. Pablo le   lavó   el auto a Andreína. (At-DOC with an alienable relationship)
      Pablo CL washed the car Andreína.DAT
      Lit.: 'Pablo washed Andreína the car.'

References
Cuervo, C. (2003). Datives at Large. PhD Thesis. MIT.
Jakubowicz, C. (2011). Measuring derivational complexity: New evidence from typically developing and SLI learners of L1 French. *Lingua* 121: 339-351.
Montrul, S. (2000). Transitivity alternations in L2 acquisition: Toward a modular view of transfer. *Studies in Second Language Acquisition* 22:229-273.
Pylkkänen, L. (2008). *Introducing Arguments*. Cambridge, MA: MIT Press.
Slabakova, R. (2008). *Meaning in the Second Language*. Berlin: Mouton de Gruyter.
Sun, T. & Y. Li. (2010). Hanyu fei hexin lunyuan yunzhun jiegou chu tan (Licensing non-core arguments in Chinese). *Zhongguo Yuwen* (*Studies of the Chinese Language*) 334: 21-33.
Yang, C. (2002). *Knowledge and Learning in Natural Language*. Oxford: Oxford University Press.
Yuan, B. (2014). "Wh-on-earth" in Chinese speakers' L2 English: Evidence of dormant features. *Second Language Research* 30(4): 515-549.

On the Acquisition of the Argument/Adjunct Asymmetry and the Complex NP Constraint in Japanese

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1. Introduction: This study reports our experimental results showing that Japanese children are aware of the asymmetry between an adjunct *naze* 'why' and other argument wh-words at the age of four with regard to the Complex NP Constraint (CNPC, Ross 1967). In Japanese, *naze* 'why' cannot be interpreted in the complex NP ((1)). Nishigauchi (1990) explained that a covert movement of *naze* 'why' violates CNPC, while *dare* 'who,' *doko* 'where' and *itsu* 'when' can be interpreted in the complex NP ((2) to (4)) because a whole complex NP moves covertly due to its nominal feature (The Pied-piping Analysis). Another explanation with ECP (Chomsky 1986 and Lasnik and Saito 1992) shows that (1) violates ECP because *naze* 'why' is an adjunct, while (2) to (4) do not because these wh-words are arguments. Murasugi and Saito (1992) proposed *where* and *when* are quasi-adjuncts and can have argument status. Both proposals explain CNPC in Japanese with the argument/adjunct asymmetry.

2. Previous acquisition studies: It has been shown that English-speaking children know CNPC (Otsu 1981) and that Japanese-speaking children are sensitive to the adjunct-island constraint early (Kabuto 2007, Sugisaki 2012). Kato (1996) showed Japanese children tended to interpret *dare-ni* 'who-Dative' in the complex NP 75% of the time and *doosite* 'why' in the matrix clause 72.3% of the time. Since the children in Kato (1996) incorrectly interpreted *doosite* 'why' in the complex NP 27.7% of the time, it is not clear whether they have knowledge of CNPC. In our experiment, we included *doko* 'where' and *itsu* 'when' in addition to *dare-ga* 'who-Nom.' We compared children's performances between *naze* 'why' and *dare-ga* 'who-Nom,' *doko* 'where,' *itsu* 'when.'

3. Experiments: We examined 43 monolingual children (16 four-year-olds, 17 five-year-olds, 10 six-year-olds (4;1-6;10)) and 29 adults by showing them short stories ((5)) and asking about two questions for each story ((6) to (9)). D*are-ga* 'who-Nom' and *naze* 'why' were tested first on 21 children. Then, *doko* 'where,' *itsu* 'when' and *naze* 'why' were tested on 22 children. If the children behaved like adults, they would interpret *dare* 'who,' *doko* 'where' and *itsu* 'when' either in the matrix clause or the complex NP and interpret *naze* 'why' only in the matrix clause.

4. Results and discussion: Table 1 shows the percentages of answers in which wh-words were interpreted in the complex NPs. Children correctly interpreted *dare* 'who,' *doko* 'where' and *itsu* 'when' in the complex NPs 53.6%, 48.4% and 52.4% of the time respectively. Even 4-year-olds interpreted them in the complex NPs 56.2%, 42.9%, 33.3% of the time. Hence, our results show that they know these wh-words can be interpreted either in matrix clauses or complex NPs. On the other hand, the children interpreted *naze* 'why' in the matrix clauses 100% of the time and no one interpreted it in the complex NPs (0/58 responses). We conclude that they know *naze* 'why' cannot be interpreted in complex NPs. Therefore, our results clearly show that Japanese children know the argument/adjunct asymmetry regarding CNPC at the age of four.

(1)* Kimi-wa [NP Ken-ga   naze   kai-ta   hon]-o   yomi-masi-ta   ka?
you-Top   Ken-Nom   why   write-Past   book-Acc   read-Polite-Past   Q
'You read books that Ken wrote why?'

(2) Kimi-wa [NP dare-ga   kai-ta   hon]-o   yomi-masi-ta   ka?
you-Top   who-Nom   write-Past   book-Acc   read-Polite-Past   Q
'You read books that who wrote?' (Nishigauchi, 1990, p.40)

(3) Kimi-wa [NP Mary-ga   doko-de   kai-ta   hon]-o   yomi-masi-ta   ka?
you-Top   Mary-Nom   where   write-Past   book-Acc   read-Polite-Past   Q
'You read books that Mary wrote where?'

(4) Kimi-wa [NP Mary-ga   itsu   kai-ta   hon]-o   yomi-masi-ta   ka?
you-Top   Mary-Nom   when   write-Past   book-Acc   read-Polite-Past   Q
'You read books that Mary wrote when?'

(5) <u>An example of the sample story</u>: A dog and a cat were painting pictures by the sea. Then, the cat spilled paint on her dress, so she went home quickly. As soon as she arrived at her house, she washed her dress. Although she washed it many times, the stain did not come out. While she was washing it, her mother came home from shopping. The cat thought that her mother would find the dirty dress and get upset. She hid it under the table quickly so that her mother would not see it.

(6)Test question 1:   Itsu   yogosi-ta   wanpiisu-o   nekosan-ga   ara-tta   no?
when   dirty-Past   dress-Acc   cat-Nom   wash-Past   Q
(i) 'The cat washed the dress that she dirtied when?'
(ii) 'When did the cat wash the dress that she dirtied?'

(7) Test question 2:   Naze   ara-tta   wanpiisu-o   nekosan-ga   kakusi-ta   no?
why   wash-Past   dress-Acc   cat-Nom   hide-Past   Q
'Why did the cat hide the dress that she washed?'

(8) Test question 3:   Dare-ga   hakon-da   penki-o   nut-ta   no?
who-Nom   carry-Past   paint-Acc   paint-Past   Q
(i) '(The dog) painted with the paint that who carried?'
(ii) 'Who painted with the paint that (the cat) carried?'

(9) Test question 4:   Doko-ni   otosi-ta   boushi-o kumakun-ga hosi-ta   no?
where-at   drop-Past   hat-Acc   bear-Nom   dry-Past   Q
(i) 'The bear dried the hat that he dropped where?'
(ii) 'Where did the bear dry the hat that he dropped?'

Table 1: The percentages of answers in which wh-words were interpreted in the complex NPs

Age	*Dare* 'who'	*Doko* 'where'	*Itsu* 'when'	*Naze* 'why'
4-year-olds	56.2% (9/16)	42.9% (6/14)	33.3% (2/6)	0% (0/18)
5-year-olds	45.8% (11/24)	50.0% (7/14)	60.0% (6/10)	0% (0/26)
6-year-olds	62.5% (10/16)	66.7% (2/3)	60.0% (3/5)	0% (0/14)
Total	53.6% (30/56)	48.4% (15/31)	52.4% (11/21)	0% (0/58)
Adults	58.3% (14/24)	79.4% (27/34)	52.9% (18/34)	1.7% (1/58)

<Selected References>
Kato, Naomi. 1996. "The Acquisition of Wh-question in Japanese Children: An Experimental Study." Paper presented at the COE Workshop at Shirakawa.
Lasnik, Howard and Mamoru Saito. 1992. *Move α: Conditions on Its Application and Output*. The MIT Press.
Murasugi, Keiko and Mamoru Saito. 1992. "Quasi-adjuncts as sentential arguments." *The Proceedings of WECOL* 22, 251–261.
Nishigauchi, Taisuke. 1990. *Quantification in the Theory of Grammar*, Dordrecht: Kluwer Academic Publishers.
Sugisaki, Koji. 2012. "LF Wh-movement and its Locality Constraints in Child Japanese." *Language Acquisition* 19, 174-181.

Japanese Passives and the Nature of Syntactic Priming:
An Experimental Investigation

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In some recent studies, syntactic priming is used as a probe into young children's abstract syntactic representations. For example, [1][2] found that hearing a short passive sentence (e.g., The girls are being shocked) primed subsequent production of a full-passive (e.g., The king is being scratched by the tiger) by 3 and 4 year-old English-speaking children. Based on the finding, they argued that children assign the common abstract syntactic representations to both short and full passives, contrary to [3]'s hypothesis that early short passives have a distinct, adjectival structure. One important premise in this argument is that syntactic priming is contingent upon sharing an abstract syntactic representation. In the present study, we assess the validity of this premise, using Japanese "gapless passive" as a crucial test case.

Gapless passives in Japanese, as shown in (1), share the surface morphological properties with transitive passives in (2). However, the main predicate of a gapless passive sentence is intransitive, and the surface subject is not thematically related to the predicate. Theoretical literature (e.g., [4][5]) posits a distinct syntactic representation for gapless passives, in which the subject is adjoined to its surface position, rather than deriving from the internal-argument position. Therefore, if the underlying syntactic representation of prime sentences affects syntactic priming, it is predicted that gapless passive primes and transitive passive primes should yield different priming effects for subsequent production of passive sentences. Our experiment is designed to test this prediction.

Thirty-eight Japanese children (3;03 - 6;03, Mean: 4;07) and 23 Japanese adults participated in the experiment. The participant and the experimenter took turns to give a verbal description for a picture depicting an event that involved cartoon animals. The experimenter's descriptions served as primes, and the subsequent descriptions of a transitive event by the participant were recorded and analyzed. In order to directly compare the magnitudes of priming effects, we employed a within-participant design, and the prime types tested were; (i) Active, (ii) Transitive Full Passive, (iii) Gapless Passive. There were 18 crucial trials per participant, interspersed by filler trials.

Table 1 summarizes the number and percentage of the passive descriptions that the participants produced per each prime condition. We analyzed the number of passive descriptions relative to all other types of descriptions using Linear Mixed-Effects models with binomial function separately for children and adults. The analysis showed that both children ($p<0.05$) and adults ($p<0.001$) were more likely to produce a passive description after hearing either type of passive prime than after hearing an active prime. Furthermore, the magnitudes of priming effects showed no difference across the two types of passive primes. In other words, we found no effects of the abstract syntactic representations on the "syntactic" priming observed in the experiment. Therefore, our results cast serious doubt on the premise assumed in the previous studies, suggesting that "syntactic" priming can occur without a common syntactic representation. Further implication of this study is that various different factors, such as morphological and/or semantic similarities, can contribute to priming of a certain specific construction.

Examples

(1) Taro-ga   Hanako-ni   nak-are-ta   (Gapless passive)

Taro-NOM   Hanako-by   cry-Passive-PAST

Lit. "Taro was cried by Hanako"

(2) Taro-ga   Hanako-ni   tatak-are-ta   (Transitive passive)

Taro-NOM   Hanako-by   slap-Passive-PAST

"Taro was slapped by Hanako"

Table 1: The number and proportion of passive descriptions in the target trials

Types of prime		Active		Transitive Full Passive		Gapless Passive	
		Children	Adults	Children	Adults	Children	Adults
# of passives (%)		37/228 (16.2%)	37/138 (26.8%)	*55/228 (24.1%)	***70/138 (50.7%)	*54/228 (23.6%)	***69/138 (50%)
Breakdown of passives	# of full passives(%)	16 (7%)	37 (26.8%)	*28 (12.2%)	***70 (50.7%)	*28 (12.2%)	***69 (50%)
	# of short passives(%)	16 (7%)	N/A (0%)	6 (2.6%)	N/A (0%)	7 (3%)	N/A (0%)
	# of other passives(%)	5 (2.1%)	N/A (0%)	21 (9.2%)	N/A (0%)	19 (8.3%)	N/A (0%)

References

[1] Messenger et al.(2011) Evidence for (shared) abstract structure underlying children's short and full passives. *Cognition* 121 (2). 268-274.

[2] Messenger et al.(2008). English-Speaking Children's Early Passives: Evidence from Syntactic Priming. In H. Chan, H. Jacob, & E. Kapia, (Eds.) *BUCLD 32: Proceedings of the 32nd annual Boston University Conference on Language Development.* Cascadilla Press: 275-286.

[3] Borer and Wexler (1987) The maturation of syntax. In Roeper & Williams (eds.) *Parameter Setting.* Dordrecht; Reidel.

[4] Miyagawa (1989) *Syntax and Semantics 22: Structure and case marking in Japanese.* San Diego: Academic Press.

[5] Kubo (1992) Japanese passives. *Working papers of the Department of the Language and Cultures 23, 231-301.* University of Hokkaido.

Korean L2 Learners' Online Processing of *Wh*-dependency in English and the Role of the Grammar and Working Memory

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This study examined whether L2 learners display qualitatively similar/different patterns in the processing of *wh*-dependencies in grammatically licensed non-island and unlicensed island contexts. Previous studies have revealed that in light of filler integration effects (FIE(s)), both L1 speakers and adult L2 learners of English showed a slowdown in reading time (RT) at the final gap position of non-island *wh*-question sentences, pointing to the fact that both L1 speakers and L2 learners were accurately integrating the *wh*-filler into the final gap position (cf. Marinis et al., 2005). However, Kim et al. (2015) has recently shown that unlike Spanish English learners, Korean learners of English (KLEs) were ready to posit gaps within a grammatically illicit island (the relative clause island) as well as a grammatically licit non-island. In the present study with 40 KLEs by using four types of *wh*-dependency (one licit long-distance (LD) and three illicit islands in (1)-(4) of the next page), we have found, in line with Kim et al. (2015) and Marinis et al. (2005), that KLEs engaged in integrating gaps within grammatically licit non-island structure. Specifically, as in [Table 1], in the non-island sentences a significant FIE (i.e., a significant slowdown in RT) arose in the spillover region following the direct object of the embedded verb where filler integration occurred.

Likewise, the present study found a significant FIE in the *whether* island as in [Table 1]. This points to the fact that KLEs also actively posited and integrated the *wh*-filler into the grammatically licit and illicit structures. The inability for KLEs to distinguish non-island from island in filler integration apparently supports Kim et al.'s (2015) finding that unlike L1 speakers, they cannot use syntactic information during the processing of *wh*-dependency within the *whether* island. However, this conclusion is tentative because KLEs were shown not to display FIEs in adjunct and complex NP islands (TypeAI and TypeCNP). The results from these islands are in line with those in several previous studies that have shown that L2 learners do not attempt to resolve *wh*-dependencies in grammatically unlicensed islands (Omaki and Schulz, 2011; Felser et al., 2012; Kim et al., 2015 for Spanish English learners).

This study also probed into the island vs. non-island distinction by inspecting the relationship between individual working memory (WM) capacity (measured by reading span and n-back in our experiments) and FIEs in KLEs. If individuals with better processing capacity are able to resolve *wh*-dependencies in islands, it would be compatible with the processing account proposed by Hofmeister and Sag (2010). However, the grammatical account does not expect such a relationship within islands as the parser should simply not posit a gap there. The present study in [Table 2] found that for KLEs there was no relationship between *wh*-dependency resolution and individual WM capacity in grammatically licit and illicit structures, suggesting that, even for L2 learners (unlike L1 speakers, as shown by Hofmeister and Sag (2010, Experiment2)), processing resources do not play any significant role in the process of integrating the *wh*-filler into its gap position.

examples, references, tables and figures

(1) **Long Distance (LD) *Wh*-dependency**

a. The cameraman/① mentioned/② that/③ the mayor/④ honored/⑤ a soldier/⑥ before the fireworks/⑦.

b. Which soldier/① did the cameraman/② mention/③ that/④ the mayor/⑤ honored/⑥ ○ before the fireworks/⑦?

(2) **Complex NP (CNP) Island Constraint**

a. The chef/① heard/② the remark that/③ the trainee/④ baked/⑤ a pie/⑥ in the restaurant/⑦.

b. Which pie/① did the chef/② hear/③ the remark that/④ the trainee/⑤ baked/⑥ ○ in the restaurant/⑦?

(3) ***Whether* Island Constraint**

a. The detective/① wonders/② whether/③ the shoplifter/④ took/⑤ a necklace/⑥ from the shop/⑦.

b. Which necklace/① does the detective/② wonder/③ whether/④ the shoplifter/⑤ took/⑥ ○ from the shop/ ⑦?

(4) **Adjunct Island (AI) Constraint**

a. The boss/① left the office/② after/③ his secretary/④ brought/⑤ a briefcase/⑥ to the desk/⑦.

b. Which briefcase/① did the boss/② leave the office/③ after/④ his secretary/⑤ brought/⑥ ○ to the desk/⑦?

TABLE 1. The linear mixed-effect regression analysis at region 7: W7.RT ~ WM + Extraction * Type
        [The reference level: Condition A of TypeLD]

Fixed effects:

	Estimate	SE	df	t value	Pr(>|t|)
(Intercept)	1024.545	224.824	6.150	4.557	0.00364**
Extraction:TypeAI	226.966	98.577	63.140	2.302	0.02462*
Extraction:TypeCNP	133.808	98.270	62.360	1.362	0.17821
Extraction:Type*Whether*	-186.513	98.075	61.870	-1.902	0.06186.

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

TABLE 2. The linear mixed-effect regression analysis at region 7: W7.RT ~ WM * Extraction * Type

Fixed effects:

	Estimate	SE	df	t value	Pr(>|t|)
(Intercept)	950.552	233.547	12.000	4.070	0.00156**
WM:Extraction:TypeAI	7.539	9.685	2858.000	0.778	0.43639
WM:Extraction:TypeCNP	-13.135	7.471	2855.400	-1.758	0.07884
WM:Extraction:TypeWhether	9.689	9.498	2854.700	1.020	0.30779

Selected references:

Felser, C., I. Cunnings, C. Batterham, and H. Clahsen 2012. The timing of island effects in nonnative sentence processing. Studies in Second Language Acquisition 34: 67-98.

Hofmeister, P. and I. A. Sag. 2010. Cognitive constraints and island effects. Language 86.2: 366-415.

Kim, E., S. Baek, and A. Tremblay. 2015. The role of island constraints in second language sentence processing. Language Acquisition 22: 1-33.

Marinis, T., L. Roberts, C. Felser and H. Clahsen. 2005. Gaps in second language sentence processing. Studies in Second Language Acquisition 27: 53-78.

Omaki, A. and B. Schulz. 2011. Filler-gap dependencies and island constraints in second language sentence processing. Studies in Second Language Acquisition 33.4: 563-588.

Referent Introducing Strategies in Advanced L2 Usage: A Parallel Study on French Learners of Chinese and Chinese Learners of French

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This study focuses on the acquisition of pragmatic principles relating to the structuring of information at syntactic level. Specifically, we observe the discourse organization by Chinese learners of L2 French and French learners of L2 Chinese, analyzing how they manage the syntactic patterns aiming to introduce referential entities into discourse.

The research is based on the fact that French and Chinese use very similar syntactic strategies to fulfill this scope. In French the common pattern is the bi-clausal *avoir* 'have' construction, while in Chinese new referents are encoded in presentational structures introduced by the semantically-related verb *yǒu* 'have'. Based on a video-retelling task we collected oral productions from two groups of 10 advanced learners each, who produced a narration of the story in their source and target language. In total we dispose of four *corpora*: French L1/L2; Chinese L1/L2. The visual stimulus consists in a sequence of Charlie Chaplin's silent movie *Modern Times* and the percentages are calculated on the total number of syntactic structures encoding the first mention of a referent in the narration.

The data show that whilst in both Chinese and French L1, as expected, HAVE-structures are the most frequent syntactic device used to fulfill the pragmatic function of referent-introducing (around 30% of the results), learners' productions diverge in many aspects. Chinese learners use the HAVE-presentational structures to a lesser extent, more often choosing the 'unmarked' S-V word-order (47%), even in contexts clearly pragmatically inappropriate.

Conversely, French speakers of Chinese L2 make an extensive use of HAVE-structures (more than 60%), even in those cases where native Chinese speakers would rather employ the passive construction: *you*-constructions are adopted as ready-to-use devices that don't request a great amount of syntactic planning – contrary to the French *avoir*-structures, and such device in Chinese L2 embodies the presentational function which is carried by a more diversified inventory of constructions in French L1. Lastly, French learners of Chinese use the HAVE-structures to encode reactivated referents, similarly to the function found in L1 French and resulting in an inappropriate usage in Chinese L2. On the other hand, Chinese learners never assign this function to the HAVE-structures in the target language but use instead various morphological devices such as demonstrative or personal pronouns to mark reintroduced referents. This shows that although the learners are highly proficient, their patterns in information selection still partially reflect native language principles. In particular, they are not able to assign (or dissociate) a pragmatic function to the structure in the target language that is (not) part of the pragmatic inventory linked to the corresponding form in their source language. The form-function pairing similarity found in French and Chinese L1 in this regard may influence learners' productions, in that it makes less salient the need for a conceptual rearrangement. The acquisition of this type of complex knowledge requires a subtle understanding of the pragmatic differences between the functions related to the syntactic structures of the source and the target language, thus representing the ultimate challenge for a successful L2 acquisition.

Examples (I). Newly introduced referents:

1） CHL1 有一个先生从车子里拿出了一些东西西
        Yǒu _yí-ge xiānsheng cóng chēzi=lǐ ná-chu-le yìxiē dōngxi_
        HAVE one-CL gentleman from car=in take-out-PFV some stuff
        Lit: 'There is a gentleman who takes some stuffs out of the car'

    FRL1 _A ce moment-là **il y a** le camion **qui** vient livrer les gâteaux_
        At that moment HAVE the truck that comes dispatch the pastries
        Lit: 'At that moment there is the truck dispatching the pastries'

2） FRL2 _Derrière elle **il y avait** une femme plus âgée **Ø** est arrivée_
        Behind she HAD a lady more aged is arrived
        Lit: 'Behind her **there was** an older lady **Ø** arrived'
    FRL2 _Un jour au vitrine d'une boulangerie **il y a** une jeune fille **elle** a faim_
        One day at window of a bakery HAVE a young lady she is hungry
        Lit: 'One day, near a bakery window **there is** a young lady **she** is hungry'

3） CHL1 她被一个路人看到了
        tā **bèi** lìngwài yí-ge nǔrén kàn-dao-le
        she BY another one-CL woman see-RES-PFV
        Lit: 'She is seen **by** another woman'
    CHL2 在那个店旁边有另外的女的看这个事情
        Zài nà-ge diàn pángbiān **yǒu** lìngwài de nǔde kàn zhè-ge shìqíng
        At that-CL shop near HAVE another DE woman see this-CL matter
        Lit: 'Near that shop **there is** another woman who sees this matter'

Examples (II). Reactivated referents:

4） CHL1 这个女生她就在外面等他
        Zhè-ge _nǔshēng **tā** jiù zài wàimiàn děng tā_
        That-CL lady she then is outside wait he
        Lit: '**This** lady **she**'s outside waiting for him'
    FRL1 **_Il y a_** _la fille **qui** l' attend à la sortie_
        HAVE the lady that him wait at the exit
        Lit: '**There is** the lady **who** waits for him at the exit'

5） CHL2 有这个女人等他
        yǒu _zhè-ge nǔrén děng tā_
        HAVE this-CL lady wait he
        Lit: '**There is** this lady waiting for him'
    FRL2 **_Cette_** _fille **elle** l' attendait dehors_
        This lady she him was.waiting outside
        Lit: '**This** lady **she** was waiting for him outside'

Selected bibliography

Bassetti, Benedetta & Vivian J. Cook. 2011. Relating language and cognition: The second language user. In Vivian Cook & Benedetta Bassetti (eds.), _Language and bilingual cognition_, 143–190. New York: Psychology Press.

Bylund, Emanuel & Scott Jarvis. 2011. L2 effects on L1 event conceptualization. _Bilingualism: Language and cognition_ 14(1). 47–59.

Cook, Vivian J. 1981. Some uses for second language learning research. _Annals of the New York Academy of Sciences_ 379. 251–258.

Flecken, Monique. 2011b. Macro-planning in narratives: Assessing bilingual attainment. _International journal of bilingualism_ 15(2). 164–186.

Kroll, Judith F., & Natasha Tokowicz. 2005. Models of bilingual representation and processing. In Judith F. Kroll & Annette M. B. de Groot (eds.), _Handbook of bilingualism: psycholinguistic approaches_, 531–553. Oxford: Oxford University Press.

Levelt, Willem. 1989. _Speaking: From intention to articulation._ Cambridge: MIT Press.

Lucy, John A. 1992. _Grammatical categories and cognition: A case study of the linguistic relativity hypothesis._ Cambridge: Cambridge University Press.

Second Language Incremental Comprehension: Evidence from Japanese Passives

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In language comprehension, we can often guess what comes next in a sentence prior to the language input. Psycholinguistic research has provided substantial evidence for the prevalence of predictive processing by native speakers (Altman & Kamide, 1999). However, L2 learners appear to be limited in their ability to generate predictions (Grüter, Rohde & Schafer, 2016). Further investigations of the conditions under which nonnative speakers are or are not successful in predictive processing is needed. The present study considered case-marker-driven predictive processing in Japanese, an area in which the effects of predictions have not been examined in L2 processing.

In Japanese, all arguments appear before the verb. Nevertheless, Japanese comprehenders process linguistic input incrementally before encountering the verb. Postpositional case markers serve as cues for thematic role assignments and, as such, guide incremental processing for native speakers (Kamide, Altmann & Haywood, 2003). However, case markers are known to be difficult for L2 learners of Japanese. This deficit could impede the learners' use of case markers in real-time processing.

This study examined the extent to which L2 learners incrementally assign thematic roles to preverbal nouns and predictively activate a structural representation of the upcoming verb voice before encountering the verb. This study further considered the process in which verb morphology information feeds into comprehension. The processing patterns of active and passive sentences, as in examples (1) and (2), were compared. We used the visual-world paradigm, with the two-choice picture-identification method, in which one picture matched the active reading, and the other matched the passive reading. Analyses were conducted on the participants' looks to the active picture scenes during the audio presentation of the adverbial phrase (i.e., *hidoku* in the examples). We also conducted an onset-contingent analysis to track the participants' eye movements separately for target-initial trials and distractor-initial trials. These trials were divided based on the fixation location at the onset of the verb. For both analyses, we used growth curve analysis to assess the time course of processing (Mirman, Dixon & Magnuson, 2008).

The results demonstrated that the native speakers processed sentences incrementally and integrated preverbal thematic roles with a predicted verb voice. However, the L2 learners were less committal in assigning thematic roles to the preverbal nouns. The learners' processing patterns show that compared to the native speakers, the learners were less likely to look at the active picture scenes in the active condition, and were more likely to look at the active picture scenes in the passive condition, suggesting a lack of preverbal structural commitment by the L2 learners. Nevertheless, the L2 learners were able to integrate information from the passive morpheme. The results from the onset-contingency analysis showed that as soon as the learners received the information posed by the passive morpheme, they discriminated the two picture scenes sharply. The results revealed L1-L2 differences in the use of linguistic cues; L2 learners are less efficient in using this cue, but they use information posed by verbs to compensate their reduced ability in preverbal processing.

Examples:

(1) *onnanohito-ga   otokonohito-o   hidoku   tatai-ta-sou-desu*
    woman-NOM   man-ACC   badly   hit-PAST-HSY-COP
    'I heard that the woman badly hit the man'

(2) *onnanohito-ga   otokonohito-ni   hidoku   tatak-are-ta-sou-desu*
    woman-NOM   man-DAT   badly   hit-PASS-PAST-HSY-COP
    'I heard that the woman was badly hit by the man'

Figure 1. The proportions of fixation to the active picture.
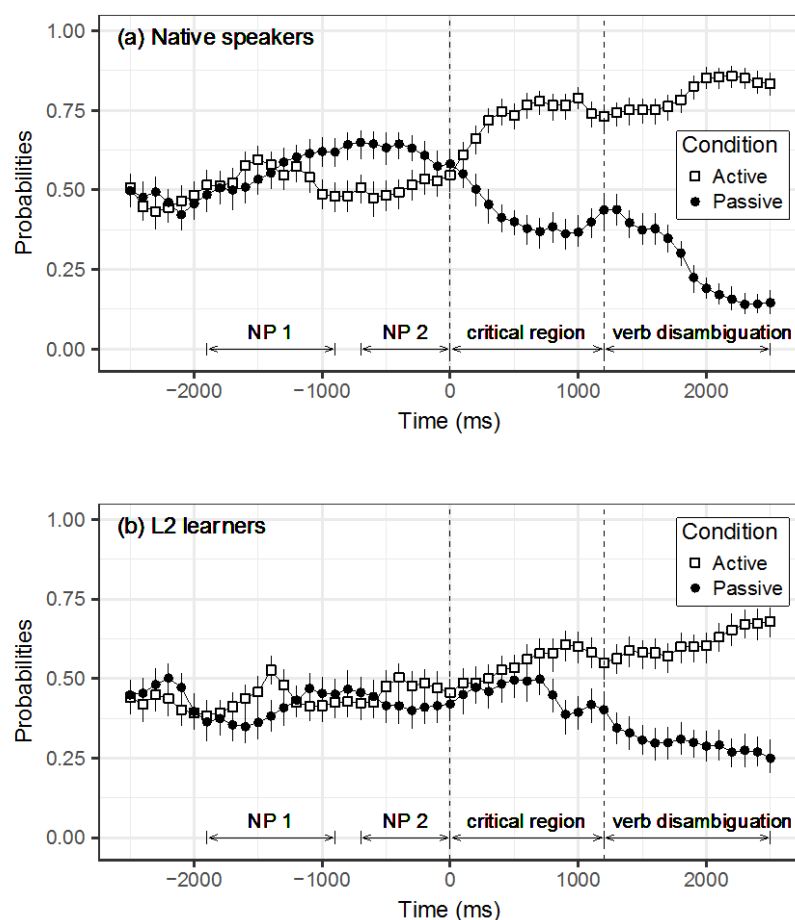
References

Altmann, G., & Kamide, Y. (1999). Incremental interpretation at verbs: Restricting the domain of subsequent reference. *Cognition*, *73*, 247–264.

Grüter, T. Rohde, H. & Schafer, A. J. (2016). Coreference and discourse coherence in L2: The roles of grammatical aspect and referential form. *Linguistic Approaches to Bilingualism.* Advance online publication. doi: 10.1075/lab.15011.gru

Kamide, Y., Altmann, G. T. M., & Haywood, S. L. (2003). The time-course of prediction in incremental sentence processing: Evidence from anticipatory eye movements. *Journal of Memory and Language*, *49*, 133–156.

Mirman, D., Dixon, J. A., & Magnuson, J. S. (2008). Statistical and computational models of the visual world paradigm: Growth curves and individual differences. *Journal of Memory and Language, 59*, 475–494.

**Root Infinitive Analogues in Asian Child Languages and
the Implications for Minimalist Theory**

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An impressive number of acquisition studies indicate that very young children go through the Root Infinitive (Analogue) stage (=RI(A) stage) where the utterances systematically lack tense/Case-related elements. Schütze and Wexler (1996) propose the AGR/TNS Omission Model (=ATOM), which states that children in the RI stage omit either AGR or TNS or neither, and hence, occasionally, verbs are not morphologically merged with tense, and subjects are erroneously Cased marked in English.[[1]]

We first examine the RIA form in Asian child languages and support the hypothesis proposed by Murasugi, Nakatani and Fuji (2010) that the RIAs in the languages may choose surrogate infinitives (non-finite forms or certain finite forms), but not Infinitives (e.g., Dutch, French) nor bare verbs (e.g., English, Chinese). They are eventive verbs with such typical semantic properties as Modal Reference Effects (Hoekstra and Hyams 1998). ([2])

Furthermore, our longitudinal analysis of 5 Japanese-acquiring children (1;05-3;00) indicate that tense-related elements such as rich conjugation of verbs and the Nominative Case markers are produced after 24 months of age.([3]) In Korean and Japanese, Nominative Case markers are not/erroneously produced with the RIAs (Kim and Phillips, 1998; Sawada and Murasugi 2010) [[4]] Likewise, Romanian-acquiring children produce bare subjunctive forms as RIAs before they use an adult-like subjunctive form. ([5])(Avram and Coene 2008)

To provide explanation for the data, we extend the proposal of Murasugi (to appear) and argue that the hypothesis of ATOM can be reinterpreted in more recent linguistic theory that the child system of φ-feature agreement is deficient at the RI(A) stage, and the analysis provides interesting implications for the Minimalist Program. Chomsky (2013) proposes that the operation Merge, which combines two elements α and β into {α,β}, must accompany an algorithm that specifies the nature of the formed object. In the labeling process, φ-feature agreement plays a crucial role, and Case is necessary for φ-feature agreement. ([6]) Saito (2014), however, raises a question regarding how this algorithm works for languages such as adult Japanese which lacks φ-feature agreement, and proposes that Japanese-type Case is an anti-labeling device: Case marker serves as anti-labeling device that makes a constituent invisible for the labeling, and that is why the DP scrambling as in (7) is allowed in Japanese.

Given Saito's (2014) analysis, we expect, then, that when the system of φ-feature agreement is deficient, English-acquiring children in the RI Stage also 'erroneously' scramble DPs just like the case in adult Japanese, and the expectation is actually met. It has been widely known that English-speaking children at around 18-24 months occasionally produce the utterances where subject is absent and the object precedes the verb which selects it ([8]). Thus, the deficiency in Case-and Tense-marking, the "erroneous" scrambled sentences, and the null-argument properties observed at the stage of RI(A)s, are readily accounted for by assuming (i) the child-specific system of φ-feature, or the system whose spirit is consistent with ATOM (Schütze and Wexler 1996), and (ii) Saito's (2014) proposal that structural Case markers serve as anti-labeling device.

(1) a. Eve sit floor (1;07) (Brown 1973) b. *Her too cold* (2;01) (Pierce 1992)

(2) a. *#Ai-ta. Ai-ta* (1;07) (Adult form (volition/request): *ake-ru/ake-te*)
    open-past open-past '(I) want (you) to open (the cabinet).'
  b. *#Mek -e emma* (2;0) (Adult (propositive): *mek-ca*)
    Eat- declarative mother 'Let's eat, Mommy.' (Kim and Phillips, 1998)

(3) a. *Moko-tyan-*no gyuunyuu-*no hosii* (2;0) (Adult form: *ga* (Nominative))
    Moko-ms. –Gen1 milk   -Gen want (Gen=Genitive) 'Moko wants milk.'
  b. *Watasi-*ni katajukeru* (2;0) (Adult form: *ga* (Nominative))
    I   -Dat clean (it) (Dat=Dative) 'I will clean it up.'

(4) a. *Akete* (Itsuki, 2;03)
    Open 'Please open it.'
  b. *Paashii-ga haitteru* (Itsuki, 2;03)
    Percy -Nom is-inside 'There is Percy in the bag.' (Nom=Nominative)

(5) Fiarba vinu-n cupe
  Boil.Subjunctive.3rd sg. wine in bowls.
  'Let the wine boil in bowls.' (Avram and Coene, 2007)

(6) The Labeling Algorithm: Merge →Labeling →φ-feature agreement →Case
  '→' in (5) means 'requires'.   (Saito 2014)

(7) a. Ken-ga Okaasan-o tataku
    -Nom mother -Accusative hit 'Ken hits Mother.'
  b. Okaasan-o Ken-ga tataku (Scrambled Sentence)
    mother -Accusative -Nom hit '*Lit*. Mother, Ken hits.'

(8) a. *Balloon throw*(for 'throw balloon' Gia 1;07) (Bloom 1970:86)
  b. *Kimmy kick*(for 'kick Kimmy' Kendall 1;10) (Brain 1976:15)
  c. *book read*(for 'read book' Susan 1;10) (Miller and Ervin 1964)
  d. *Doggie sew (for 'sew doggie'*Kendall 1;11) (Bowerman 1973)

Selected References:

Avram, Larisa and Martine Coene. (2007) "The root infinitive Stage in a Null Subject
    Language: RFomancein the Balkans." BWPL. 231-242. La Tipografia Editurii Universitatii din
    Bucuresti.

Bloom, L. (1970) *Language Development.*Cambridge,Massachusetts: MIT Press.

Chomsky, N. (2013) "Problems of Projection."*Lingua*130. 33-49.

Kim, M, and C. Phillips (1998) "Complex Verb Constructions in Child Korean: Overt Markers of
    Covert Functional Structure." *BUCLD* 22. 430-441.

Hoekstra, T. & Hyams, N. (1998) "Aspects of Root Infinitives." *Lingua* 106. 81-112.

Murasugi, K. (to appear) "Very Early Utterances in Child language: Implications for the Minimalist
    Theory." To appear in Tsing Hua Journal of Chinese Studies.

Murasugi, K, T. Nakatani, and C. Fuji (2010) "The Roots of Root Infinitive Analogues: The
    Surrogate Verb Forms Common in Adult and Child Grammars" *BUCLD* 34 *Supplement*.

Schütze, C. T. and K. Wexler (1996) "Subject Case Licensing and English Root Infinitives." *BUCLD*
    20 Proceedings. 670-681. Somerville, Massachusetts: Cascadilla
    Press.

Saito, M. (2014) "Case and Labeling in a Language without φ-feature." In *On Peripheries,* ed.
    A.Cardinaletti, G.Cinque and Y.Endo. 269-297.Tokyo: Hituji Shobo.

Japanese EFL Learners' Interpretations of Reflexives and Pronouns in Control Constructions

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This study examines Japanese EFL learners' (JELs) interpretations of reflexives (e.g., *himself*) and pronouns (e.g., *him*), in English control constructions. Shirahata et al. (2015) report JELs' reflexive and pronominal interpretations in English object control sentences. They showed their understanding of disjointness for pronouns earlier than locality for reflexives. Shirahata et al. claimed that the delayed acquisition of locality was due to the insufficient understanding of an infinitive as a clause and the antecedent selection by *zibun*, i.e., L1 transfer (subject-orientation). However, subsequent studies such as Yoshimura et al. (2015), Nakayama et al. (2016), and Yoshimura et al. (2016) observed that JELs seem to acquire the control structures relatively early. This is because they already have the EPP, the PRO subject, and linguistic ways of avoiding intervention like the smuggling operation (Collins 2005) in their L1 grammar. Therefore, this study looks at JELs' interpretations of reflexives and pronouns in both subject (SC) and object control (OC) sentences again, but with quantifiers in the test sentences. This is to increase computational demands, which is different from Shirahata et al.'s study that used proper nouns and singular referential nouns.

Eighty-four JELs and 22 Native Speakers (NS) of English participated in this study. Each participant read control sentences and answered the corresponding questions identifying the antecedents of reflexives and pronouns. The multiple-choice questionnaire included 4 SC sentences and 4 OC sentences with non-quantifier antecedents (total 38 sentences, but here we disregard the ambiguous sentences and those that are irrelevant to the current focus). See the example sentences (1)-(4).

The JELs were divided into three groups based on their TOEIC scores (Low Ave. TOEIC 343.6; Intermediate 466.6; Advanced 655.5) and these groups were significantly different in their scores ($F(2,81)=165.561$, $p<.000$). Table 1 presents a summary of the correct responses by group. A 4 (groups) x 2 (SC/OC) x 2 (reflexives/pronouns) ANOVA on the correct responses revealed significant main effects on group ($F(3, 824)=16.304$, $p<.000$) and sentence type ($F(1, 824)=49.991$, $p<.000$). There was a significant interaction between group and sentence type ($F(3, 824)=5.083$, $p<.002$), group and anaphor type ($F(3, 824)=2.846$, $p<.037$), sentence and anaphor types ($F(1, 824)=7.338$, $p<.007$), but no three-way interaction evoked statistically significant difference.

JELs did well on the OC sentences regardless of the anaphoric type, and the Low group performed rather poorly in both SC anaphoric types. The other two learner groups also had difficulty with the SC reflexives. Post-hoc tests revealed that the Low group was significantly different from all other groups in regard to the SC, and all learners' groups did significantly worse than the NS group in the reflexives. The latter mainly comes from the SC sentences. The current results suggest that JELs have the correct binding knowledge as all learner groups did well on the OC sentences, and the poor performances on the SC reflexives by JELs can be explained if we consider that their SC verb lexical knowledge was less firm and the LF quantifier scope interfered with the correct identification of PRO controller, creating erroneous reflexive binding.

Sample test sentences (Answer=underlined)

(1) Subject Control with a reflexive
The homestay students promised all the host families to make themselves comfortable at their houses.
        [Who does "themselves" refer to?]
<u>The homestay students</u>   all the host families   both   I don't know

(2) Subject Control with a pronoun
Each teacher promised the librarian to bring him a book to donate.
        [Who does "him" refer to?]
Each teacher   <u>the librarian</u>   both   I don't know

(3) Object Control with a reflexive
All the doctors advised the patients to wash themselves in warm water.
        [Who does "themselves" refer to?]
All the doctors   <u>the patients</u>   both   I don't know

(4) Object Control with a pronoun
The nurse requested each patient to report to her.
        [Who does "her" refer to?]
<u>The nurse</u>   each patient   both   I don't know

Table 1. Proportions of correct responses by group and sentence type

GROUP	SC			OC			total		
	Reflexive	Pronoun	Ave.	Ref.	Pro.	Ave.	Ref.	Pro.	Ave.
Low (N=28)	.70	.61	.65	.93	.84	.88	.81	.72	.77
Intermediate (N=28)	.67	.82	.75	1.0	.89	.95	.84	.86	.85
Advanced (N=28)	.70	.88	.79	.98	.98	.98	.85	.93	.89
Control (N=22)	.98	1.0	.99	1.0	.98	.99	.99	.99	.99

References
Collins, C. (2005) A smuggling approach to raising in English. *Linguistics Inquiry*, *36*, 289–298.
Nakayama, M., N. Yoshimura, and A. Fujimori (2016) Control constructions produced by Japanese speaking learners of English. *Kyushu University Papers in Linguistic*s 36 (*Papers in memory of the late Professor Tsutomu SAKAMOTO*), 239-253.
Shirahata, T., N. Yoshimura, M. Nakayama, and K. Sawasaki (2015) Japanese EFL learners' knowledge of coreference in tensed and infinitive constructions. *Studies in English Language and Literature* 35, 57-70.
Yoshimura, N., M. Nakayama, A. Fujimori, and H. Shimizu (2015) Japanese learners' interpretation of PRO in English control structures. *IEICE Technical Report (Shingaku gihoo),* Vol.115, No. 176, TL2015-31, 71-76. Institute of Electronics, Information and Communication Engineers, Tokyo.
Yoshimura, N., M. Nakayama, A. Fujimori, and H. Shimizu (2016) Control and raising constructions in early L2 English. *Second Language* 15, 53-76.

A Fine Differentiation of Korean NPIs: Evidence from ERP Responses

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Previous neuro-imaging studies have examined the neural processes of licensing negative polarity items (NPIs) such as *any* and *ever* in the anomalous sentences without NPI-licensing elements like negation, which elicited an N400 followed by a P600 compared to their grammatical counterparts (cf. Drenhaus et al., 2004, 2005, 2006). They suggested that the failure in licensing of NPIs engenders semantic integration costs (N400), but the additional P600 component from unlicensed NPIs reflects different aspects of processing them. Xiang, Grove and Giannakidou (2016) also noted that explicit and implicit negative meaning were integrated into the grammatical representation in distinct ways, leading to a difference in the P600, and calling for a separation of semantic and pragmatic integration during NPI licensing.

Turning to Korean, it is controversial whether the two NPIs in Korean such as the nominal *amwu N-to* 'any N' and the adverbial *teisang* 'any more' are licensed by nonveridical contexts like interrogatives and *cen* 'before'-clause in Korean, although it is well established that they are licensed by an overtly negated predicate (Lee, 1999; Hwang, 2013). Thus, in order to examine how Korean NPIs enter into licensing relation during online processing, this study conducted two ERP experiments in addition to offline and online acceptability tasks with *amwu-N-to* (Experiment 1) and with *te isang* (Experiment 2) within four different contexts (see Table 1 in the next page)

Seventeen right-handed normal functioning Korean native speakers, who had normal or corrected-to-normal vision (12 males, mean age 22.8), participated in the experiments. As shown in Figure 1, in Experiment 1 with the nominal *amwu N-to*, the ERP component N400 was elicited in the anomalous conditions such as (b) ($F_{(1,16)}$=10.04, p<0.01), (c) ($F_{(1,16)}$=10.32, p<0.01), and (d) ($F_{(1,16)}$=12.28,p<0.01), compared to their grammatical counterpart (a), but no P600 component was elicited. It is consistent with the results of offline ($F_{(3,57)}$=115.43, p<0.001) and online ($F_{(3,48)}$=4.51, p<0.05) acceptability tasks. However, in Experiment 2 with the adverbial *teisang*, N400 followed by a marginal 'anterior' P600 was elicited in the anomalous conditions (b) and (c), compared to their grammatical counterpart (a). The normal condition (d) relative to (a), however, elicited a significant 'anterior' P600 ($F_{(1,16)}$=7.20, p<0.05). First, note that all the anomalous conditions in both Exp. 1 and 2 registered N400, which is interpreted as a signature for a violation of NPI licensing due to a failure of semantic integration. Second, 'anterior' P600 evoked in (d) of Exp. 2, which earned relatively high acceptability scores in both offline (3.2 out of 4) and online (67.3 out of 100) ratings, seems not to be due to a syntactic violation. Given that 'anterior' P600 may indicate an increased memory demand in sentence comprehension (Nakano et al., 2014), this component in our study is ascribed to complex pragmatic/discourse processing involving time-referencing of the adverbial NPI *teisang*, rather than syntactic integration processing. This study will also investigate whether the experimental results from licensing of Korean NPI *teisang* have to do with Xiang et al.'s (2009) notion of semantic illusion.

Table 1. Sample materials

a. overtly negative predicate

Kyengmi-ka [**amwu yoli-to**/**teisang** yoli-lul] leysutholang-eyse cwumwunha-ci

Kyengmi-NOM [any dish/ any more dish-ACC] restaurant-LOC order-COMP

anhassta-ko chinkwu-ka sayngkakhayssta

didn't-COMP friend-NOM thought

b. positive predicate

Kyengmi-ka [**amwu yoli-to**/**teisang** yoli-lul] leysutholang-eyse cwumwunha-ko

Kyengmi-NOM [any dish/ any more dish-ACC] restaurant-LOC order-COMP

issess-ta-ko chinkwu-ka sayngkakhayssta

PROGRESSIVE-COMP friend-NOM thought

c. interrogative

Kyengmi-ka [**amwu yoli-to**/**teisang** yoli-lul] leysutholang-eyse cwumwunha-ko

Kyengmi-NOM [any dish/ any more dish-ACC] restaurant-LOC order-COMP

issess-nunci chinkwu-ka cilmwunhayssta

PROGRESSIVE-INTERROGATIVE friend-NOM asked

d. before-clause

Kyengmi-ka [**amwu yoli-to**/**teisang yoli-lul**] leysutholang-eyse cwumwunha-ki

Kyengmi-NOM [any dish/ any more dish-ACC] restaurant-LOC order-COMP

ceney chinkwu-ka tochakhayss-ta.

before friend-NOM arrived

Figure 1. ERP results
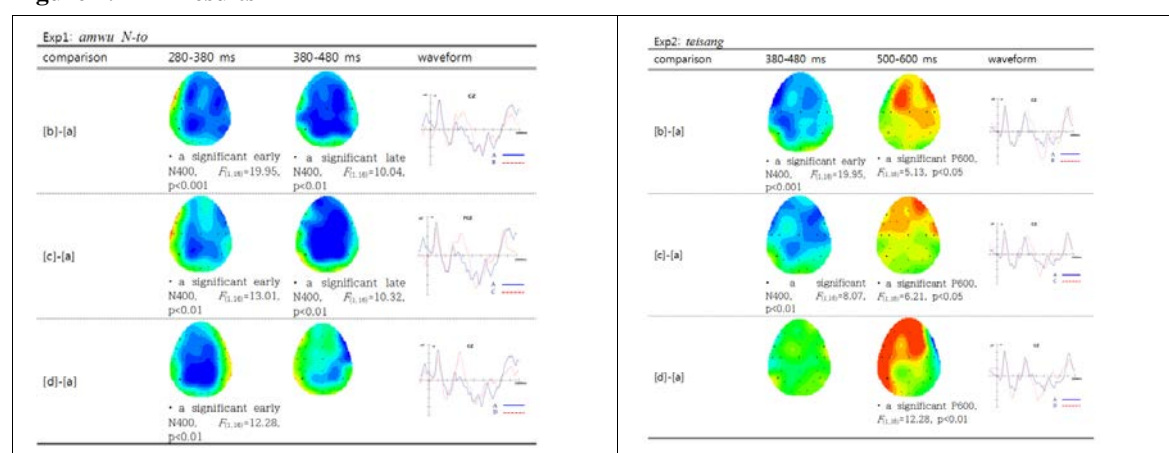
Reference

Drenhaus, Heiner, Peter beim Graben, Douglas Saddy, and Stefan Frisch. 2006. Diagnosis and repair of negative polarity constructions in the light of symbolic resonance analysis. *Brain and Language* 96(3): 255–268.

Drenhaus, Heiner, Stefan Frisch, and Douglas Saddy. 2004. Intrusion effects in the processing of negative polarity items. In *Pre-proceedings of the International Conference on Linguistic Evidence*, ed. by S. Kepser and M. Reis, 41–46. Tubingen.

Drenhaus, Heiner, Stefan Frisch, and Douglas Saddy. 2005. Processing negative polarity items: When negation comes through the backdoor. In *Linguistic Evidence-empirical*, Th*eoretical*, *and Computational Perspectives,* ed. by St. Kepser M. Reis . Berlin/New York, Mouton de Gruyter.

Hiroko Nakano, Mari-Anne M. Rosario, Yuriko Oshima-Takane, Lara Pierce and Sophie G. Tate. 2014. Electrophysiological response to omitted stimulus in sentence processing. *Cognitive Neuroscience and Neuropsychology* 25: 1169-1174.

Hwang, Juhyeon. 2013. Typology of NPIs in Korean: Variation and licensing. *Language Research* 49(3): 829-856.

Lee, Chyngmin. 1999. Types of NPIs and nonverdicality in Korean and other languages. In *UCLA Working Papers in Linguistics 3: Syntax at Sunset 2*, ed. by G. Stoto, 96-132.

Xiang, Ming, Julian Grove, and Anastasia Giannakidou. 2016. Semantic and pragmatic processes in the comprehension of negation: An event related potential study of negative polarity sensitivity. *Journal of Neurolinguistics* 38: 71-88.

Xiang, Ming, Brian Dillon, and Colin Phillips. 2009. Illusory licensing effects across dependency types: ERP evidence. *Brain and Language* 108: 40–55.

On the Acquisition of Variation in Count Noun Modification using Numerals:
Comparing Japanese and English

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Cross-linguistic variation exists in count noun modification using numerals (Chierchia 1998, Krifka 1995). In some languages (e.g., English), a numeral directly modifies a count noun, as in (1) (Direct Modification, DM henceforth). Other languages (e.g., Japanese) use classifiers: a numeral cannot directly modify a count noun, as in (2), and so instead, the count noun is modified with an accompanying classifier, as in (3) (Indirect Modification, IM henceforth). How do Japanese-speaking children come to know that DM is impossible in the target language? In addressing this question, it is critical to consider whether there is overgeneration of DM. If there is no overgeneration, some innateness should be playing a role to avoid the overgeneration.

In this context, it is interesting that this variation is idiosyncratic in some languages such as Mi'gmaq (Algonquian) or Chol (Mayan) (Bale and Coon 2014). In Mi'gmaq, for instance, only DM is possible with numbers 1-5, while only IM is possible with numbers 6 and higher. Given this idiosyncrasy, we must admit that children acquiring this mixed-type language have to pay attention to the DM/IM choice in the input data from adults. Then, there is some plausibility in a learning scenario in which both DM and IM are allowed at the initial stage but the overgeneration gradually disappears based on the fact that the overgenerated form is missing in the input data from adults (Indirect Negative Evidence, Chomsky 1981).

Considering the above two points, I investigated whether there is DM overgeneration in Japanese-speaking children's natural production data. First, I examined the emergence of DM in Child English for comparison. The result of my search with CHILDES database is in (4). It shows that, at age 1-2, English-speaking children are cognitively mature enough to produce DM.

Next, I examined the existence of DM in Child Japanese at the equivalent stage. The result of my search with CHILDES database (age 1-2) is in (5). It shows that, at age 1-2, Japanese-speaking children never produce DM. In the English data, there are 283 DMs out of 673 utterances with numerals. In contrast, in the Japanese data, there is no DM in 173 utterances with numerals without classifiers. The contrast is statistically significant at p<.01 using the chi-square test.

Further, even IM is not abundant in (5). Hence, I extended my search by including three Japanese-speaking children's CHILDES database at age 3-4. The result is in (6). There are 14 IMs in total, and there is no DM in 448 utterances including numerals without classifiers. Although (6) covers age 1-4, even IM is not abundant again. However, statistically, if both IM and DM are equally possible, the probability of getting 14 IMs in succession is extremely low: $(0.5)^{14}=0.000061035$. Thus, the data in (6) reconfirms that there is no DM overgeneration in Child Japanese.

Thus, there was no DM overgeneration in my search. This suggests that some innateness plays a role in L1 Japanese acquisition to avoid the overgeneration.

(1) *Two cups*. (Direct Modification)

(2) *Ni (no)   koppu*. (Direct Modification)
     two (Gen) cup   (Gen: Genitive)
     ungrammatical as 'two cups', with or without the Genitive Partilce *no*
     grammatical as 'cup(s) with number two' with the Genitive Partilce *no*

(3) *Ni-ko   no   koppu* / *Futa-tsu no   koppu*, (Indirect Modification)
     two-Cl Gen cup   / two-Cl Gen   cup   (Cl: Classifier)
     'two cups'

(4) Numerals in Child English (for numbers 1, 2, and 3) at age 1-2

Child name	Eve	Peter	Adam	Total
Age	1;6-2;3	1;9-2;10	2;3-2;11	1;6-2;11
Total utterances	11868	27184	16209	55261
Utterances including numerals	112	337	224	673
DM	51	134	98	283

(5) Numerals in Child Japanese at age 1-2

Child name	Tai	Aki	Nanami	Total
Age	1;6-2;11	2;0-2;11	1;10-2;11	1;6-2;11
Total utterances	32218	20857	15016	68091
Utterances including numerals w/ classifiers	145	55	33	233
Utterances including numerals w/o classifiers	27	114	32	173
IM	0	2	2	4
DM	0	0	0	0

(6) Numerals in Child Japanese at age 1-4

Child name	Tai	Aki	Nanami	ArikaM	Asato	Total
Age	1;6-2;11	2;0-2;11	1;10-4;11	3;0-4;11	3;0-4;11	1;6-4;11
Total utterances	32218	20857	27113	45918	11581	137687
Utterances including numerals w/ classifiers	145	55	126	278	74	678
Utterances including numerals w/o classifiers	27	114	45	249	45	448
IM	0	2	4	2	6	14
DM	0	0	0	0	0	0

Notes for (5) and (6):
1: These corpora are for periods after numeral emergence.
2: Classifiers examined: *-tsu* (Inanimate Generic), *-ko* (3D Object), *-ri*/*-nin* (Human), *-hiki* (Animate)
3: DM was searched for numerals 1, 2, and 3

Rethinking Parameter Setting from Locality and Orientation Constraints for *Ziji* in Mandarin

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Previous first language acquisition studies systematically found children showed locality constraint (e.g., Chien & Wexler 1990; Chien, Wexler & Chang 1993; Su 2004) but not subject orientation constraint (e.g., Chien 1992; Su 2009; Hestvik & Philip 2001) in their interpretation of long-distance reflexives. The patterns of interpretation pose a problem for the theory which postulates two separate parameters for locality and orientation—why do children comply with the Subset Principle for the locality constraint (or the Governing Category Parameter) but not for the orientation constraint (or the Proper Antecedent Parameter)? Similar patterns of dissociation of locality and orientation have also been repeatedly reported in L2 acquisition (e.g., Yip & Tang 1998), and accounts that assume either a clustering effect of a single parameter (e.g., Thomas 1995) or a feature-based approach for reflexivization (e.g., Dominguez, Hicks & Song 2012) were proposed to explain such findings.

This study investigates the patterns of interpretations from Mandarin-speaking preschool children (age range 4;04-6;10) and adults regarding locality and orientation for *ziji*. Two truth value judgment experiments were conducted using sentences like (1) and (2) for locality constraint (with the coreference reading of *ziji* and the non-local subject NP true in the stories), and both experiments used sentences like (3) for orientation constraint (with the coreference reading of *ziji* and the object NP true in the stories). The results are summarized in Table 1. Similar to previous studies on the orientation constraint, the results of the two experiments showed that unlike Mandarin-speaking adults, preschool Mandarin-acquiring children about 50-60% of the time allow object antecedent for *ziji*. With respect to the locality constraint, the results from the two experiments display a contrast between sentences like (1) vs. (2). For both types of sentences, children predominantly disallow the non-local subject to be the antecedent of *ziji*. Unlike what is generally assumed in Chinese syntax, adults do not allow non-local subject to co-refer with *ziji* for (2), but allow the long-distance reading about 57% of the time for (1).

The results suggest that *ziji* plays two different roles—an anaphor and a logophor. The fact that adults distinguish (1) from (2) supports Reinhart & Reuland's (1993) theory that an anaphor is syntactically bound if its antecedent is the co-argument of the predicate, and hence *ziji* in (2) involves syntactic/anaphoric binding, whereas *ziji* in (1) is a logophor. Since a reflexive allowing non-local subject NP as its antecedent but unrestricted regarding the orientation constraint is not attested cross-linguistically, the acquisition of a logophor as in (1) does not involve parameter setting. On the other hand, since a reflexive allowing only local binding can be either unrestricted (e.g., English *himself*) or subject-only (e.g., Mandarin *ziji* and Korean *caki-casin*), the results suggest that it is only the anaphoric/syntactic binding that involves a parameter, and the default setting of this parameter is possibly the English type. Therefore, for children acquiring Mandarin or Korean, the acquisition process requires a resetting of the parameter from its default to the target language.

Types of sentences
(1) Xiaoairen shuo nanhai zai ban ziji de shafa (小矮人說男孩在搬自己的沙發)
    Dwarf   say boy   ASP carry self of sofa
    "The dwarf said the boy was carrying SELF's sofa."
(2) Laoshu shuo Tuzi   zai ca   ziji   （老鼠說兔子在擦自己）
    Mouse say Rabbit ASP wipe self
    "Mouse said Rabbit was wiping SELF."
(3) Tuzi   nagei Xiaoxiong yi-ben ziji de shu   （兔子拿給小熊一本自己的書）
    Rabbit hand Bear   one-CL self of book
    "Rabbit handed Bear a book of SELF."

Table 1. Summary of the results (percentage of NO)

Sentence Type	Children	Adults	statistics
1 (non-local)	97% (N=18, 35/36)	43% (N=14, 12/28)	$t=5.66, p<.001$
2 (non-local)	81% (N=21, 34/42)	88% (N=24, 42/48)	$t=0.65, p>.05$
3-1 (object)	50% (N=18, 18/36)	96% (N=14, 27/28)	$t=3.62, p<.01$
3-2 (object)	60% (N=21, 25/42)	96% (N=24, 46/48)	$t=3.48, p<.01$

References
Chien, Y. C. (1992). Theoretical implications of the principles and parameters model for language acquisition in Chinese. In O. Tzeng and H. C. Chen (Eds.) Language Processing in Chinese, (pp. 313-345). Amsterdam: North-Holland Elsevier Science Publishers B. V.
Chien, Y.-C. and Wexler, K. (1990) Children's knowledge of locality conditions in binding as evidence for the modularity of syntax and pragmatics. *Language Acquisition*, 1, 225-295.
Chien, Y.-C., Wexler, K., and Chang, H.-W. (1993) Children's development of long-distance binding in Chinese. *Journal of East Asian Linguistics* 2, 229-259.
Dominguez, L., Hicks, G., & Song, H-J. (2012) Untangling locality and orientation constraints in the L2 acquisition of anaphoric binding: A feature-based approach. *Language Acquisition*, 19, 266-300.
Hestvik, A., & Philip, W. (2001) Syntactic vs. logophoric binding: Evidence from Norwegian child language. In *Long-Distance Reflexives* [*Syntax and Semantics, vol. 33*], P. Cole, G. Hermon, and C.-T. J. Huang (eds.), 119-139. San Diego: Academic Press.
Reinhart, T., & Reuland, E. (1993) Reflexivity. *Linguistic Inquiry*, 24, 657-720.
Su, Y-C. (2004) The development of long-distance Binding for Chinese *Ziji* revisited. *Chinese Journal of Psychology*, 46(3), 249-257.
Su, Y-C. (2009) Syntax vs. discourse constrained *Ziji* in Mandarin child language. Paper presented in GLOW 2009 Acquisition Workshop. Nantes, France. April. 15, 2009.
Thomas, M. (1995) Acquisition of the Japanese reflexive zibun and movement of anaphors in logical form. *Second Language Research*, 11(3), 206-234.
Yip, V., & Tang, G. (1998) Acquisition of English reflexive binding by Cantonese learners. In Maria-Luise Beck (ed.) *Morphology and Its Interfaces in Second Language Knowledge*, 165-193. Amsterdam: John Benjamins.

Anti-Reconstruction Effects of Focused Phrases in Child Japanese

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It has been observed in various languages that children tend to comprehend sentences containing *only* in a non-adult-like manner, making their comprehension of *only*-sentences one of the central issues in the acquisition of semantics. This finding has led to the broader question of how and to what extent children are different from adults in their interpretation of *only*-sentences. The present study contributes to answer this question, by examining Japanese-speaking children's knowledge of the scope relations between (i) object DPs with the focus particle -*dake* 'only' and (ii) negation.

In Japanese, while universally-quantified objects can be interpreted within the scope of negation, such narrow-scope interpretation is unavailable when the object is a focused phrase with -*dake* (see (1) and (2)). Shibata (2015) suggests that this lack of reconstruction effects with focused phrases follows from the interaction between the language-universal property of *only* and the language-specific morphological properties of Japanese. Interpretive principles of UG require that focus particles like -*dake/only* undergo obligatory late insertion, and hence are adjoined to the DPs at their final landing site of movement. Object DPs in Japanese are forced to move to a position above the negation and the tense, since the verb, the negation, and the tense are combined into a single verbal complex via morphological/PF merger, which, as a consequence, excludes any overt element disrupting the structural adjacency between them. (See (3) for a derivation.)

If Shibata's (2015) analysis of the obligatory wide scope of *dake*-phrases over the negation is on the right track, we can expect that Japanese-speaking preschool children around the age of five, who already have adult-like knowledge about the formation of verbal complexes, should also be adult-like with respect to this lack of reconstruction effects with focused phrases. In order to evaluate this prediction, we conducted an experiment with 24 children (age; 4;11 - 6;06, mean age 5;10), using a truth-value judgment task. In each trial, a child was told a story (see (4) for a sample), which was accompanied by a series of pictures presented on a laptop computer, and at the end of each story, a puppet described verbally what he thought had happened in the story, using (i) a sentence containing a universally-quantified object as in (5) and (ii) a sentence containing an object DP with -*dake* as in (6). The task for the child was to judge whether each of these descriptions by the puppet was correct or wrong. The experiment consisted of four target-trials and four filler-trials.

The results are summarized in Table 1. While children accepted the wide-scope interpretation of negation around 70% of the time when the object DP was accompanied by a universal quantifier, they disallowed such wide-scope interpretation of negation when the object DP was accompanied by -*dake*. These results clearly indicate that Japanese-speaking preschoolers have adult-like knowledge concerning the obligatory wide scope of *dake*-phrases over the negation. This finding from child Japanese argues for the view that the lack of reconstruction effects with focused phrases follows from properties of UG.

(1) Taro-wa   ringo-o   zenbu   tabe-nak-atta.
     Taro-TOP   apple-ACC   all   eat-not-PAST
     (i)   ^{OK}ALL > NOT: 'Taro ate no apples.'
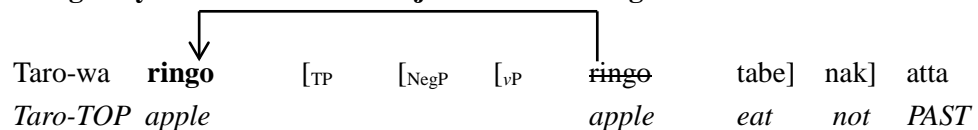   (ii)   ^{OK}NOT > ALL: 'It was not the case that Taro ate all the apples.'

(2) Taro-wa   ringo-dake   tabe-nak-atta.
     Taro-TOP   apple-only   eat-not-PAST
     (i)   ^{OK}ONLY > NOT: 'It was only apples that Taro didn't eat.'
     (ii)   *NOT > ONLY: 'It was not the case that Taro ate only apples.'

(3) a.   **Obligatory Movement of the Object DP above Negation:**

           Taro-wa **ringo**   [$_{TP}$ [$_{NegP}$ [$_{vP}$ ~~ringo~~   tabe]   nak]   atta
           Taro-TOP apple   *apple   eat   not   PAST*

     b.   **Obligatory Late Insertion of *-dake* 'only':**
           Taro-wa **ringo+<u>dake</u>** [$_{TP}$ [$_{NegP}$ [$_{vP}$ ~~ringo~~   tabe]   nak]   atta
           Taro-TOP apple+only   *apple   eat   not   PAST*

(4) **A Sample Story:** When Keita and Jibanyan came back home after playing outside, they found three dishes placed on the kitchen table, each of which had a slice of melon, a bunch of grapes, and a banana. Keita said, "These look yummy. I really like fruits!", and ate all of the fruits on a dish. Jibanyan said, "I had a big lunch today, so I think I should not eat these fruits." However, looking at Keita's happy face, Jibanyan changed his mind and said, "I am eating these fruits!" Jibanyan ate the slice of melon and the bunch of grapes on his dish, but he then became really full, so he gave up on eating the banana. Then, their friend Whisper also came back from outside and found the dish of fruits. Looking at the dish, Whisper said, "These look yummy! I am kind of full, but I think I can eat one." After spending a bit of time thinking what to eat, he decided to eat the banana. When he finished eating the banana, Whisper said, "That was really good. I think I can eat one more." Again, he spent a bit of time thinking which to eat, and finally decided to eat the slice of melon.

(5) **Test Sentence containing a Universally-Quantified Object DP:**
     Jibanyan-wa   furuutsu-o   zenbu   tabe-nak-atta   yo.
     Jibanyan-TOP   fruits-ACC   all   eat-not-PAST   PRT
     'Jibanyan didn't eat all the fruits.'

(6) **Test Sentence containing an Object DP with *-dake*:**
     Whisper-wa   banana-dake   tabe-nak-atta   yo.
     Whisper-TOP   banana-only   eat-not-PAST   PRT
     'Whisper didn't eat only a banana.'

	The Number of Acceptance	The Rate of Acceptance
not > every	66 / 96	68.8%
not > only	4 / 96	4.2%

Table 1: Children's Acceptance ($t(27.80) = 8.12$, $p < .000$, $d = 2.17$)

Selected References: Shibata, Yoshiyuki. 2015. *Exploring Syntax from Interfaces.* Doctoral dissertation, University of Connecticut, Storrs.

Thematic Roles versus Grammatical Functions: Processing Japanese Passive Sentences with Canonical and Scrambled Orders by L1 and L2 Japanese Speakers

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Introduction. Following either grammatical functions or thematic roles would predict different word orders in Japanese passive sentences. According to grammatical functions, the subject precedes the object; i.e., subject-object-verb (SOV) word order. However, thematically, the agent precedes the theme; i.e., an agent-patient-verb or a scrambled OSV word order in grammatical functions. L1 Japanese speakers quickly integrate grammatical information to form the syntactic structure according to grammatical functions [A]. Second language (L2) learners often show difficulties in applying grammatical information [B], so L2 learners possibly integrate semantic information to understand sentences. If so, L2s may follow thematic roles to understand passive sentences, predicting that scrambled order OSV could be processed more quickly and accurately than their canonically ordered SOV counterparts. The current eye-tracking study investigates the processing and comprehension of Japanese active and passive sentences with canonical SOV and scrambled OSV orders for both L1s and advanced L2s.

Methods. Forty L1 and 37 L2 (L1 Chinese, all N1 Japanese ability in *JLPT*) students were recruited from a university in Japan. Forty items (and 64 distractors) were built using a 2 (voice: active vs. passive) by 2 (word order: canonical vs. scrambled) design. All sentences (two NPs and a transitive verb) were constructed with animate proper nouns with high frequencies, and only case markers were changed. Using EyeLink 1000, participants read simple sentences with transitive verbs on a computer monitor and answered comprehension probes, all of which used the active voice.

Selected Findings and Discussion. The results were analyzed using lmer/glmer and log transformed RTs. For the total reading time of the sentence, both the L1 and L2 groups revealed significant effects of both voice and word order (Figure 1): Act-Can < Pas-Can ≈ Act-Scr < Pas-Scr. For comprehension, while there were significant main effects of voice and word order, the effects were chiefly from interaction: Act-Can had the highest accuracy for L1s whereas Pas-Scr had near chance for L2s. First-pass reading times by L1s revealed that scrambled orders in the NP before the verb of active sentences (near the *gap* position) showed longer reading times than canonical order. This result may reflect L1s' anticipatory incremental processing before seeing the ending verb, which was not observed in L2s. Significant differences were found after seeing the verb. Although L2s displayed a reading pattern similar to L1s, L2 re-reading times between canonical and scrambled order in NPs were more prominent than for L1s. Consequently, both L1s and L2s must use argument information provided by the verb, but L2s more heavily rely on this information for processing scrambled passive sentences. Although the passive OSV is consistent with semantically-defined order of the agent-patient-verb, and the comprehension probes were given in SOV active voice which were semantically congruent with the passive OSV, this pattern of passive OSV and active SOV probe was the hardest for L2s (slow and inaccurate). This study clearly indicated that L2s are not relying on surface semantic features, but as with L1s, they rely on the syntactically-based, head-driven processing.

Active: (SOV) Suzuki-san(Mr./Miss)-*ga*(nom) Kato-san-*o*(acc) ket (kick)-ta.
  (OSV) Suzuki-san-*o* Kato-san-*ga* ket-ta.
Passive: (SOV) Suzuki-san-*ga* Kato-san-*ni*(dat) kerare-ta. (OSV) Suzuki-san-*ni* Kato-san-*ga* kerare-ta.
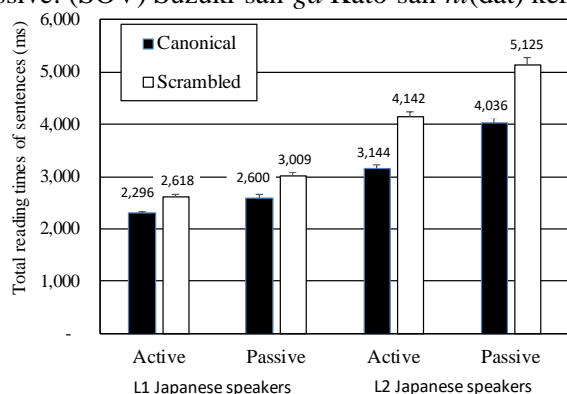

Figure 1. Total reaction times for active and passive sentences with canonical and scrambled orders by L1 and L2 Japanese speakers
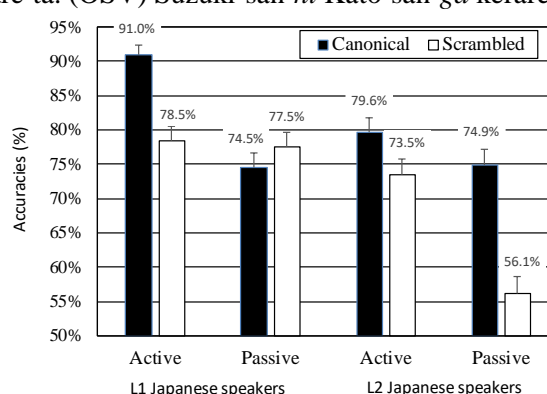

Figure 2. Accuracies for active and passive sentences with canonical and scrambled orders by L1 and L2 Japanese speakers
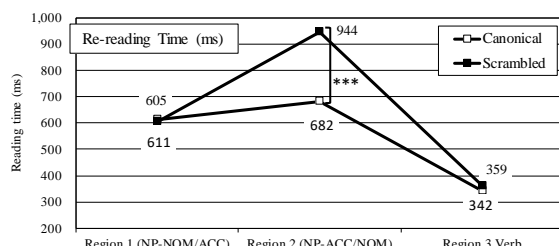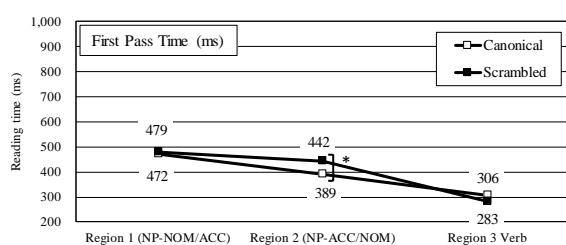

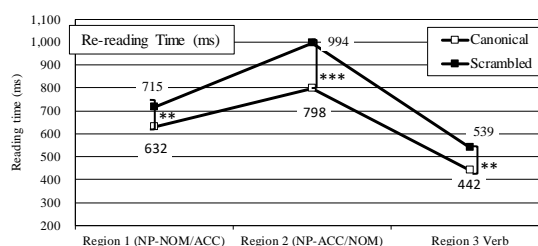Figure 3. Active sentences with canonical and scrambled orders by L1 Japanese
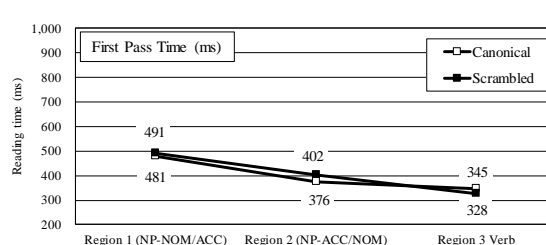

Figure 4. Passive sentences with canonical and scrambled orders by L1 Japaense
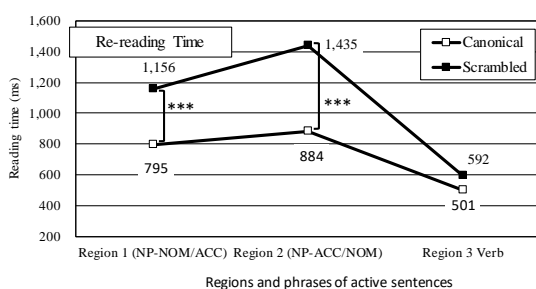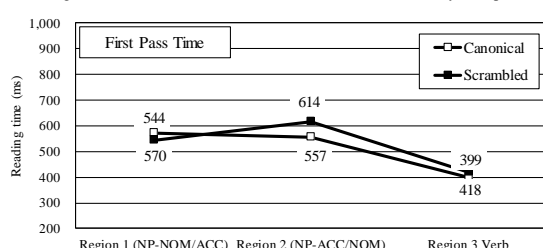

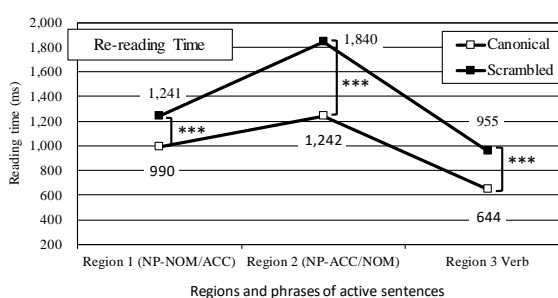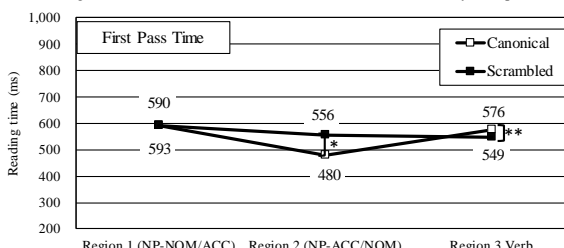Figure 5. Active sentences with canonical and scrambled orders by L2 Japanese

Figure 6. Passive sentences with canonical and scrambled orders by L2 Japanese

Reference: [A] Tamaoka, K., et al., (2005) doi:10.1007/s10936-005-3641-6 [B] Clahsen, H., & Felser, C. (2006b). doi:10.1016/j.tics.2006.10.002

A New Look into Deaf Children's Acquisition of Classifier Predicates in Hong Kong Sign Language

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Classifier predicates are morphosyntactic constructions observed in almost all sign languages under study so far. Unlike the free lexical verb roots of Cantonese, classifier predicates are compositional in nature, made up of two bound affixes -- a handshape affix (i.e. verbal classifier) to refer to the argument(s) of the predicates and a movement affix to encode the predicate root. Acquisition studies on this construction consistently report a protracted course of acquisition, and most focused on the choice of verbal classifiers based on predicate types and predicted it to be the cause of difficulty in the acquisition process (Supalla, 1982; Schick, 1987; Slobin & Hoiting, 2003; Lam, 2009 and Tang et al., 2007 on HKSL; Schick, 1987 on ASL).

In this study, we propose to adopt an alternative, morphosyntactic account with the following prediction. The awareness of the compositional nature of classifier predicates in HKSL makes deaf children realize that the predicate root is affixal and the classifier is argumental and anaphoric in nature, which triggers the identification of an antecedent to satisfy the dependency relations requirement. As such, we should be expecting a change from SVO to SOV/OSV word order in the production of deaf children's sentences because topicalization of the direct (i.e. theme) or indirect object (theme or goal) will result in the antecedent c-commanding the verbal classifiers in the predicate.

To test this prediction, we designed a picture description task with 24 items to elicit locative, motion-directional and transitive predicates. 15 HKSL-exposed bimodal bilinguals deaf children were invited to participate in this test. Their age was between 9;6 and 14;5 at the time of the experiment, and all were born in hearing families. Their onset age of acquisition of HKSL range from 4;2 to 7;2. In our analysis, they were divided into 4 groups according to their years of exposure to HKSL (Group 1: 7 years, Group 2: 6 years, Group 3: 5 years, and Group 4: 4 years).

Generally speaking, the overall accuracy rates of Group 1, 2, 3, and 4 is 86%, 52%, 31%, and 30%, respectively, with Group 1 significantly better than the other groups (F(3,11) = 7.999, p < .05). The word order of the classifier predicates is found to be the most difficult grammatical property especially for the participants in Group 3 and 4 whose accuracy rates were 6% and 13% respectively. With these children, SVO order was the major error produced (Group 2: 44%, Group: 80%, Group 4: 60%) and the nominals were first introduced into the discourse without an accompanying classifier. This suggests that these deaf children have not yet developed knowledge of verbal classifiers in HKSL. Our data also show that the use of space (i.e. assigning the classifiers to loci for referential indexing purpose) predicts the participants' performance on sign order (i.e. Regression model (t(67.8) = 8.234, p < .001). In sum, the cross sectional data suggest duration of exposure is an important factor contributing to successful acquisition of this complex structure.

Examples:

(1) Adult form of classifier predicates:

    a. <u>Locative Predicate</u>

        TABLE_i be-located$_a$+$\text{CL}_{\text{SASSi,}}$ DOG_i be-located$_a$+CL_{SEMj} // CL_{SASSi}

        'A dog is on the table.'

    b. <u>Motion-Directional Predicate</u>

        TREE_i be-located$_a$+$\text{CL}_{\text{SASSi,}}$ DOG_i run-toward$_b$+CL_{SEMj} // CL_{SASSi}

        'A dog is running towards a tree.'

    c. <u>Transitive Predicate</u>

        VASE_i be-located$_a$+CL_{SASSi}, MAN_j kick+CL_{SEMj}//CL_{SASSi}

        'A man kicks a vase.'

(2) Error sentences produced by participants:

    a.   <u>Transitive Predicate</u>:

        ELEPHANT   dash+CL_{SEM}//CL_{SEM} HORSE

        'An elephant dashes into a horse.'   (Group 2: WSY)

    b.   <u>Locative Predicate</u>:

        BIONIC-HAND   put+CL_{SASS}//be_located+CL_{SEM} DOG

        'The bionic hand is located (on the back of) the dog.'   (Group 4: CHY)

    c.   <u>Motion-direction Predicate</u>:

        DOG   jump+CL_{SEM}//be_located+CL_{SASS} CAR IX-up TOY_CAR IX-up

        'The dog jumps onto the toy car.'   (Group 3: TSM)

References:

Lam, S. (2009). *Early phrase structure in Hong Kong Sign Language*. Doctoral dissertation, The Chinese University of Hong Kong

Schick, B. (1987). *The acquisition of classifier predicates in American Sign Language*. Doctoral dissertation, Purdue University.

Slobin, D. I., Hoiting, N., Kuntze, M., Lindert, R., Weinberg, A., Pyers, J., Anthony, M., Biederman, Y., & Thumann, H. (2003). A cognitive/functional perspective on the acquisition of "classifiers". In K. Emmorey (Ed.), *Perspectives on classifier constructions in sign languages* (pp. 271-296). Mahwah, NJ: Lawrence Erlbaum.

Supalla, T. (1982). Structure and acquisition of verbs of motion and location in American Sign Language. Doctoral dissertation, University of California, San Diego, CA.

Tang, G., Sze, F., & Lam, S. (2007). Acquisition of simultaneous constructions by deaf children of Hong Kong Sign Language. In M. Vermeerbergen, L. Leeson, and O. Crasborn (Eds.*),* *Simultaneity in signed languages: Form and function* (pp. 283-316). Amsterdam: John Benjamins.

Acquisition of the Scalar Reading of *Dou* by Mandarin-speaking Children

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Dou, commonly known as the distributive operator in Mandarin, can also have a scalar reading (Lü 1980). For example, while (1)a truth-conditionally means John is a member of the set of people who passed the exam, (1)b further implies that among the relevant people in the current state of affairs, John is the least possible person to pass the exam. In other words, when bound by *Dou*, John forms a scale with other relevant people in terms of the likelihood of passing the exam, and John is the weakest item on the scale. Furthermore, the scale triggered by *Dou* can be reversed by negation, thus the negative counterpart of (1)b, which is in (2), implies that John is the most likely one to pass the exam.

The present study addresses: a) when do Mandarin children acquire the scalar reading of *Dou*? b) are children aware that the scale triggered by *Dou* is reversed in the negative context?

The elicited inference task was used to test 150 Mandarin children aged between 4;0 and 8;4, as well as a control group of 36 adults. On a typical trial, the subject was invited to listen to the story in (0). It is assumed that if the subject is sensitive to the scalar reading of *Dou*, their judgment will be affected by the presence/absence of *Dou* in the utterance of Mr. Elephant. In scenario 1, they will answer "White Horse" when they hear (3)a but "Black Horse" when they hear (4)a. If the subject is further aware that the scale triggered by *Dou* is reversed by negation, in Scenario 2 they should answer "Black Horse" when they hear (3)b, and "White Horse" when they hear (4)b. If the subject is insensitive to the scalar reading of *Dou*, however, they will answer "Black Horse" in Scenario1 and "White Horse" in Scenario 2 not matter what they hear contains *Dou* or not.

The results in Table 1 show that Mandarin children are insensitive to the scalar reading of *Dou* before the age of 7 years. Their understanding of the test sentences (with *Dou*) is not significantly different from that of the corresponding control sentences (without *Dou*). Their judgment is always based on whether Black Horse jumped over the river or not. Children aged 7 years or older show sensitivity to the scalar reading of *Dou*. They have also acquired the knowledge that the scale triggered by *Dou* is reversed by negation.

It is argued that the scalar reading of *Dou*, being a conventional implicature (Grice 1989), is difficult for children to learn. The scale triggered by *Dou* is ad hoc (Hirschberg 1985), which cannot be defined by means of entailment. Thus, compared to implicatures associated with Horn scales (Horn 1972), which can be defined in terms of entailment, the scalar reading of *Dou* is later in acquisition.

Examples:

(0) *Black Horse and White Horse wanted to eat the grass on the other side of the river, so they had to jump over the river.*
    [Scenario 1] *Black Horse jumped first, and he succeeded. White Horse was very nervous and hesitated to jump. His friend, Mr. Elephant, encouraged him by saying the test sentence (3)a or the control sentence (4)a.*
    Alternatively, the subject may hear:
    [Scenario 2] *Back Horse jumped first, but he failed. White Horse was very brave and determined to jump. His friend, Mr. Elephant, stopped him by saying the test sentence (3)b or the control sentence (4)b.*

(1) a. *Yuehan   tongguo-le   kaoshi.*
       John   pass-ASP   exam
       John passed the exam.
    b. *Yuehan   dou   tongguo-le   kaoshi.*
       John   all   pass-ASP   exam
       Even John passed the exam.
(2)   *Yuehan   dou   mei   tongguo   kaoshi*
       John   all   not   pass   exam
       Even John didn't pass the exam.
(3) a. *heima   dou   neng   tiao   guoqu.*
       Black horse   all   can   jump   over
       Even the black horse can jump over (the river).
    b. *heima   dou   mei   tiao   guoqu.*
       Black horse   all   not   jump   over
       Even the black horse didn't jump over (the river).
(4) a. *heima   neng   tiao   guoqu.*
       Black horse   can   jump   over
       The black horse can jump over (the river).
    b. *heima   mei   tiao   guoqu.*
       Black horse   not   jump   over
       The black horse didn't jump over (the river).

Table 1 The number and percentage of subjects who consistently (at least 3 out of 4 trials) gave the correct responses

Age Groups	Test -Pos	Test -Neg	Control-Pos	Control-Neg
4-y-olds (N=27)	2 (3.7%)	0 (0%)	27 (100%)	27 (100%)
5-y-olds (N=28)	7 (25%)	5 (17.9%)	28 (100%)	28 (100%)
6-y-olds (N=30)	13 (43.3%)	10 (33.3%)	30 (100%)	30 (100%)
7-y-olds (N=30)	27 (90%)	27 (90%)	30 (100%)	30 (100%)
8-y-olds (N=30)	29 (96.7%)	28 (93.3%)	29 (96.7%)	30 (100%)
Adults (N=36)	36 (100%)	35 (97.2%)	34 (94.4%)	35 (97.2%)

The Functional Specification of "Focus": Evidence from Event-Related Potentials of Mandarin Chinese Processing

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While "focus" has been recognized to be the most emphasized and prominent constituent that plays an important role in processing the information structure of a sentence/utterance (Rochemont, 1986), it remains controversial regarding how the discourse function of a "focus" would be distinguishable in the representations (Baumann & Riester, 2012; Büring, 2007; Selkirk, 2007). Indeed, theories addressing focus and sentence prosody diverge on whether informational status in a language is best distinguished in a two-way manner (i.e., discourse-given vs. discourse-new (also informational focus), Chomsky, 1971; Halliday, 1967) or a three-way manner (i.e., discourse-given, informational focus vs. contrastive focus, Prince, 1981; Selkirk, 2007).

Nevertheless, most studies of information structure processing have compared mainly two types of focus category in the investigation like focus-congruent vs. focus-incongruent (Cowles, et al., 2007), focus vs. non-focus entities (Chen, et al. 2012; Chen, et al., 2014), given vs. new entity (Benatar & Clifton, 2014, Experiment 1 and 2), contrastive focus vs. given (Benatar & Clifton, 2014, Experiment 3), sentences with exclusive (*only*) vs. inclusive (*even*) focus marker (Filik, et al., 2009), and utterances of canonical vs. non-canonical types (Stolterfoht, et al., 2007; Bornkessel, et al., 2010). It remains elusive regarding to what extent the different types of focus are to be distinguished during the processing and under what linguistic circumstances. We addressed this issue by examining more closely the real-time processing of different kinds of focus within a *single* experiment that can expose their relative prominence and real-time interaction, using the event-related potentials (ERPs) paradigm that is timing-sensitive and direct measure of neural processing.

We used the passage, shown in the next page, that used question-answer pairs to manipulate contextually focused information in the investigation. The first sentence of each passage introduces three discourse referents and sets up the context for the following question-answer pair sentences where the variations of experimental conditions match with different levels of informational status. The context-question A (i.e., 1a to 4a) elicits specific expectancy for a particular focus status associated with the focused object "周兵" in the target answer sentence B, with "周兵" to be expected as an informational focus in 1b, as contrastively focused in 2b, a defocused entity in 3b and as neutral in 4b, respectively.

ERPs extracted at "周兵" suggested a bilateral sustained negative-going waveform with a maximum over frontal-central scalp sites, resembling the Nref (Van Berkum, et al., 2007). This sustained negative voltage ERPs showed distribution differences in the scalp topography for different types of focus processing. Specifically, as the structure of the discourse made the target word increasingly more focused, the negative-going deflection systematically reduced. We propose that the reduced negative deflection for the focus-marked words reflects facilitating processing of meaning integration, which can be attributed to enhanced encoding and context-entailed givenness. The topographic distributional differences, furthermore, suggest that different kinds of focus, as has been assumed in the three-way distinction theories, involve distinct cognitive processes/resources during the processing of information structure.

References and Example

Baumann, S., & Riester, A. (2012). Referential and lexical givenness: semantic, prosodic and cognitive aspects. In G. Elordieta & P. Prieto (eds.), *Prosody and Meaning* (pp. 119-162). Berlin: Mouton de Gruyter..

Benatar, A., & Clifton, C., Jr. (2014). Newness, givenness and discourse updating: Evidence from eye movements. *Journal of Memory and Language, 71*, 1–16.

Bornkessel, I., Schlesewsky, M., & Friederici, A. D. (2003). Contextual information modulates initial processes of syntactic integration: the role of inter- versus intrasentential predictions. *Journal of Experimental Psychology: Learning, Memory and Cognition, 29(5)*, 871-882.

Büring, D. (2007). Intonation, semantics, and information structure. In G. Ramchand & C. Reiss (eds.), *The Oxford handbook of linguistic interfaces*. Oxford: Oxford University Press.

Chen, L., Li, X., & Yang, Y. (2012). Focus, newness, and their combination: Processing of information structure in discourse. *PLOS One, 7*.

Chen, L., Wang, L., & Yang, Y. (2014). Distinguish between focus and newness: An ERP study. *Journal of Neurolinguistics, 31*, 28-41.

Chomsky, N., 1971. Deep structure, surface structure and semantic interpretation. In D. Steinberg, & L. Jacobovits (eds.), *Semantics: an Interdisciplinary Reader* (pp. 183–216). Cambridge University Press, Cambridge.

Cowles, H. W., Kluender, R., Kutas, M., & Polinsky, M. (2007). Violations of information structure: An electrophysiological study of answers to wh-questions. *Brain and Language, 102*, 228-242.

Filik, R., Paterson, K. B., & Liversedge, S. P. (2009). The influence of only and even on online semantic interpretation. *Psychonomic Bulletin & Review, 16(4)*, 678-683.

Halliday, M. A. K. (1967). Notes on transitivity and theme in English: part 2. *Journal of Linguistics, 3(02)*, 199-244.

Prince, E. (1981). Towards a taxonomy of given-new information. In P. Cole (Ed.), *Radical Pragmatics*. Academic Press, New York.

Rochemont, M. (1986). *Focus in generative grammar*. Amsterdam: John Benjamins.

Selkirk, E. (2007). Contrastive focus, givenness and the unmarked status of "discourse-new". In C. Féry, G. Fanselow & M. Krifka (eds.), *The notion of information structure* (pp. 125-145). Postam: Interdisciplinary Studies on Information Structure 6.

Stolterfoht, B., Friederici, A. D., Alter, K., & Steube, A. (2007). Processing focus structure and implicit prosody during reading: Differential ERP effects. *Cognition, 104*, 565-590.

Van Berkum, J. J. A., Koornneef, A. W., Otten, M. & Nieuwland, M. S. (2007). Establishing reference in language comprehension: An electrophysiological perspective. *Brain Research, 1146*, 158-171.

Condition (Informational Status)	Context set-up sentence (the 1st sentence)	Question-answer pair sentences	
		A. Question sentence (the 2nd sentence)	B. Answer Sentence (the 3rd sentence)
1. Focused	國強, 周兵, 子健在學校大打出手。	a. 國強打了誰?	b. 國強打了周兵,但是出手不重。
2. Contrastive		a. 國強打了子健?	b. 國強打了周兵,但是出手不重。
3. Defocused		a. 誰打了周兵?	b. 國強打了周兵,但是出手不重。
4. Neutral		a. 發生了什麼事?	b. 國強打了周兵,但是出手不重。

Poster presentations

Allocation of the Cognitive Resources to the Processes of Unheralded Pronoun in a Second Language

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While pronouns usually refer to a referent closely mentioned, they can sometimes refer to a distant referent in a text. These pronouns are termed as unheralded pronouns (Gerrig, 1986). Greene, Gerrig, McKoon, & Ratcliff (1994) revealed that first language (L1) readers resolved unheralded pronouns as easily as they resolved ordinary pronouns. However, it is hypothesized that a referential inference for unheralded pronoun resolution can be restricted in a second language (L2) because L2 readers allocate more cognitive resources to language processing rather than inferential processing. The present study attempted to examine how this limited cognitive resources to inferential processing affect unheralded pronoun resolution.

A sample material story is presented in Table 1. Participants read each text in either one of two story versions. In the Referent Present version, the pronoun in the pronoun sentence works ordinarily while, in the Referent Absent version, the pronoun works as an unheralded pronoun because the referent fades away from the discourse focus after the middle part, in which only one of the main characters appears. The participants read each text sentence by sentence on their own pace. There is a test-word recognition task either after reading the pronoun sentence (Experiment 1) or before the reunion sentence (Experiment 2). The test word was a social role of the referent. The reading time for the pronoun sentence, the reaction time and the accuracy rate for the recognition task were assessed.

In both experiments, participants were intermediate English learners of Japanese. Their understanding of the texts was confirmed through the true-false comprehension task after each story. Thirty-one university students participated in Experiment 1. As shown in Table 2, neither the mean accuracy rate nor the mean reaction time between the story versions was significantly different. The reading times for the pronoun sentence in Referent Absent were significantly slower than in Referent Present. These results indicate that the referent information was activated after pronoun resolution and that the resource-consuming unheralded pronoun required longer times to be comprehended. Thirty-four university students participated in Experiment 2. As shown in Table 3, neither the mean accuracy rate nor the reaction time was significantly different between the story versions. The reading times were significantly longer in Referent Absent than in Referent Present. The reaction-time results turned out to be in the opposite direction to the hypothesis that the participants would react to the test word faster in Referent Present. We argue that because the social role word itself did not appear in the middle part of either story versions the participants encountered the difficulty in activating the backgrounded information at the test-word recognition task. Regarding the longer reading time for the unheralded pronoun sentence, as in Experiment 1, unheralded pronoun resolution should be resource-consuming. In sum, this study revealed that the small amount of cognitive resources to the inferential processing resulted in the slowdown in comprehending unheralded pronouns. Moreover, the reaction-time results suggest that activating the backgrounded information is a resource-consuming process for L2 readers.

Table 1

One Sample Material Story with One Comprehension Task that Experiment 1 and 2 Used

Introduction Section: Robert needed help putting up posters for a concert. He had already recruited his friend Danny to help. Danny suggested that they might also ask a **freshman** named **Walter**. Danny said, "I'll go over to Walter's room." He put on his jacket and then headed out.

Referent Present: He found Walter lying on his bed reading. Danny asked, "Do you have any free time this afternoon?" Walter eyed him and asked, "I have so many things to do." Danny didn't pester him for help and left the room.

Referent Absent: Robert looked at the large pile of posters. He had originally agreed to put 20 of them up. The organizers had surprised him by delivering closer to 200. It would take most of the afternoon trudging around campus.

Reunion Sentence: Robert was counting out piles of 10 when Danny returned.

Pronoun Sentence: Danny said, "**He** claims he's too busy."

Final Sentence: Robert said, "He wouldn't be too busy if there were food involved."

Comprehension Task: Robert succeeded in recruiting one more student to help.

Note. "*Freshman*" is a social role of the referent "*Walter*" for "*He*" in the pronoun sentence.

Table 2

[Experiment 1] Mean reading time (ms) for the pronoun sentence, mean reaction time (ms) and mean accuracy rate (%) for the test-word recognition task

Condition	Reading Time (*SD*)	Test-Word Recognition Task	
		Reaction Time (*SD*)	%Accuracy (*SD*)
Referent Present	3468 (1044)	2139 (677)	85 (15)
Referent Absent	3957 (1170)	2011(483)	91 (12)

Table 3

[Experiment 2] Mean reading time (ms) for the pronoun sentence, mean reaction time (ms) and mean accuracy rate (%) for the test-word recognition task

Condition	Reading Time (*SD*)	Test-Word Recognition Task	
		Reaction Time (*SD*)	%Accuracy (*SD*)
Referent Present	3300 (512)	1989 (856)	80 (18)
Referent Absent	3645 (486)	1815 (664)	86 (13)

References

Greene, S. B., Gerrig, R. J., McKoon, G., & Ratcliff, R. (1994). Unheralded pronouns and management by common ground. *Journal of memory and language, 33*, 511-526.

Gerrig, R. J. (1986). Process models and pragmatics. In N. E. Sharkey (Ed.), *Advances in Cognitive Science*. Chichester, England: Ellis Horwood.

Processing the Focus Particle *only* in L2 English Learners' Sentence Comprehension

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This research aims to examine how Korean learners of English comprehend sentences in English containing the focus operator *only*. Cross-linguistically, children often produce non-adult answers to sentences containing the focus particle *only*, particularly to subject-*only* sentences in contrast to VP-*only* ones. Previous studies have reported that children between the ages of 3 to 7 face difficulties in understanding *only* when they encountered the question "*what happened*?" (Crain et al., 1994). Departing from Crain's puzzle, Martin et al. (2015) reported the different results, pointing out that the study conducted by Crain's research had a methodological flaw. Adopting a principle known as Question-Answer Congruence (QAC), Martin et al. conducted experiments to investigate how L1 children are sensitive to this principle. In so doing, children's understanding of *only* is primarily becoming adult-like for both target sentences. The other findings of the previous experimental research revealed that Korean-speaking children did not show an asymmetry between subject and VP *man 'only'* sentences (Kim, 2011). Considering this, we predict that L2 learner's processing would be affected by their native language, particularly by the syntactic constraint in it.

The majority of studies on this issue have been limited to L1 speakers. We attempt to fill the gap by conducting two experiments with L2 learners. We use a picture judgment task. For each of the two target sentences (e.g., *Only* the boy is jumping over a red hurdle; The boy is *only* jumping over a red hurdle), we prepared two pictures depicting the situations that are matched or mismatched to each sentence, as shown in Figure1.

In Experiment 1, we employed the question *what happened*? to examine whether L2 learners are able to accommodate sub-questions or not. The analysis of the results revealed that accuracy rates were significantly lower for VP-*only* (66%) than for subj-*only* (92%, *p*=.0001). In sum, Korean L2 learners had difficulty in accommodating object-questions vis-à-vis VP-*only* sentences. Modeled after Martin's study, in Experiment 2 we also investigated whether the L2 learners are sensitive to QAC or not. We employed the subject and object questions in place of "*what happened*?". As a result, we found higher accuracy rates for all the target items than in Experiment 1, as illustrated in Figure 2. There was a significant difference between the two experiment conditions (*p*=0.001). Our results support Martin's claim that the question "*What happened*" requires an accommodation of more sub-questions, which L2 English learners were not able to carry out effectively just as L1 children did. This suggests that L2 leaners have been influenced by the role of L1 transfer in the process of learning the second language. Because they lack syntactic knowledge in the use of *only* as a VP operator in English, Korean L2 learners have difficulty identifying the focus of VP-*only* sentences. Our key findings provide an account of how L2 learners differ from those of L1, and why.

Figure 1 Four target pictures depicting events

Figure 1

Only the boy is jumping over a red hurdle (Match)
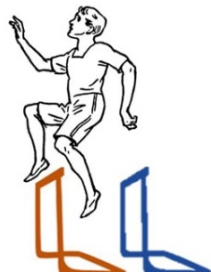The boy is only jumping over a red hurdle (Match)

Figure 2

Only the boy is jumping over a red hurdle (Mimatch)
The boy is only jumping over a red hurdle (Match)

Figure 3

Only the boy is jumping over a red hurdle (Match)
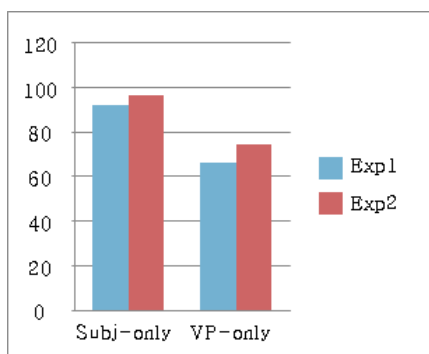The boy is only jumping over a red hurdle (Mismatch)

Figure 4

Only the boy is jumping over a red hurdle (Mismatch)
The boy is only jumping over a red hurdle (Mismatch)

Figure 2 Per-experiments accuracy

References

Crain, Stephan., Weijia, Ni., & Laura, Conway. (1994). Learning, parsing, and modularity, in Perspectives on sentence processing, ed. by Clifton, Charles, Jr., Lyn Fraizer, and Keith Rayner, Lawrence Erlbaum Associates, Inc., Hillsdale, NJ, 443-467.

Kim, So Young. (2011). Semantic Interpretation of Korean Focus Particle –man 'only' in Language Acquisition. *The Journal of Linguistic Science*, 57, 45-62.

Martin, Hacks., Ayaka, Sugawara., & Ken, Wexler. (2015). Question-Answer (In)Congruence in the Acquisition of Only. In BUCLD 39 Proceedings, Cascadilla Press, Somerville, MA.

On the Acquisition of Japanese Conjunction and the Semantic Subset Principle:
A Preliminary Report

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Introduction

It is observed that Japanese conjunction *-mo-mo* and disjunction *ka* take scope over negation as in (1) and (2). According to [1], Japanese children (age 3-6) interpret the disjunction under negation *unlike* adults, while they interpret the conjunction over negation *like* adults. In addition, Turkish children (age 4-5) also incorrectly interpret disjunction under negation, while they correctly interpret conjunction over negation ([2]).

Their performance can be captured by the Semantic Subset Principle (SSP; [2]). As shown in Table 1, the truth conditions of the 'or > not' reading constitute a superset of the truth conditions of the 'not > or' reading. In contrast, the truth conditions of the 'not > and' reading constitute a superset of the truth conditions of the 'and > not' reading. The SSP states that children initially adopt the scope assignment that generates the subset truth condition. Thus, children correctly interpret conjunction in an adult-like way, while they interpret disjunction in a non-adult-like way in English and Turkish.

Note that it is also predicted under the SSP that children should not allow the 'not > and' reading in sentences in which adults allow it. In fact, the 'not > and' reading does become possible in elided sentences such as (3a) in adult Japanese ([3]). According to the SSP, children are predicted to initially assign the 'and > not' reading to (3a).

Experiment

In order to examine this prediction, we conducted experiments with 10 Japanese adults and 10 Japanese children using TVJT. A sample target and control item are given in (3a) and (3b) respectively, and a sample story is given in (4). Although Japanese adults rejected the 'not >and' reading in (3b) (100%=20/20), they clearly accepted it in (3a) at the rate of 95%(=19/20). In contrast, the children accepted the 'not > and' reading in (3a) at the rate of only 35%(=7/20). This indicates that many of the children assigned the *'and > not'* reading to (3a); they interpreted (3a) as 'Penguin couldn't eat the carrot and couldn't eat the green pepper', in accordance with the SSP. On the other hand, they correctly rejected (3b) in an adult-like way (100%=20/20), which suggests that they do not have a problem with the Japanese conjunction *-mo-mo* (cf. [1]). Note too that children around age 5 have already acquired ellipsis of objects ([4]).

Conclusion

This experimental research reveals that Japanese children strongly preferred the *'and > not'* interpretation in the target items, even where adults allowed a 'not > and' reading. This result fits well with the SSP. Obeying the SSP, children initially assign the 'and > not' reading to (3a), even though adults strongly prefer the 'not > and' reading there. The children's non-adult-like performance with conjunction/ disjunction seems to be due to the lack of relevant cues in the input data from adults (cf. [1]).

Therefore, children show non-adult-like performance with conjunction as well as with disjunction in (some) negative sentences. This study provides new evidence that children's scope assignment with logical connectives obeys the SSP.

(1) Buta-wa   ninjin-mo   piiman-mo   tabe-nak-atta
   pig-TOP   carrot-also   green pepper-also   eat-NEG-PAST
   'The pig didn't eat neither the carrot nor the green pepper.' *(not > and)/ (and > not)

(2) Buta-wa   ninjin   ka   piiman-wo   tabe-nak-atta
   pig-TOP   carrot   or   green pepper-ACC   eat-NEG-PAST
   'The pig didn't eat the carrot or didn't eat the green pepper.' *(not > or)/ (or > not)

Table 1: Truth conditions of the scope relations between negation and 'A or/and B'

scope / situation	¬ A & B	A & ¬ B	¬ A & ¬ B	A & B
or > not (superset)	**T**	**T**	**T**	F
not > or (subset)	F	F	**T**	F
not > and (superset)	**T**	**T**	**T**	F
and > not (subset)	F	F	**T**	F

E.g. A/B stands for what X ate. ¬ A/¬ B stands for what X didn't eat.

(3) Zibanyan-wa   ninjin-mo   piiman-mo   tabe-re-ta   kedo,
   Zibanyan-TOP   carrot-also   green pepper-also   eat-can-PAST   but
   'Zibanyan was able to eat the carrot and the green pepper but...,'

   a. Pengin-wa   _____e_____   tabe-re-nak-atta.
      Penguin-TOP   eat-can-NEG-PAST
      (Lit.) 'Penguin wasn't able to eat *e*.':
      'Penguin wasn't able to eat the carrot or wasn't able to eat the green pepper.' (not >and)
      'Penguin was able to eat neither the carrot nor the green pepper.' (and > not)

   b. Pengin-wa   ninjin-mo   piiman-mo   tabe-re-nak-atta.
      Penguin-TOP   carrot-also   green pepper-also   eat-can-NEG-PAST
      'Penguin was able to eat neither the carrot nor the green pepper.'   *(not > and)/(and>not)

(4) A sample story:
Zibanyan and Penguin are participating in an eating game, and they try to eat both a carrot and a green pepper. If they can eat both of the vegetables, then they receive a gold medal. If they can eat one of the vegetables, but not both of them, then they get a blue medal. If they cannot eat either of them, it receives a black cross. When they start to eat, a screen appears in front of them, and a participant cannot see what happens behind the screen. After that, Zibanyan appears with a gold medal, but Penguin appears with a blue medal.

Correct Answer for (3a): Accept (not > and) or Reject (and > not)
Correct Answer for (3b): Reject (and > not)

References:
[1] Goro (2007) *Language-specific constraints on scope interpretation in first language acquisition.* Ph.D. Maryland. [2] Geçkin, Crain, & Thornton (2016) The interpretation of logical connectives in Turkish. *Journal of Child Language 43*(4), 784–810. [3] Funakoshi (2013) Disjunction and object drop in Japanese. *Proceedings of the 4th annual Tampa workshop in linguistics*. [4] Sugisaki (2007) The Configurationality Parameter in the Minimalist Program: A View from Child Japanese. *BUCLD31*.

The Focus Phrase and the Disjunction Parameter in Mandarin

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Mandarin permits various possible structures for negative sentences. One such difference is in the position of the object NP in the surface syntax. The object NP can appear in canonical (SVO) position, as in (1), or it can be preposed to the Focus Phrase (above negation), as in (2).

(1) Nanhaimen meiyou zhaodao mifeng huozhe xiaoshe.
     Boy-PL   not   find   bee   or   snake
(2) Nanhaimen mifeng huozhe xiaoshe meiyou zhaodao.
     Boy-PL   bee   or   snake   not   find

Previous research has shown that Mandarin-speaking children differ from adults in their assignment of scope relations to disjunction phrases in negative sentences like (1) (e.g. Crain et al., 2002; Jing et al., 2005). Invoking the Disjunction Parameter, the proposal is that disjunction is a Positive Polarity Item (PPI) for adults, so adults raise the disjunction phrase '*mifeng huozhe xiaoshe* (bee or snake)' to a position above negation at the level of semantic interpretation. Children do not initially analyse disjunction as a PPI, so they interpret disjunction phrases in the scope of negation, licensing a conjunctive entailment. The present study included disjunction phrases in preverbal position in the surface syntax, as in (2). The experimental hypothesis was that the disjunction phrase would undergo reconstruction in sentences like (2), licensing a conjunctive entailment (as in one of de Morgan's laws), whereas adults would assign 'disjunctive' truth conditions.

We interviewed 30 Mandarin-speaking children aged four and 13 adult controls using a Truth Value Judgment task, in a between-subjects design (e.g. Crain and Thornton, 1998). For both groups of participants, the stories associated with the test sentences were the same. For example, one story had four boys trying to find bees and snakes. Two of the boys only found bees, and two boys failed to find both. Adults were expected to accept both sentences (1) and (2) in this context because snakes were what all boys did not find, but children were expected to reject them, on the grounds that two of the boys did find both bees (violating the conjunctive entailment).

The findings were exactly as predicted. The child participants rejected the test sentences like (1) 84% of the time (101/120) and ones like (2) 91% of the time (109/120), whereas the adult participants accepted both sentence types 69% of the time (83/120). Children justified their rejections in ways that were consistent with the conjunctive entailment.

The fact that adult participants accepted both kinds of test sentences indicates that they analysed disjunction as a PPI, replicating the findings of previous research. The fact that children rejected both kinds of sentences is evidence that they assigned a conjunctive interpretation to sentences like (2), indicating that their analysis is based on 'reconstructing' the disjunction phrase, permitted by children's –PPI setting of the Disjunction Parameter (Crain, 2012). Finally, the different patterns of linguistic behaviour evinced by children and adults indicates that children's initial setting of the disjunction parameter is not motivated by adult input, but by considerations of language learnability in the absence of negative evidence (i.e. the Subset Principle).

POSTER PRESENTATIONS

Selected References:

1. Crain, S., & Thornton, R. (1998). *Investigation in Universal Grammar—A guide to experiments on the acquisition of syntax*. Cambridge, MA: MIT Press.
2. Crain, S., Gardener, A., Gualmini, A., & Rabbin, B. (2002). Children's command of negation. In Y. Otsu (Eds.), *Proceedings of the 3rd Tokyo Conference on Psycholinguistics* (p165-190). Tokyo, Japan: Hituzi Syobo Publishing.
3. Crain, S. (2012). *The Emergence of Meaning*. New York: Cambridge University Press.
4. Goro, T. (2007). *Language-specific constraints on scope interpretation in first language acquisition*. PhD Dissertation, University of Maryland.
5. Guasti, M. T., & Chierchia, G. (2000). Backward versus forward anaphora: Reconstruction in child grammar. *Language Acquisition, 8(2)*, 129-170.
6. Jing, C., Hsu, C., & Crain, S. (2005). Interpretation of focus in Chinese: child vs. adult language. In Y. Otsu (Eds.), *Proceedings of the 5th Tokyo Conference on Psycholinguistics* (p71-95). Tokyo, Japan: Hituzi Publishing Company.

A Study of Young Mandarin-speaking Children's Implicit Temporal Reference

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Mandarin Chinese is a language without morphological tense markers. How Chinese determines its temporal reference? It has been argued that lexical aspects and pragmatic cues (i.e. context and background knowledge), known as implicit temporal reference, also contribute to the building of temporal reference (e.g. Lin 2003; Smith and Erbaugh 2005, Tonhauser 2015). Many studies on Chinese children's acquisition of temporal reference have explored the development of explicit temporal reference, such as aspect markers and temporal adverbials (e.g. Li 1998; Chen and Shirai 2010). There are also a few attempts to investigate implicit temporal reference in child Mandarin from the perspective of the role of pragmatic cues (Huang 2003) and the telicity of predicates (Su 2010).

This research aims to further investigate how Mandarin-speaking children express implicit temporal reference with a focus on children before age 2. The research questions are as follows. First, apart from 'here-and-now', do children express the past or the future time without explicit temporal markers? Second, what kinds of implicit temporal reference are involved and how do children use them? The data was obtained in 145 video-taped sessions of four children's (aged from 1;6 to 2;0) naturalistic production, drawn from the BJCELA corpus. We analyzed child utterances containing verbs but without explicit temporal expressions such as grammatical aspect markers and temporal adverbials. By carefully examining the temporal relation between speech time and event time of every utterance according to the context as indicated in the video, we classified children's utterances into three types in terms of temporal reference: utterances expressing the present, the immediate future/modal reference, and the past. Our preliminary analysis shows the following results.1. Before age 2, the majority of the denoted events are located in the present and the immediate future (Table 1 provides the data of one child). 2. As indicated by Table 1, even in the conversational context with a strong "here and now" time frame, children can still locate events in the past time. 3. Lexical aspects are the main temporal device to express the present and past in spontaneous utterances initiated by the child. For the present time, children tend to use imperfective aspects associated with activity and state verbs in their spontaneous utterances (Example 1). As for the past time, they tend to use perfective aspects mainly expressed by achievement verbs (Example 2). This finding resembles the findings from Su (2010) in that children exhibit sensitivity to the correlation between telicity of predicates and different temporal reference. 4. Pragmatic cues are the main temporal device to convey temporality in child replies to adult questions (Example 4). Children use the antecedent time frameset up by the adult in the context to specify the time in his/her own utterance. This is consistent with what Huang (2003) has observed. Our findings thus suggest that Mandarin-speaking children express implicit temporal reference by using lexical aspects and pragmatic cues at a very early age.

Table 1 The number of utterances conveying different temporal reference (one child)

Age	Present	Past	Future
1;6	33	5	22
1;7	98	12	67
1;8	157	12	93
1;9	236	20	83
1;10	218	19	59
1;11	145	7	57

(1) Situation: ZTX was pointing to the left front door of a car.
Child: *zhebian you da men*.（1；8）"*have*" is a state verb.
    here   have big door
    'Here is the big door."
(2)Situation: ZTX put a toy into his pocket and then he said.
Child: *wo zhuanghao wanju*.（1；9）"*zhuanghao*" is an achievement verb.
    I pack up   toy.
    'I packed up the toy.'
(3) Situation: ZTX wanted to open the TV and watch the cartoon "Tianxianbaobao".
Child: *wo kan Tianxianbaobao*.（1；10）"*kan*" is an activity verb.
    I watch Tianxianbaobao.
    'I want to watch Tianxianbaobao.
(4) Situation: the investigator was asking the child a question.
Adult: *Maomao ni zaoshang shua ya le ma*?
    Maomao you morning brush teeth LE SFP?
    'Maomao, did you brush your teeth this morning?'
Child: shua ya（1；6）
    brush teeth
    '(I) brushed my teeth.'

Selected Reference:
Chen, J. and Shirai, Y. 2010. The development of aspectual marking in child Mandarin Chinese. *Applied Psycholinguistics* 31:1-28.
Huang, C-C. 2003. Mandarin temporality inference in child, maternal and adult speech. *First Language* 23(2): 147-169.
Lin, J.-W. 2003. Temporal reference in Mandarin Chinese. *Journal of East AsianLinguistics* 12: 259–311.
Smith, C and Erbaugh, M. S. 2005. Temporal interpretation in Mandarin Chinese. *Linguistics* 43:713-756.
Su, Y. 2010. Temporal reference of bare verbs in Mandarin child language. In C. Wilder and T. A. Afarli (eds.), Chinese Matters: From Grammar to First and Second Language Acquisition. Norway: Tapir Academic Press: 131-151.

Scalar Implicatures in Young Chinese Poor Readers

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This study investigated the interpretation of scalar implicatures in young Chinese poor readers. It has been claimed that dyslexic children's pragmatic competence is impaired. For example, Vender (2011) reported that dyslexic children (MeanAge = 9;8) accept pragmatically infelicitous sentences containing *some* most of the time, differing from their age-matched controls. However, it has also been reported that dyslexic children (MA = 9;3) have no problem with rejecting those sentences (Arosio et al. 2016).

To shed light onto the mixed results, the present study tested 22 Chinese poor readers (MA = 9;4, aged 7;8-10;11, SD = 1.09) with their comprehension of sentences containing the quantifiers *yixie* "some" and *suoyou* "all" as in (1) and (2) respectively. Twenty-two age-matched typical readers (MA = 9;4, aged 7;8-10;11, SD = 1.03) and 16 younger children (M = 6;4, aged 6;0-6;11, SD = 0.23) served as control groups. The experiment involved five conditions: sentences containing *yixie* "some" that were true, false, or pragmatically underinformative in a context; sentences containing *suoyou* "all" that were logically true or false within a context (see examples in Figure 1). There were 20 items, 8 of which were in the *some-underinformative* condition. We used a truth value judgment task (Crain & Thornton 1998). The stories were presented via Microsoft PowerPoint on a laptop by one experimenter (Su & Su 2015). The participants were invited to listen to stories with a puppet (*the little bear*), and then to judge whether the target sentences were true or false based on the final outcomes as exemplified in Figure 1.

There were three main findings. Firstly, the pattern of poor readers was similar to that of younger children but differed from that of age-matched typical readers. Specifically, the poor readers and the younger children rejected the sentences in the *some-underinformative* condition 72% and 56% of the time, respectively, while typical readers did so 100% of the time. Secondly, both the poor readers and the younger children did not accept the sentences in the *some-true* condition. Specifically, the poor readers and the younger children rejected the sentences 23% and 37% of the time, respectively, while typical readers never rejected them. Thirdly, as expected, all the groups performed at ceiling on the other conditions.

To sum up, poor readers performed similarly to younger control children, and some of them had delayed knowledge of scalar implicatures as compared with their age-matched typical controls. These results are compatible with Vender (2011)'s finding, suggesting that some poor readers have certain deficit in their semantic and pragmatic competence.

Examples

(1) Yixie   nühai   na   le   pingguo.
    some   girl   take   ASP   apple
    'Some girls took an apple.'

(2) Suoyou   nühai   na   le   pingguo.
    all   girl   take   ASP   apple
    'All girls took an apple.'

Figure 1. Examples of final outcomes displayed on screen in each condition

some-true   some-false   some-underinformative

all-true   all-false
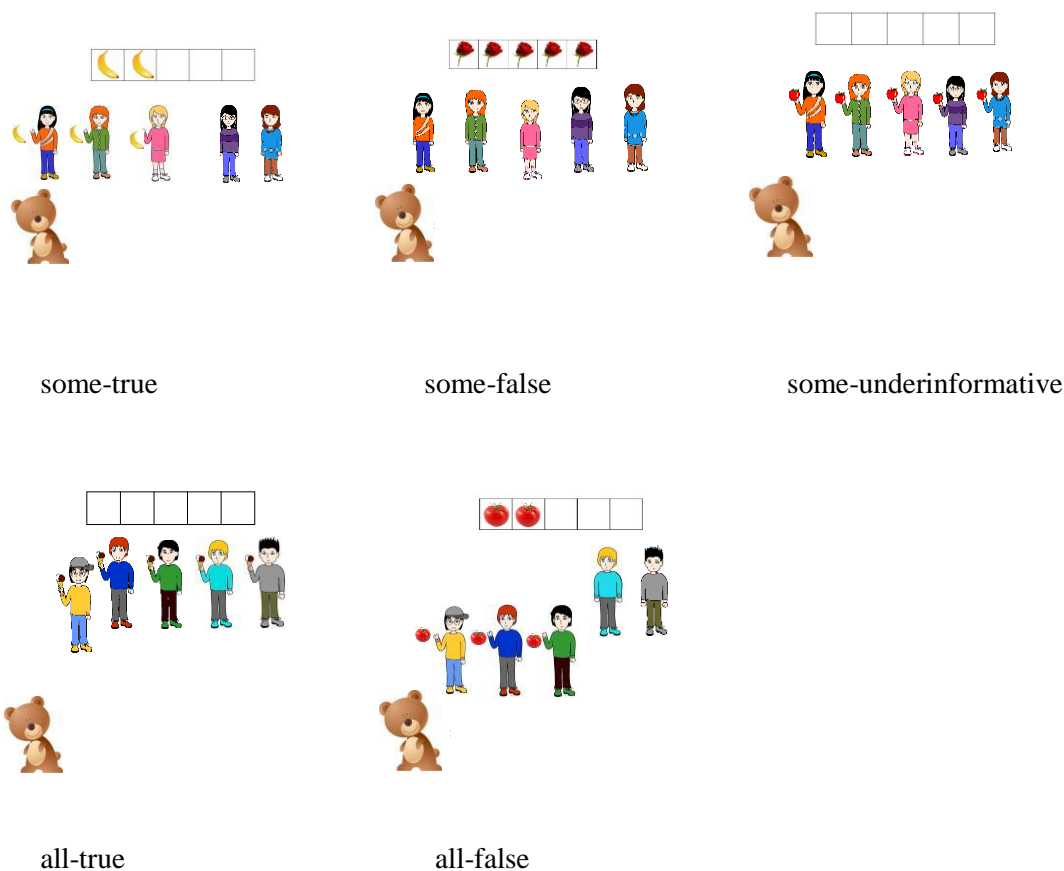
Selected references

Arosio, Fabrizio, Elena Pagliarini, Maria Perugini, Lina Barbieri & Maria Teresa Guasti. (2016). Morphosyntax and logical abilities in Italian poor readers: The problem of SLI under-identification. *First Language*, 1–21.

Crain, Stephen & Rosalind Thornton. (1998). *Investigations in Universal Grammar: A Guide to Experiments on the Acquisition of Syntax and Semantics*. Cambridge: MIT Press.

Vender, Maria. (2011). *Disentangling Dyslexia: Phonological and Processing Impairment in Developmental Dyslexia*. Ph.D. dissertation. University of Verona, Verona.

Su, Yi Esther & Lin-Yan Su. (2015). Interpretation of logical words in Mandarin-speaking children with autism spectrum disorders: Uncovering knowledge of semantics and pragmatics. *Journal of Autism and Developmental Disorders* 45(7), 1938–1950.

Universal Grinder is Universal:
An empirical Study of Collective Nouns in Mandarin Chinese

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The interpretation of collective nouns in English such as *furniture* is controversial thanks to the mismatch of their syntactic and semantic properties. On the theoretical side, collective nouns are divisively interpreted as denoting individuals, or non-individuals; on the empirical side, Barner and Snedeker (2005,2006) found in several quantification judgement tasks that collective nouns only denote individuals. Upon close examination, we think the lack of non-individual reading in the interpretation of collective nouns as claimed in previous empirical studies is due to the failure of providing appropriate contexts. Following the spirit of Universal Grinder (which is a thought machine that can shift the referent of any noun to mass, as proposed by Pelletier (1979)), we conducted an experiment to test Mandarin-speaking children's and adults' interpretation of collective nouns in Mandarin Chinese, such as *jiaju* 'furniture' and *gongju* 'tools'. In this experiment, two test conditions were designed, including an individual-oriented context for the triggering of the individual-denoting reading (which quantifies over the number of entities), and a substance-oriented context for the triggering of the substance-denoting reading (which quantifies over the amount of entities). Using a Truth-Value-Judgement-Task-based quantification judgement task, we tested twenty 4-to-6-year-old children (mean age:5;2;9) and twenty adults (See Appendix 1 for the details of the experimental design). It is found that both children and adults were sensitive to the contextual information and assigned individual-denoting readings and substance-denoting readings to collective nouns in appropriate contexts (Appendix 2). Our experimental study gives support to the underspecification account of nouns in Chinese: in the absence of functional categories such as classifiers, bare nouns in Chinese are underspecified in countability. The present study also highlights the importance of contextual information for the interpretation of bare nouns.

Appendix 1: Two test conditions and examples

Condition 1: Substance-oriented context (It is biased to quantify over the **amount** of entities)

There were two monsters, Frog Monster and Black Monster. They liked eating, and they ate everything. These two monsters didn't have any teeth, and they used a machine called 'grinder' to grind food. One day, they went out to hunt for food. Frog Monster found a big desk and a big chair. He put the two big pieces of furniture into the grinder, and the grinder produced a big pile of furniture substance. Frog Monster ate up the big pile of stuff and became very full, so he went to sleep and snored loudly. Black Monster found two small desks and two small chairs. He put the four small pieces of furniture into the grinder, and the grinder produced a small pile of furniture substance. Black Monster ate up the small pile of stuff, but he was still hungry.

Test Sentence:
1. *Qingwa yaoguai bi hei yaoguai chi le gengduo jiaju*
Frog-Monster Com Black-Monster eat more furniture
青蛙妖怪比黑妖怪吃了更多家具。
'Frog monster ate more furniture than Black monster.'

Possible responses and data interpretation:
If the participant gives a 'YES' response to the test sentence, he quantifies over the **amount** of furniture (Frog Monster did eat more amount of furniture than Black Monster), and assigns the substance-denoting reading to the collective noun *jiaju* 'furniture' in the sentence; if the participant gives a 'NO' response to the test sentence, he quantifies over the **number** of furniture (Frog Monster ate fewer pieces of furniture than Black Monster), and assigns the individual-denoting reading to *jiaju*. In this substance-oriented context (which highlights that Frog Monster is very full but Black Monster is still hungry), we expect that participants would favor the substance-denoting reading and **accept** the sentence.

Condition 2: Individual-oriented context: (It is biased to quantify over the **number** of entities)

There were two fairies, Fairy Jiejie (older fairy) and Fairy Meimei (younger fairy). One day they had a magic competition. Using their magic, Fairy Jiejie made a big desk and a big chair, and Fairy Meimei two small desks and two small chairs. Fairy Meimei won the competition and got a gold medal, and Fairy Meimei only got a black cross.

Test sentence:

2. *Xiannv Jiejie bi   xiannv* meimei bianchu le gengduo jiaju
  Fairy-Jiejie Com Fairy-Meimei make Asp more furniture
仙女姐姐比仙女妹妹变出了更多家具
 'Fairy Jiejie made more pieces of furniture than Fairy Meimei.'

Possible responses and data interpretation:
If the participant gives a 'YES' response to the test sentence, he quantifies over the **amount** of furniture and assigns the substance-denoting reading to *jiaju* in the sentence; if the participant gives a 'NO' response to the test sentence, he quantifies over the **number** of furniture and assigns the individual-denoting reading to *jiaju*. In this individual-oriented context (which uses a medal system, i.e., a gold medal vs. a black cross, to highlight that Fairy Meimei made more pieces of furniture than Fairy JieJie), we expect that participants would favor the individual-denoting reading and **reject** the sentence.

Appendix 2: Experimental results

Age groups	Individual-oriented context		Substance-oriented context	
	Individual-denoting reading (% of 'NO' responses)	Substance-denoting reading(% of 'YES' responses)	Substance-denoting reading(% of 'YES' responses)	Individual-denoting reading(% of 'NO' responses)
Children	95% (57/60 trials)	5% (3/60 trials)	98% (59/60 trials)	2% (1/60 trials)
Adults	100% (60/60 trials)	0% (0/60 trials)	73% (44/60 trials)	27% (16/60 trials)

Generalization: In both children and adults, the individual-denoting reading was favored in the individual-oriented context, and the substance-denoting reading was favored in the substance-oriented context.

Learnability Issues in L2 about Prosody and Semantics Interface

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Problems: Previous studies in L1 suggest that Chinese or Japanese children have access to both surface and inverse scope interpretations in sentences that are Chinese or Japanese equivalents of (1). On the contrary due to scope rigidity, Chinese or Japanese adults cannot access (1b) reading (Zhou and Crain 2013; Goro 2015). To expunge an unavailable interpretation such as (1b), these children must learn their languages' unique properties such as focus particle--the source of scope rigidity. In addition, Syrett et al (2014) report that native speakers of English disambiguate the meaning of sentences such as (2) by contexts and align the meaning with appropriate prosodic patterns such as A-/B-accents (Jackendoff 1972). In other words, native speakers recognize the properties of a particle (Chinese and Japanese) as well as prosodic patterns (English) for disambiguation of ambiguous sentences. However, it is not entirely clear whether or not L2 learners can acquire the properties of a particle and prosodic patterns to disambiguate ambiguous sentences.

Experiment and results: The present study investigates whether or not L2 learners of Japanese are able to align ambiguous interpretations with their appropriate prosodic patterns. Example (3) involves particle 'wa', of which there are two kinds: Thematic Topic (TT) and Contrastive Topic (CT). While fundamental frequency (F0) before/after TT is almost the same, F0 before/after CT is different (Kuno 1973; Nakanishi 2007). Native speakers of Japanese are able to disambiguate ambiguous interpretations using prosodic patterns (Nakanishi 2007; Ananth and Kamiya 2015). Following Syrett et al.'s experimental design, we tested 52 learners of Japanese (level 1 =16; level 2= 8; level 3 = 13; level 4 = 15) for both (3) and (4 = structural ambiguity with different prosodic breaks). The results show that there was a correlation between the interpretations and prosodic breaks in the structurally ambiguous sentences by all levels as shown in (5). However, this was not the case for the scopally ambiguous sentences even for the advanced learner =level 4 as shown in (6). The results clearly show that prosodic break is acquired and utilized for disambiguation, but F0 differences for TT/CT patterns (prosodic contours) are not.

Conclusions: We found that L2 learners' learnability of scope interpretations and prosodic patterns are not exactly like those of the native speakers of Japanese. Prosodic breaks for disambiguation are acquired easily since other L2 studies also report the same results (O'Brien et al. 2014), possibly due to L1 transfer. However, since prosodic contours are a language unique property, they cannot be acquired without explicit instructions, which is a crucial difference from L1 children. When multiple pieces of information are provided for disambiguation such as contexts or prosodic patterns, prosodic information (which is a part of pragmatics) is the last one to be considered (Chung 2013). However, we claim that utilizing prosodic breaks for disambiguation is a universally observed phenomenon in L1, so even if multiple pieces of information are given, L2 learners consider prosodic breaks as part of disambiguation clues.

(1)   Every horse didn't jump over the fence.
       a.   No horse jumped over the fence. (Total negation = surface scope)
       b.   Some of the horses jumped, but others didn't. (Partial negation = inverse scope)
(2)   All the magnolias won't bloom.
     a. None of the magnolias will bloom (total negation).
     b. Some of the magnolias will bloom and some won't (partial negation).
(3) Minna-wa/-wa ne-nakat-ta.
   all-TT/-CT   sleep-NEG-PAST
  i.   No one slept. (Total negation = TT prosodic pattern)
  ii.   Some slept, and some didn't. (Partial negation = CT prosodic pattern)
(4) Aoi /kuruma-no/ siito-ga   sukida.
  blue car-GEN   seat-NOM   like
  'I like blue car's seat.' (= type 1 meaning) or 'I like a car seat whose color is blue.' (= type 2 meaning)
  (Prosodic breaks (indicated by the slash) disambiguate the interpretations.)
(5) Pearson correlation analysis of prosodic patterns and scope interpretations

Level	Total negation x TT prosody	Partial negation x CT prosody
1	r = -.013, N = 16, p = .961	r = .254, N = 16, p = .343
2	r = .314, N = 8, p = .448	r = .449, N = 8, p = .264
3	r = -.026, N = 13, p = .932	r = .065, N = 13, p = .834
4	r = .259, N = 15, p = .352	r = .088, N = 15, p = .756

(6) Pearson Correlation analyses for the structurally ambiguous interpretations and their prosodic patterns (i.e., prosodic breaks)

Level	Type 1	Type 2
1	r = .571, N = 16, p = .021	r=.751, N = 16, p = .001
2	r = .826, N = 8, p = .012	r = .871, N = 8, p = .005
3	r = .729, N = 13, p = .005	r=.648, N = 13, p = .017
4	r = .792, N = 15, p = .000	r =.694, N = 15, p = .004

(selected) References: Jackendoff, R. (1972). *Semantic interpretation in generative grammar*. Cambridge: MA: MIT Press; Kuno, S. (1973). The structure of the Japanese language. Cambridge, MA: MIT Press; Syrett, Kristen, Georgia Simon, and Kirsten Nisula. (2015). Prosodic disambiguation of scopally ambiguous quantificational sentences in a discourse context. *Journal of Linguistics*.

The Course of V-V Compound Acquisition in Child Japanese

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This paper reports new findings of a language development study examining complex predicates, especially, V-V compound verbs in Japanese by Japanese-speaking children. V-V compounds (henceforth, VVCs) are morphologically composed of two verbs such as *osi-taosu* 'push-topple' and *tabe-hazimeru* 'eat-begin'. However, as reported in Kageyama (1993), the internal structure and the semantic relation between Verb 1 (V1) and Verb 2 (V2) differs from VVC to VVC. The internal structure of a VVC can be tested empirically (e.g., substitution with *soo-su* 'do so' like *osi-taosu* > **soo-si taosu/ tabe-hazimeru* > ✓*soo-si hazimeru*). In addition, *osi-taosu* denotes 'topple x by pushing x', whereas *tabe-hazimeru* indicates 'x begins the event that x eats something'. Previous studies regarding the acquisition of VVCs (Okubo 1967, among others) demonstrate that the VVCs produced by children show very similar patterns despite divergent input. More precisely, 1) all children produced VVCs from the age of two. 2) The earliest VVCs to appear are those which involve geminate consonants such as *buk-kowasu* (< *buti-kowasu*) 'hit-break' (Appendix A, (1)). 3) VVCs whose V2 is a motion verb were produced by nearly all children (Appendix A, (2)). This suggests that a potential acquisition order of VVCs from simplex form to complex form. However, the exact order has yet to be revealed.

In this paper, I report three new findings. First, I propose that the three patterns above can also be observed in other children's production: Aki (Miyata 2004a), Tai (Miyata 2004b), and Sumihare (Noji et al. 2004) all of whom I examined using CHILDES (MacWhinney 2000, Oshima-Takane et al. 1998) (Appendix B). Second, the second pattern, according to which children produce VVCs which involve geminate consonants in the earliest stage of acquisition, is also supported from a quantitative perspective (Binomial test, *p*<.05 (Snyder 2007)) (Table1). Third, in addition to child speech, I extended the analysis to child-directed adult speech. This revealed that while the VVCs produced by children are also produced in adult speech, child-directed adult speech also included a variety of VVCs not observed in child speech.

Additionally, I show that there is a pattern wherein child-produced VVCs are largely restricted to those whose V2s are motion verbs. In following, I also looked to see if there was a period in which the relevant motion verbs were only used independently as single-word verbs in order to check for an acquisition order. This revealed that all VVCs whose V2s are motion verbs appear later than the V2 used as a single-word verb (Appendix C). Given these trends, I propose the following course of VVC acquisition in terms of morphological complexity: children produce 1) single motion verbs, 2) VVCs which involve geminate consonants and whose V2 is a motion verb, and 3) VVCs which do not involve geminate consonants and whose V2 is a motion verb. Consequently, I would support Brown's (1973) proposal, from the viewpoint of acquisition of Japanese VVCs, that children gradually acquire words in order of morphological complexity.

Appendix A: (1) are VVCs which involve geminates / (2) are VVCs whose V2s are motion verbs.

(1) a. hi**p-p**aru   [pull-stretch]   (drag)   (Y: 2;6 to 3;0 years old)   (Okubo1967)

    b. bu**t-t**ukeru   [hit-attach]   (catch on)   (child: 2;0 to 2;11 years old)   (Murata1970)

    c. bu**k-k**owasu   [hit-break]   (break)   (child: 2;0 to 2;11 years old)   (Murata1970)

    d. hi**k-k**aku   [pull-scratch]   (scratch)   (child: 2;0)   (Maeda and Maeda1996)

    e. hi**k-k**akaru   [pull-hang]   (be caught)   (child: 2;4)   (Maeda and Maeda1996)

(2) a. tobi-<u>dasu</u>   [fly-bring.out]   (fly **out**)   (Y: 2;0 to 2;5 years old)   (Okubo1967)

    b. moti-<u>ageru</u>   [hold-raise]   (lift **up**)   (child: 2;0 to 2;11 years old)   (Murata1970)

    c. nage-<u>dasu</u>   [throw-bring.out]   (throw **out**)   (child: 2;0 to 2;11 years old)   (Murata1970)

    d. kami-<u>tuku</u>   [bite-attach to]   (bite **to**)   (child: 2;1)   (Maeda and Maeda1996)

    e. bura-<u>sagaru</u>   [dangle-descend]   (hang **down**)   (child: 2;11)   (Maeda and Maeda1996)

Appendix B: A part of production data: (3) is Aki's, (4) is Tai's, and (5) is Sumihare's data.

(3) a. hit-tuku   [pull-attach](attach **to**) (2;07:12) b. tobi-dasu [fly-bring.out] (fly **out**) (2;07:26)

(4) a. wari-komu [split-into]   (split **into**)(2;02:13) b. hit-tuku   [pull-attach] (attach **to**) (2;07:00)

(5) a. hik-komu   [pull-into]   (retire **to**)   (2;03:30) b. koge-tuku [burn-attach]   (burn **to**) (2;04:27)

Table1	VVCs which involve geminate consonants vs. VVCs which do not		
	Relative frequency		
Child's name	geminates	not geminates	Significance probability
Tai	0.774	0.226	$p < .05$
Sumihare	0.595	0.405	$p < .001$
Child (observed by Maeda and Maeda 1996)	0.489	0.511	$p < .001$

Appendix C: Single motion verb to VVCs whose V2 is directed motion verb.

(6) a. tuku (attach)   (2;3) > kut-**tuku**   (attach)   (2;5) / hit-**tuku**   (attach)   (2;7)   (Aki)

    b. dasu (bring.out) (2;4) > hami-**dasu** (stray onto) (2;7)   / tobi-**dasu** (jump out) (2;7) (Aki)

    c. tuku (attach)   (1;6) > kut-**tuku**   (attach)   (1;9)   (Tai)

    d. dasu (bring.out) (1;8) > moti-**dasu** (take out)   (2;7)   (Tai)

    e. tuku (attach)   (1;6) > kut-**tuku**   (attach)   (2;4)   (Sumihare)

    f. dasu (bring.out) (2;1) > hoori-**dasu** (throw out)   (2;10) / tobi-**dasu** (jump out)   (2;10)

                                    (Sumihare)

Selected References

Brown, Roger. 1973. *A first language: The early stages*. Cambridge, MA: Harvard University Press.

Kageyama, Taro. 1993. *Bunpo to gokeisei* [Grammar and word formation]. Tokyo: Hituzi Syobo.

MacWhinney, Brian. 2000. *The CHILDES Project: Tools for Analyzing Talk* (3rd ed.), Vol.2. *The Database*. Mahwah, N.J.: LEA.

Okubo, Ai. 1967. *Yoojigengono hattatu* [Child language development]. Tokyo: Tokyodosyuppan.

Oshima-Takane, Yuriko, MacWhinney Brian, Shirai Hidenori, Miyata Susanne, and Naka Noriko. (Eds.) 1998. *CHILDES for Japanese* (2nd ed.). The JCHAT Project. Nagoya: Chukyo University.

Snyder, William. 2007. *Child language: The parametric approach*. Oxford: Oxford University Press.

The Acquisition of Telicity by Japanese Learners of English

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How telicity is determined varies among languages. In English, telicity of non-stative transitive verbs (NSTV) is calculated in an agreement relation with object DPs as in (1): The [+/-bounded] of DPs decides the [+/- telic] of AspP/vP (Travis, 1992; Slabakova, 2001). The [+/-bounded] of DPs is further attributed to two features: [+/-singular] of Num and [+/-definite] of D (Jackendoff, 1996), which operate at two levels: First, Num feature [+singular] carries [+bounded] to DP (see (2a)); otherwise, it is [-bounded] (see (2b)). Second, the D feature [+definite] functions to (re)write [+/-bounded] into [+bounded] (see (2c)); if D is [-definite], [+/- bounded] of DP relies on Num. Because D and Num are obligatorily projected in English, the telicity of NSTV is determined in syntax.

In Japanese, telicity is calculated in syntax in some cases: When the object noun phrase of NSTV has a demonstrative or an existential quantifier, the distribution of [+/- telic] is the same as in English (cf. (3)) when DP and NumP are projected (cf. Wakabayashi, 1997). However, when a nominal phrase has no such item (i.e., bare NP) (cf. Noguchi, 1997), [+/-bounded] is unspecified (cf. (4)) and the telicity is left open to pragmatics.

An experiment was carried out with eight native controls (NC) (n = 8) and 25 Japanese learners, divided into Elementary (EL) (n = 8), Lower Intermediate (LI) (n = 9), and Upper Intermediate (UI) (n = 8) groups, to examine their interpretation of [+/-telic] of sentences with in/definite, demonstrative and quantified DPs (*the NP, this NP, these NPs, the NPs,* and *NPs*). A judgement task with a Likert scale (-2 to +2) was administered: Two-clause sentences were judged as to how natural they were in meaning. The verbs were all action NSTV (*read, paint, erase*, and *eat*).

The results (Figures 1) of an ANOVA and Tukey-Kramer's post-hoc HSD tests show that i) NC answered as expected; ii) EL more or less accepted all; iii) LI distinguished [+/-singular] but not [+/-definite]; and iv) UI judged all correctly, except *the N$_{PL}$*. These data are explained as follows: EL showed no L1 transfer and did not calculate [+/-singular] [+/-definite] because these features were defective in their grammar; LI have acquired [+/-singular] but not [+/-definiteness] to calculate [+/-telic]; UI calculated [+/-telic] based on both [+/- singular] and [+/- definite] but still have difficulty with *the N$_{PL}$*, because Japanese has no word equivalent to *the* that reflects [+definite] only. In short, the acquisition of [+/- singular] and [+/- definite] is gradual, and the calculation of [+/- telic] also incremental; From a wider perspective, the Full Transfer/Full Access Hypothesis (Schwartz & Sprouse, 1996) is not supported; but L1 transfer takes place along with gradual learning/acquisition of features and lexical items in SLA (Wakabayashi, 1997).

Agree

(1) a. telic events: [$_{AspP}$ DP$_{obj[bounded: +]}$ [$_{Asp'}$V$_{[telic: +]}$ [$_{VP}$t$_V$ t$_{DPobj}$]]]

   b. atelic events: [$_{AspP}$ DP$_{obj[bounded: -]}$ [$_{Asp'}$V$_{[telic: -]}$ [$_{VP}$t$_V$ t$_{DPobj}$]]]

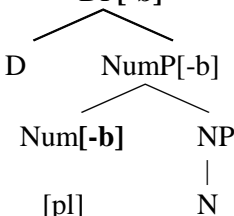(2) a. Singular Count Noun   b. (bare) Plural Count Noun   c. Definite plural

```
      DP[+b(ounded)]              DP[-b]                    DP[+b]
       /      \                   /    \                    /      \
      D      NumP[+b]            D    NumP[-b]          D[+b]     NumP[-b]
           /       \                  /      \                    /      \
  a/an  Num[+b]   NP           Num[-b]       NP       the     Num[-b]     NP
            |      |               |          |                  |         |
          [sg]    N              [pl]         N                [pl]        N
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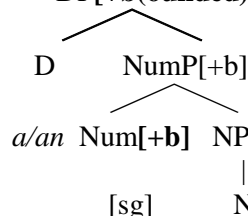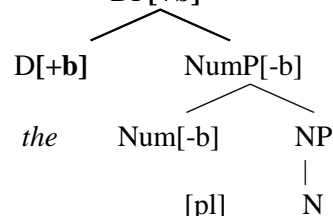
(3) With demonstratives and existential quantifiers

   a. Taro-wa ??*kono*/??*korerano*/ᵛ *takusanno* ringo-o tabe-ta ga,   tabe-owara-nakat-ta.
      Taro-$_{TOP}$ this/these/many   apple-$_{ACC}$ eat-$_{PAST}$ but, eat-finish-$_{NEG-PAST}$
   b. Taro ate ??*this*/??*these*/ᵛ *many* apple(s), he did not finish eating it.

(4) Bare noun

   Hanako-wa ringo-o   tabe-ta. Sikasi ringo-wa mada nokotteiru.
   Hanako-$_{TOP}$ apple-$_{ACC}$ eat-$_{PAST}$. But   apple-$_{TOP}$ still   remains
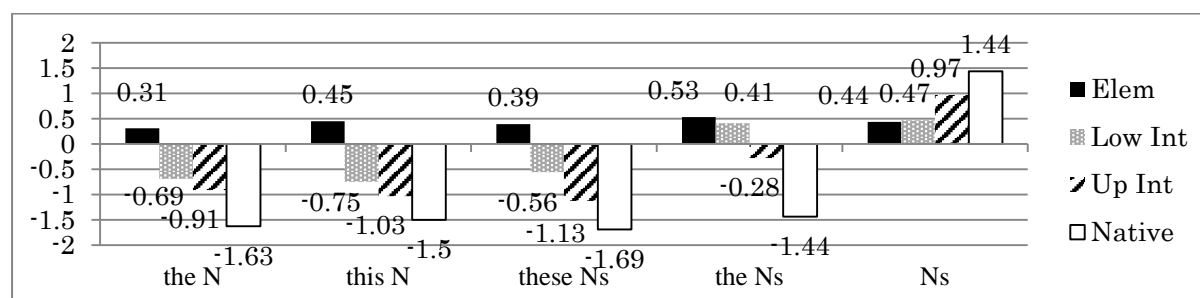   *lit* 'Hanako ate apple/-s, but apple/-s still remain(s).'

Figure1. Mean responses

References

Jackendoff, R. (1996). The proper treatment of measuring out, telicity, and perhaps even quantification in English. *Natural Language and Linguistic Theory* 14: 304-54.

Noguchi, T. (1997). Two types of pronouns and variable binding. *Language* 43:770–797.

Schwartz, B. & Sprouse, R. (1996). L2 cognitive states and the full transfer/full access model. *Second Language Research 12*, 40-72.

Slabakova, R. (2001). *Telicity in the second language*. Amsterdam: John Benjamins.

Travis, L. (1992). Inner Aspect and the Structure of VP. *Cahiers Linguistique de l'UQAM*. 1: 130–146.

Vainikka, A. & Young-Scholten, M. (1996a). Gradual development of L2 phrase structure. *Second Language Research* 12, 7–39.

Wakabayashi, S. (1997). The acquisition of functional categories by Japanese learners of English. PhD dissertation, University of Cambridge.

L1/L2 Influence on the Perception of Motion Events: Evidence from Eye Movements

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Languages vary in how motion events are encoded. In manner-oriented languages (English), manner of motion is prototypically encoded via the main verb while Path information is usually realized via modifiers (e.g., "He is skating (manner) to the hockey net (path)"). In path-oriented languages (Greek, Korean) the relative prominence of Path/Manner information is reversed [1] [2]. Eye-tracking data suggests that the way motion events are encoded in one's native language can influence visual attention in the perception of motion events [3] but that such effects appear to index the optional recruitment of linguistic encoding mechanisms in ways that are contingent on task demands [3] [4]. English and Greek native speakers are more likely to attend early on to those features of short animations of motion events which their language encodes more prominently[3]. However, this language-specific influence only manifested when participants had to overtly describe the events and not when the task was simply to remember the animations for a latter memory test. Using a similar approach as in [3], the present study investigated how such cross-linguistic differences may influence visual attention in sequential Korean/English bilinguals where the L1 is Path-oriented (Korean) and the L2 is Manner-oriented (English). English-L1 monolinguals and Korean-L1/English-L2 sequential bilinguals viewed short animations of motion events and were instructed either to simply view the motion event animations for a later memory test (Non-Linguistic/NL task) or to describe the animations (Linguistic/L task). Among a range of behavioral/eye-tracking results that were largely consistent with previous work, we also found that when Korean-L1/English-L2 bilinguals were required to describe the motion events in English they showed an early relative increase in their path relative to manner fixations, consistent with an L1-based linguistic encoding strategy which we suggest arises to meet the demands of planning utterances in the later learned, less proficient language.
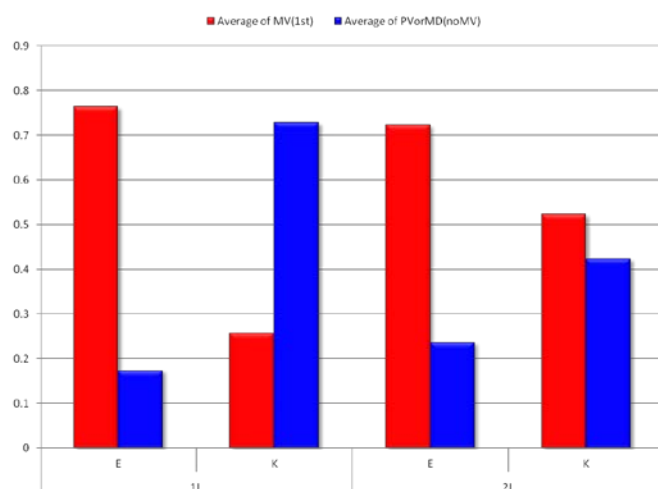
Figure1. Verbal Description Behavior (Manner Verb (MV) versus Path Verb (PV) productions)
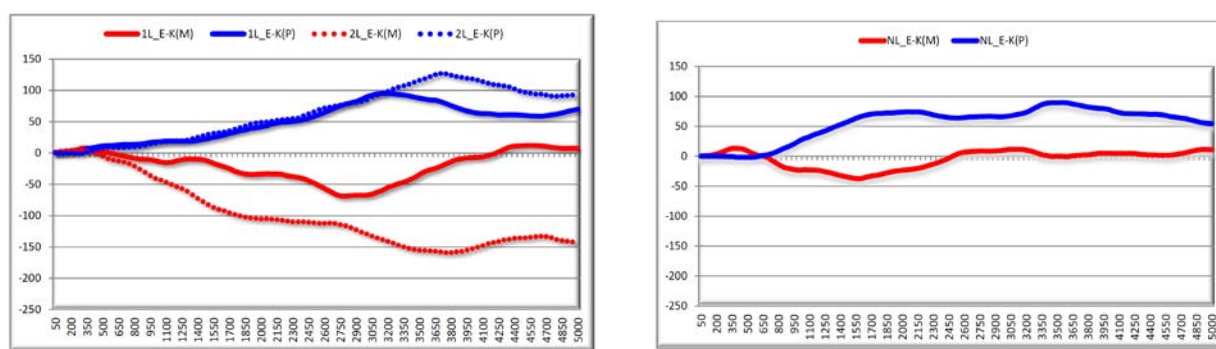

Figure 2: Group differences *(monolingual – bilingual)* for cumulative fixation times for Linguistic (LEFT) and Non-Linguistic (RIGHT) blocks.

References

[1] Talmy, L. (1985). Lexicalization patterns: Semantic structure in lexical forms. In T. Shopen (Ed.), *Grammatical categories and the Lexicon* (Vol.III, pp. 57–149). Cambridge: Cambridge University Press.

[2] Slobin, D. (2000). Verbalized events: A dynamic approach to linguistic relativity and determinism. In S. Niermeier & R. Dirven (Eds.), *Evidence for linguistic relativity*, (pp. 107-138). Amsterdam: John Benjamins.

[3] Papafragou, A., Hulbert, J., & Trueswell, J. C. (2008). Does language guide event perception? Evidence from eye movements. *Cognition, 108,* 155–184.

[4] Trueswell, J. C., & Papafragou, A. (2010). Perceiving and remembering events cross-linguistically: Evidence from dual-task paradigms. *Journal of Memory and Language, 63*, 64-82.

Aspect and Quantification in Child Cantonese:
The Referential Effects of Verbal Affixes in Children's Production

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In languages without an article system to express definiteness, verbal affixes may serve a similar function in exerting referential effects on the interpretation of object nominals (Krifka 1992; Filip 1999; Partee 1999). In Slavic languages such as Polish (Wierzbicka 1967; Filip 2005) and Czech (Filip 2001), the presence of a perfective prefix would induce a definiteness interpretation on bare mass and bare plural nominals bearing an incremental-theme role (1).

Postverbal affixes in Cantonese are found to exhibit similar referential effects. In (2), the direct object nominal in the form of [classifier-noun] can receive either an indefinite reading or a definite reading in the absence of a verbal suffix. When the universal quantifier affix *saai3* is used, the object nominal must be definite (3); when the perfective aspect marker *zo2* or the completive aspect marker *jyun4* is used, the indefinite reading is preferred (4-5).

This study investigates children's knowledge of the referential effects of verbal affixes, as reflected in their language production, focusing on the universal quantifier *saai3*, the perfective aspect marker *zo2*, and the completive aspect marker *jyun4*. We examined the spontaneous use of the three affixes by ten children aged between one and three-years-and-a-half from two longitudinal naturalistic corpora on Hong Kong Cantonese: CANCORP (Lee and Wong 1998) and HKCELA (Lee 2010), and the production of *saai3* by preschool children in an elicitation task. The following issues are addressed:

(i)   Are children sensitive to the role of verbal affixes on the referentiality of object nominals? Could they associate definiteness with the universal quantifier *saai3*, and indefiniteness with the perfective *zo2* and the completive *jyun4*, in naturalistic speech as well as in elicited production?
(ii) What are the input characteristics that may account for children's knowledge of the referential properties of the various affixes?
(iii) To what extent are the patterns of spontaneous and elicited uses consistent with previous experimental findings on children's comprehension of these affixes?

Our findings show that Cantonese-speaking children are able to use the three verbal affixes spontaneously from the age of two. Children are sensitive to the role of verbal affixes on the referentiality of object nominals. Among tokens containing an object nominal, over two-thirds of the object nominal in the *saai3*-sentences denote (or at least favor) a definite interpretation (6), both in spontaneous speech and in elicited production; while over half of those in the *zo2*- and *jyun4*-sentences denote (or at least favor) an indefinite or non-referential interpretation (7-8). The division between definiteness (for *saai3*) and indefiniteness (for *zo2* and *jyun4*) is more visibly observed in adult speech directed to children, with definite nominals accounting for over 70% of the *saai3*-sentences and indefinite or non-referential nominals accounting for over 60% of the *zo2*- and *jyun4*-sentences, suggesting the important role played by adult input in cueing children the relevant semantic distinctions. Our findings further confirm results from previous experimental comprehension tasks on children's sensitivity to the referential effects of verbal affixes and the definiteness requirement on domain selection of *saai3* (Lei and Lee 2015, 2016).

Example from Polish

(1) a. On z.jadł**P** kaszę / oliwki. (from Wierzbicka 1967)
    he.NOM PREF.ate porridge.SG.ACC / olives.PL.ACC
      'He ate (up) (all) the porridge / olives.'
   b. On jadł**I** kaszę. / oliwki.
    he.NOM ate porridge.SG.ACC /
    olives.PL.ACC
     'He was eating/ate (sm/O/the) porridge / olives.'

Examples of Cantonese sentences with [CL-N] object nominal, when used without a verbal suffix and when used with the suffixes *saai3*, *zo2*, and *jyun4*

(2) Keoi seong sik [di daangou].   (3) Keoi sik **saai3** [di daangou].
   s/he want eat CL_PL cake   s/he eat all CL_PL cake
   'S/he wants to eat some/the cakes.'   'S/he ate all of the cakes.'
(4) Keoi sik **zo2** [di daangou].   (5) Keoi sik **jyun4** [di daangou].
   s/he eat PERF CL_PL cake   s/he eat finish CL_PL cake
   'S/he ate some/the cakes.'   'S/he finished eating some/the cakes.'

(6) Examples of *saai3*-sentences with definite object nominal in children's spontaneous speech

  a. CGK (CANCORP) at 02;08;08.   b. CKL (HKCELA) at 02;03;03.
    CHI: Tai **saai3** [nei di] aa3.   CHI: Sik **saai3** [go daaisaigwaa].
      Read all this CL_PL SFP   eat all CL big.watermelon
      '(I) read all of these.'   '(I) ate all of the big watermelon.'

(7) Examples of *zo2*-sentences with indefinite object nominal in children's spontaneous speech

  a. LTF (CANCORP) at 02;03;30.   b. LTF (CANCORP) at 03;01;21.
    CHI: Mgin **zo2** [jat go] aa3.   CHI: Ngo fong **zo2** [go cau pei] aa3.
      disappear PERF one CL SFP   I let.out PERF CL smelly fart SFP
      'One was disappeared.'   'I let out a smelly fart.'

(8) Examples of *jyun4*-sentences with bare object nominal in children's spontaneous speech

  a. LLY (CANCORP) at 02;08;10.   b. LTF (CANCORP) at 03;02;18.
    CHI: Jam **jyun4** [naai] laak3.   CHI: Ngo sik **jyun4** [beng] sin.
      drink finish milk SFP   I eat finish biscuit first
      '(I am) finished drinking milk.'   '(Let) me finish eating biscuits first.'

Selected references

Filip, Hana. 1999. *Aspect, Eventuality Types and Nominal Reference*. New York: Routledge, Taylor & Francis Group (Garland).

Filip, Hana. 2001. "Nominal and Verbal Semantic Structures: Analogies and Interactions." *Language Sciences* 23: 453-501.

Filip, Hana. 2005. "On Accumulating and Having It All: Perfectivity, Prefixes and Bare Arguments." In *Perspectives on Aspect*, edited by Henk Verkuyl, Henriette de Swart and Angeliek van Hout, 125-148. Dordrecht: Kluwer.

Krifka, Manfred. 1992. "Thematic Relations as Links between Nominal Reference and Temporal Constitution." In *Lexical Matters*, edited by Ivan Sag and Anna Szabolcsi, 29-53. Chicago: Chicago University Press.

Partee, Barbara H. 1999. "Nominal and Temporal Semantic Structure: Aspect and Quantification." In *Travaux Du Cercle Linguistique De Prague / Prague Linguistic Circle Papers, Volume 3*, edited by Eva Hajičová, Tomáš Hoskovec, Oldřich Leška, Petr Sgall and Zdena Skoumalová, 91-108. Amsterdam: John Benjamins.

Wierzbicka, Anna. 1967. "On the Semantics of the Verbal Aspect in Polish." In *To Honor Roman Jakobson: Essays on the Occasion of His Seventieth Birthday*, 2231-2249. Den Haag: Mouton.

Early Production of Tone Three Sandhi Avoidance

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Backdrop: The purpose of this study is to investigate the acquisition of Tone Three Sandhi (T3S) by focusing on Mandarin-acquiring children's productions of Tone Three Sandhi Avoidance (T3SA). The results of the study also provide serious challenges to Usage-based approach to language acquisition and support the view of Universal Grammar.

Introduction: T3S: Based on Chen's (2000) Minimal Rhyhmic Unit analysis, the general T3S rule in (1) has three sub-rules in (2) and are exemplified in (3). The fact that T3SA (i.e. (2c)) overlaps with the optional T3S (i.e. (2b)) poses a learnability problem. That is, when children encounter an instance of T3SA (c.f. (3b-c), how do they know that the instance is a real case of T3SA but not a case of optional T3S where the surface tone happens to be a citation tone?

Acquisition of T3S: Earlier studies agree that T3S is acquired early and is completed sometime before the age of three (e.g. Li & Thompson, 1977; Jeng, 1985; Zhu 2002). However, Wang (2011) concluded from her experiments that four-to-six-year-olds do not have adult-like T3S performance.

Hypothesis: T3SA is opaque in ambient environments; it is the most difficult rule to acquire among the three sub-rules in (2). Therefore, the developmental pattern of T3SA will shed light on the debate of the early/late acquisition of T3S. That is, if children could successfully apply T3SA for sentences involving a topic (Liu, 2015) and a relative clause (Liu & Chen, 2016) (c.f. (3b-c)) by the age of four, the view of early acquisition of T3S is supported. In contrast, if children fail to apply T3SA in their productions, Wang's (2011) argument is supported.

Method: The longitudinal data from three Mandarin-acquiring children were included in the analysis. The summary of the data can be found in Table 1. All the surface tones of the critical syllables were judged by two native speakers, who did not know the purpose of this study.

Results: Three T3SA instances involving topics and two T3SA instances involving relative clauses were found. Two of the five instances are shown in (4). The two judges consistently reported that all the critical syllables were Tone 3. The results showed that children acquired T3SA by three, supporting the view of early acquisition of T3S.

Discussion: We claimed that: 1) Wang (2011) failed to observe children's adult-like T3S performance because her experiments consumed much of children's processing burden, which in turn affected their linguistic performance (c.f. Liu & Lee, 2014; Trueswell et al., 1999); 2) Usage-based approach to language acquisition (e.g. Tomasello, 2003) could not accommodate the current results as the environment of T3SA is a subset of the optional T3S and therefore T3SA cannot be acquired solely by experience at early stages; 3) Generative approach to language acquisition (e.g. Chomsky, 1981) could accommodate the current results because syntactic categories are considered innate knowledge, which could assist children's acquisition of T3SA in the early developmental stages; 4) With limited critical instances from spontaneous productions, future cross-sectional experiments would be informative.

(1)   **Tone Three Sandhi** (T3S)

        3 → 2 / __ 3   (Tone 3 becomes Tone 2 when it is followed by another Tone 3.)

(2)   a.   T3S must apply (e.g. the *Lǎo* 'old' and *mǎi* 'buy' in (3a)).

      b.   T3S can be optionally applied (e.g. the *Lǐ* 'Li' in (3a)).

      c.   T3S must not apply (e.g. the *chǐ* 'ruler' in (3b) and the *wǒ* 'I' in (3c))

(3)   **a.**   **Regular sentence**

        Lǎo   Lǐ   mǎi   jiǔ   'Old Li buys wine'
        2   V   2   3   <u>surface tone</u>; V = optional between Tone 2 and Tone 3

      b.   **Topic construction** (c.f. Liu, 2015)

        Suīrán **chǐ**,   Lǐ Míng   yòng-wán le, dànshì   hái-méi shōu-hǎo
                'Although Li Ming finishes using the ruler, he doesn't put it away yet.'
               3   <u>surface tone</u>

      c.   **Relative clause** (c.f. Liu & Chen, 2016)

        Chī-wán   xiāoyè de **wǒ** hěn bǎo   'After eating the night snack, I am full.'
             3   <u>surface tone</u>

(4)   **a.**   **T3SA involving a topic** (from Child A, 34;27)

        Niú**nǎi,**   wǒ de tóngxué   yě   yǒu   'My classmate has milk, too.'
        3   <u>surface tone</u>

      b.   **T3SA involving a relative clause** (from Child C, 32;14)

        Gēge   hē de niú**nǎi** pǎo   chūlái   le   'My brother's milk spilled out.'
        3   <u>surface tone</u>

Table 1: Summary of data in the current study

Child	Gender	Age range (year;month.day)	No. of files	Length of total recordings (hour'minute''second''')
A	Male	1;6.12-3;11.16	35	29'3''35'''
B	Female	1;6.2-3;9.23	35	32'56''35'''
C	Male	1;6.8-3;10.2	42	39'14''57'''
Total			**112**	**101'15''7'''**

References: **Chen**, M. Y. (2000). *Tone sandhi: Patterns across Chinese dialects*. Cambridge, UK: Cambridge University Press. **Chomsky**, N. (1981). *Lectures on government and binding*. Dordrecht: Foris. **Jeng**, H. H. (1985). A developmentalist view of child phonology. *Studies in Language and Literature*, *1*, 1-29. **Li**, C. N., & **Thompson**, S. A. (1977). The acquisition of tone in Mandarin-speaking children. *Journal of Child Language*, *4*(2), 185-199. **Liu**, C.-T. J. (2015). Topics in Tone 3 Sandhi. In The Scottish Consortium for ICPhS 2015 (Ed.), *Proceedings of the 18th International Congress of Phonetic Sciences*. Glasgow, UK: University of Glasgow. **Liu**, C.-T. J., & **Chen**, L. (2016). Sentential Modification and Theories of Tone Three Sandhi. *Paper presented at the 7th conference on Tone and Intonation in Europe* (*TIE 2016*). Cantebury, UK: University of Kent. **Liu**, C.-T. J., & **Lee**, H.-F. H. (2014). Modality and Children's Scope Understanding. *Journal of Psycholinguistic Research*, *43*(5), 487-506. **Tomasello**, M., (2003). *Constructing a language: A usage-based theory of language acquisition*. MA: Harvard University Press. **Trueswell**, J. C., **Sekerina**, I., **Hill**, N. M., & **Logrip**, M. L. (1999). The kindergarten-path effect: Studying on-line sentence processing in young children. *Cognition*, *73*(2), 89-134. **Wang**, C. Y. (2011). *Children's Acquisition of Tone 3 Sandhi in Mandarin*. PhD dissertation, Michigan State University. **Zhu**, H. (2002). *Phonological development in specific contexts: Studies of Chinese-speaking children*. Clevedon: Multilingual Matters Ltd.

Unaccusative and Unergative Verbs in Cild Mandarin:
Revisiting the A-Chain Delay Hypothesis (ACDH)

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Borer and Wexler's (1987) A-Chain Delay Hypothesis (ACDH) predicts that young children would experience difficulty in acquiring the passive and the unaccusative structure, a prediction upheld in later formulation as well (Wexler 2004). This hypothesis has been critically examined in studies either demonstrating early acquisition of the unaccusative structure (e.g. Snyder, Hyams and Crisma 1995; Sano 2000; Sano, Endo and Yamakosho 2001; Shimada and Sano 2007; Friedmann 2007; Becker and Shaeffer 2013) or disconfirming it (e.g. Babyonyshev, Ganger, Pesetsky and Wexler 2001; Machida, Miyagawa and Wexler 2004). Following the semantically-based approach to unaccusativity (Perlmutter 1978, Van Valin 1990, Dowty 1991, Levin and Rappaport Hovav 1995), this study addresses the following issues: (a) which semantic features serve to distinguish unaccusatives from unergatives in Chinese; (b) whether Mandarin-speaking young children exhibit a delay in acquiring unaccusatives.

In Chinese, unaccusative verbs differ from unergative ones in being causativizable (Zeng 2007) (see (1) and (2)). Moreover, unaccusatives can co-occur with a postverbal internal argument subject to the definiteness constraint (Huang 1987, Zhou 1990) (see (3)), whereas unergative verbs can only take a postverbal external argument in special aspectual (Yu 1995) and discourse contexts (Sun and Pan 2012) (see (4)). Moreover, we argue that Chinese patterns with other languages like Dutch (Van Valin 1990) in having telicity as the distinguishing semantic feature for unaccusatives. Specifically, verbs denoting telic events (e.g. *po* 'break', *diao* 'fall', *lai* 'come') (see (5)), whether they have agentive entailments (as identified by imperatives) or not, fall into the unaccusative class (see (6) and (7)). By contrast, verbs denoting internally caused atelic events (e.g. *pao* 'run', *ku* 'cry', *dage* 'hiccup') belong to the unergative class, irrespective of agentivity (see (8)-(10)). Due to the lack of explicit morphology for unaccusativity in Chinese, Mandarin-speaking children may rely crucially on word order and verb meaning to grasp the unaccusative structure.

In this study we examined 95 sessions of longitudinal records of three children growing up in Beijing aged between 1;6 and 2;6. First, all three children exhibited sensitivity to the unaccusative vs. unergative distinction, as they produced a higher proportion of postverbal arguments with telic unaccusatives than atelic unergatives (child1: 5% vs. 0; child2: 19% vs. 0; child3: 26% vs. 11%). Second, compared with unaccusatives with agentive entailments, postverbal arguments occurred much more frequently with unaccusatives having no agentive entailments (child1: 1% vs. 11%; child2: 6% vs. 36%; child3: 0 vs. 41%). Third, an initial analysis shows a greater proportion of postverbal arguments with unaccusatives in child speech than in adult input, either taken as a whole (26% vs. 18%), or considering only those having no agentive entailments (41% vs. 29%). The above findings indicate that Mandarin-speaking two-year-olds fully distinguish unergatives from unaccusatives with no agentive entailments under the joint influences of agentivity and telicity. Moreover, as the children frequently produced non-agentive unaccusatives with either a preverbal or a postverbal argument, they seem to have developed the ability of representing A-chains.

Examples

(1) Lisi e-le   Zhangsan san   tian.

Lisi hungry-Perf   Zhangsan three   day

'Lisi starved Zhangsan for three days.'

(2) *Lisi ku-le   Zhangsan san tian.

Lisi cry-Perf   Zhangsan three day

*'Lisi made Zhangsan cry for three days.'

(3) Lai-le   liang-ge ren/*Lisi.

come-Perf   two-CL man/Lisi

'There came two men/*Lisi.'   (Huang 1987: 241)

(4) *(Anbian)   pa-zhe/*le   yi-zhi   wugui.

Bank-SIDE   crawl-DUR/Perf   one-CL   tortoise

Lit. '*(On the bank) is crawling/*crawled a tortoise.'

(5) Zhangsan   zai shi fenzhong   nei   lai   le.

Zhangsan   at   ten   minute   INSIDE   come   LE

'Zhangsan came in ten minutes.'

(6) a. Kuai   lai!   b. *Kuai   si!

quickly   come   quickly   die

'Come immediately!'   *'Die immediately!'

(7) a. Lai-le   yi-ge   ren.   b. Si-le   yi-ge   ren. come-

Perf   one-CL   man   die-Perf   one-CL   man

'There came a man.'   'A man died.'

(8) a. Kuai   gongzuo!   b. *Kuai   dage!

quickly   work   quickly   hiccup

'Work immediately!'   *'Hiccup quickly!'

(9) a. *Gongzuo-le   yi-ge   ren.   b. *Zhangsan   gongzuo   Lisi.

work-Perf   one-CL   man   Zhangsan   work   Lisi

*'A man worked.'   *'Zhangsan made Lisi work.'

(10)a. *Dage-le   yi-ge   ren.   b. *Zhangsan   dage   Lisi.

hiccup-Perf   one-CL   man   Zhangsan   hiccup   Lisi

*'A man hiccupped.'   *'Zhangsan made Lisi hiccup.'

Selected References

Borer, Hagit and Kenneth Wexler. 1987. The maturation of syntax. In *Parameter setting*, eds. Thomas Roeper and Edwin Williams, 123-172. Dordrecht: Reidel Publishing Company.

Wexler, Kenneth. 2004. Theory of phasal development: Perfection in child grammar. In *Plato's Problem: Papers on Language Acquisition*, eds. Aniko Csirmaz, Andrea Gualmini and Andrew Nevins, 159-209. Cambridge, MA: MIT Press.

Huang, C.-T. James. 1987. Existential sentences in Chinese and (in)definiteness, In *The Representation of (In)definiteness*, eds., Eric Reuland and Alice terMeulen, 226-253. Cambridge, MA: MIT Press.

Zhou, Xinping. 1990. Aspects of Chinese syntax: Ergativity and Chinese phrase structure. Doctoral dissertation, University of Illinois at Urbana-Champaign, Champaign.

Ambiguity in the Processing of Prenominal Mandarin and Japanese Relative Clauses

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Introduction. Japanese and Mandarin both have prenominal relative clauses (RC) which within out-of-the-blue contexts will be temporary ambiguous. Accordingly, speakers might initially assume an incorrect matrix clause interpretation until disambiguating cues can provide a correct RC interpretation, leading to a garden path effect. Prior research using ambiguous contexts has had difficulty attributing ORC difficulty either to memory-based [1] or expectation-based [2] models. Recent research on Mandarin Chinese has revealed that, within unambiguous RCs, ORC difficulty is best explained by expectation-based models [3]. However, previous Japanese studies have chiefly investigated processing within ambiguous RCs [4], and only a few studies have begun to address ambiguity [5]. The current eye-tracking study compares SRC and ORC processing within both ambiguous and unambiguous contexts for L1 Mandarin and L1/L2 Japanese speakers. We aimed to determine if expectation-based models are satisfactory predictors for both Mandarin and Japanese processing within unambiguous contexts.

Methods. *Participants*: L1 Mandarin (N = 37), L1 Japanese (N = 40) and L2 Japanese by L1 Mandarin speakers (N = 37; all N1 *JLPT*) students were recruited from a university in Japan. *Items*: Thirty-two items were built using a 2 (condition: SRC vs. ORC) by 2 (type: Ambiguous vs. Unambiguous) design for both Mandarin and Japanese experiments. *Procedure*: Using EyeLink 1000, participants read single line sentences on a computer monitor and answered comprehension probes.

Selected Findings and Discussion. The results were analyzed using lmer/glmer and log transformed RTs. The results revealed a similar pattern across experiments. Within ambiguous contexts, ORC difficulty appeared later at critical regions (i.e., relativizer or head noun) for both languages. For unambiguous contexts, however, ORC difficulty appeared earlier at these same critical regions. Considering the shift from late to early difficulty for ORCs, expectation-based effects appeared to be more prominent when there was a greater level of anticipation for a head noun in L1 Mandarin and L1/L2 Japanese. However, for L2 Japanese it was shown that participants with increased Japanese-as-a-second-language exposure inside Japan revealed more native-like processing patterns; i.e., they had early ORC difficulty at the head noun within unambiguous contexts. Particularly for Japanese, ambiguous contexts only indicated general comprehension difficulty. This can be attributed to either similarity-based interference or how the RC predicate assigns theta roles to the head noun when the head is not anticipated. For L1 Mandarin there was, however, initial SRC difficulty for both ambiguous and unambiguous contexts, reflecting a general benefit of regularity from the canonical word/semantic order in Mandarin since an unambiguous RC would no longer have a garden path effect. While these experiments do not reveal direct findings for integration, i.e., memory-based effects, there is support for a linear/temporal retrieval metric from previous studies in Mandarin within ambiguous contexts. Taking both the present experiments and previous research into consideration, there appears to be strong evidence for integrated processing models within Mandarin and Japanese. In conclusion, the findings from these experiments reveal that anticipation of a head noun in a Mandarin and L1/L2 Japanese allows for a greater processing impact from expectation-based effects.
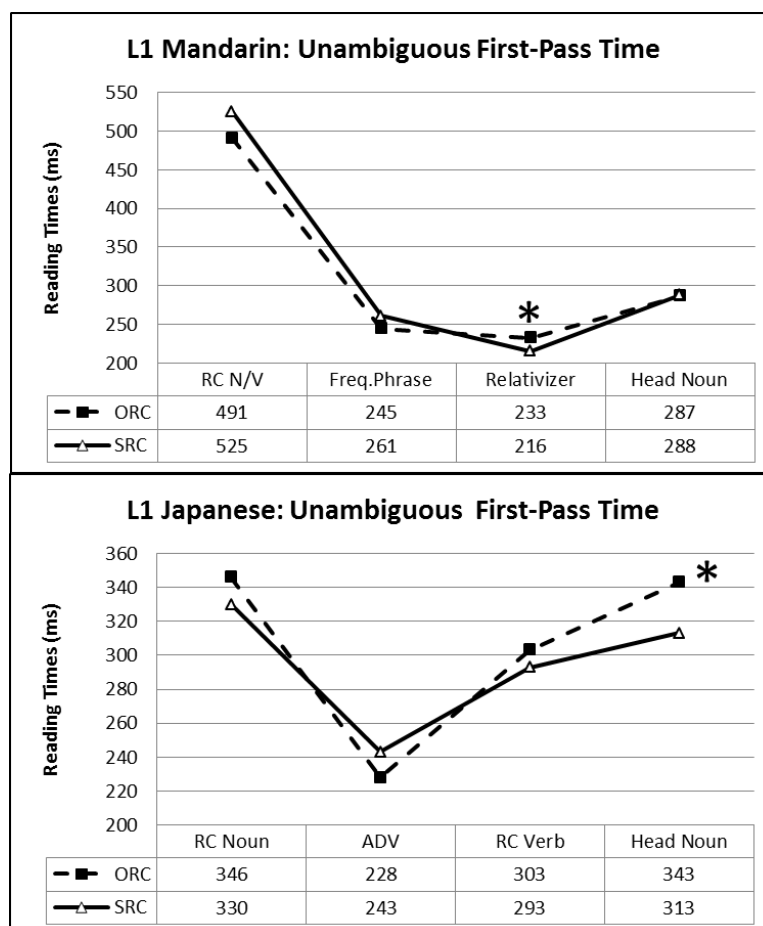
Item examples
Mandarin SRC: (det) [RC last.week gap_i attack senator twice rel] reporter_i met man...
Mandarin ORC: (det) [RC last.week *senator attack gap_i* twice rel] reporter_i met man...
Japanese SRC: (det) [RC last.week gap_i senator-acc twice attack] reporter_i-top man-acc met...
Japanese ORC: (det) [RC last.week *senator-nom gap_i* twice attack] reporter_i-top man-acc met...

L1 Mandarin: Unambiguous First-Pass Time

Reading Times (ms)

	RC N/V	Freq.Phrase	Relativizer	Head Noun
ORC	491	245	233	287
SRC	525	261	216	288

*

L1 Japanese: Unambiguous First-Pass Time

Reading Times (ms)

	RC Noun	ADV	RC Verb	Head Noun
ORC	346	228	303	343
SRC	330	243	293	313

*

Selected References
[1] Gibson E (2000) The dependency locality theory: A distance-based theory of linguistic complexity. Image, Language, Brain: Papers from the First Mind Articulation Project Symposium. Cambridge, MA: MIT Press, pp. 95-126
[2] Hale J (2001, June) A probabilistic Earley parser as a psycholinguistic model. In Proceedings of the second meeting of the North American Chapter of the Association for Computational Linguistics on Language technologies. Stroudsburg, PA: Association for Computational Linguistics, pp. 159-166.
[3] Jäger L, Chen Z, Li Q, Lin CJC, & Vasishth S (2015) The subject-relative advantage in Chinese: Evidence for expectation-based processing. Journal of Memory and Language 79: 97-120. doi:10.1016/j.jml.2014.10.005
[4] Ueno M, & Garnsey SM (2008) An ERP study of the processing of subject and object relative clauses in Japanese. Language and Cognitive Processes 23.5: 646-688. doi:10.1080/01690960701653501
[5] Miyamoto ET (2016) Working memory fails to explain subject-extraction advantages (and object-extraction advantages) in relative clauses in Japanese. In Proceedings of the 18th Annual International Conference of the Japanese Society for Language Sciences, pp. 25-28.

Incremental and Predictive Processing of English Relative Clauses in Second Language

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This study conducted two self-paced reading experiments on Japanese learners of English with intermediate proficiency to address whether second language (L2) learners process English relative clauses (RCs) incrementally and predictively. To understand RCs, such as '*the reporter that the senator attacked* <gap> *…* ', the parser needs to build a filler-gap dependency between '*the reporter*' (filler) and the gap precisely. A lot of works have indicated that native speakers of English posit a gap at the direct object position incrementally after reading an embedded verb (Active Gap Filling; Clifton and Frazier, 1989). Furthermore, Omaki et al. (2015) reported that they predictively postulate an object gap even in advance of the appearance of the embedded verb that (potentially) hosts a gap (Hyper-Active Gap Filling).

As for L2 learners' RC processing, Omaki and Schulz (2011) showed that Spanish learners of English also start the dependency formation immediately after the appearance of the verb. However, previous studies have argued that syntactic similarity between the native language (L1) and L2 could affect the L2 processing. Given that Spanish has overt *wh*-movement like English, but Japanese does not, it is uncertain whether Japanese learners also process English RCs incrementally. Moreover, it has not been examined whether L2 learners formulate the filler-gap dependency predictively. In the present study, Experiment 1 investigated whether Japanese learners of English process English RCs incrementally and Experiment 2 examined whether they process English RCs predictively.

The experimental sentences used in Exp. 1 are shown in (1). In (1b) and (1d), the sentences include RCs, so the parser has to build a filler-gap dependency. Plausibility between the verb and its arguments varies between (1b) and (1d): plausible in (1b) and implausible in (1d). As shown in Figure 1., the RT at the verb region was longer in (1d) was longer than in (1c), due to the implausible relation between the verb and its arguments, but such a difference was not observed between (1a) and (1b). This suggests that Japanese learners posit an object gap incrementally before checking whether the gap is actually located at the direct object position like the native speakers and Spanish learners do.

The examples in (2) are the experimental sentences of Exp. 2. (2b) and (2d) include RCs, and the embedded verb is transitive in (2b) and intransitive in (2d). If the learners postulate a gap and predict that the upcoming verb is transitive before reading the verb, the RT of the verb in (2d) would be longest because of the expectation mismatch regarding transitivity. However, such a RT difference was not observed in Exp. 2. Thus, there is no evidence that Japanese learners process English RCs predictively.

To conclude, this study demonstrates that L2 learners process RCs incrementally regardless of differences in syntactic properties between their L1 and L2, and that there is a possibility that L2 learners (at least Japanese learners) do not process RCs predictively.

Examples

(1)

a. Plausible/ Non-RC ： The parents of the infant did not <u>feed</u> ⋯

b. Plausible/ RC：The infant$_i$ **who** the parents did not <u>feed</u> **GAP**$_i$ ⋯

c. Implausible/ Non-RC ： The infant of the parents did not <u>feed</u> …

d. Implausible/ RC ： The parents$_i$ **who** the infant did not <u>feed</u> **GAP**$_i$ …

(2)

a. Transitive/ Non-RC ： The colleague of the worker did not <u>respect</u> or scorn ...

b. Transitive/ RC ： The colleague$_i$ **who** the worker did not <u>respect</u> or scorn **GAP**$_i$ ...

c. Intransitive/ Non-RC ： The colleague of the worker did not <u>talk</u> or debate about …

d. Intransitive/ RC ： The colleague$_i$ **who** the worker did not <u>talk</u> or debate about **GAP**$_i$ ...
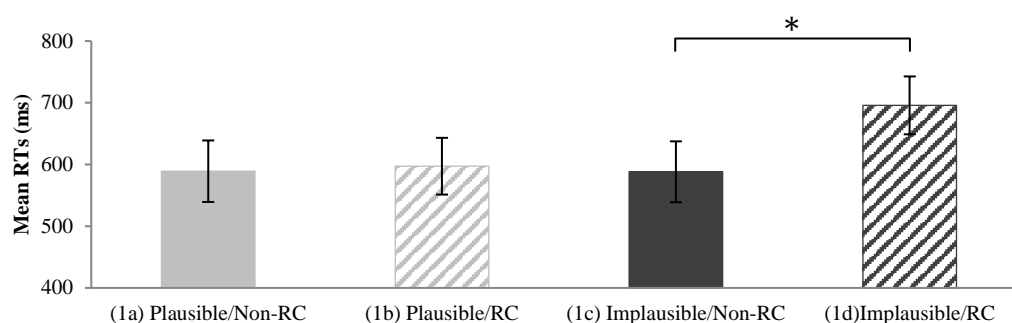
Figure 2. Mean RT (ms) at the embedded verb region in Exp. 1.

Error bars indicate standard error of the mean.
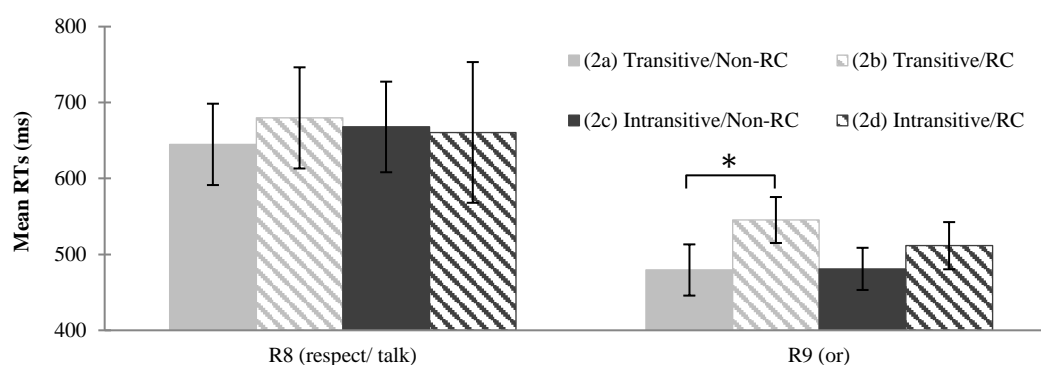
Figure 2. Mean RT (ms) at the embedded verb and the spill-over regions in Exp. 2.

Error bars indicate standard error of the mean.

References

Clifton, Charles and Lyn Frazier (1989) Comprehending sentences with long-distance dependencies. In: Greg N. Carlson and Michael K. Tanenhaus (eds.) *Linguistic Structure in Language Processing*: 94–128. Dordrecht: Kluwer.

Omaki, Akira, Ellen F. Lau, Imogen Davidson White, Myles L. Dakan, Aaron Apple and Colin Phillips (2015) Hyper-active gap filling. *Frontiers in Psychology* 6: 384.

Omaki, Akira and Barbara Schulz (2011) Filler-gap dependencies and island constraints in second language sentence processing. *Studies Second Language Acquisition* 33: 563–588.

Children's Early Acquisition of Cleft Sentences in Japanese

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1. Introduction: This study reports our experimental results and shows that children acquiring Japanese were able to comprehend cleft sentences correctly with previous contexts with pictures, contrary to the results of previous studies (Bever 1979, Lempert&Kinsbourne 1980, Dansako&Mizumoto 2007).

2. Previous Studies: It has been reported that children acquiring English have problems with object clefts. In object clefts (OCs), an object is focused (ex. It is <u>a rabbit</u> that the bear chased.) In subject clefts (SCs), a subject is focused. Dansako&Mizumoto (2007) (D&M) have reported that Japanese children also have problems with OCs. Japanese clefts allow two types, Case-marked and non-Case-marked clefts, and the presence or absence of movement in each type has been discussed by Hoji 1987, Cho et al. 2008, Hiraiwa&Ishihara 2012 among others. Recently, Aravind, et al. (2016) reported that English-speaking children become successful with SCs and OCs when previous contexts match with presupposition of clefts and they were given with pictures. We examined Japanese children's comprehension of non-Case-marked clefts as in D&M. In our first experiment, we adopted Aravind et al.'s (2016) methods to examine Japanese children's comprehension of true clefts. In our second experiment, we examined whether children could reject false clefts with matched contexts and pictures.

3. Experiments: We tested 37 children (4;2-6;4) in total using the Truth Value Judgment Task(TVJT). In Experiment 1, we tested 11 children (4;3-6;4). Following Aravind et al. (2016), a child was given two pictures in sequence in each story (ex.(1),(2)). In the first picture, one of the two animals was hidden with a gray box, and a child heard a matched or mismatched context for the cleft sentence which was then given in the second picture. In the second picture, the child could see who was hidden in the gray box. The child was then asked to judge whether the true SC or true OC was true or false. Since the children performed well with true clefts, we expected they would be able to correctly reject false clefts. We conducted Experiment 2 with 26 children (4;2-6;4) and 5 adults using the TVJT. As in Experiment 1, we used two pictures in each story. 3 false SCs and 3 false OCs were tested with a matched context in the first picture and a false test sentence with the second picture (ex.(3),(4)).

4. Results and Discussion: In Experiment 1, the children performed quite well with true SCs and true OCs with the matched contexts (SCs: 90.9%, OCs: 97.7%, see Table 1), and they were hardly affected by mismatched contexts. In Experiment 2, the children remarkably rejected false SCs and false OCs quite well (SCs: 85.9%(67/78), OCs: 93.6%(73/78), see Table 2). Even 4-year-olds correctly rejected false OCs 89.7%(35/39) of the time. This result is much higher than D&M's 4-year-olds' results of OCs, i.e. 41.7%(15/36) of the time. Therefore, our experiments have shown that Japanese children could comprehend clefts well when they were given matched contexts with pictures and that they have knowledge of cleft sentences early in Japanese.
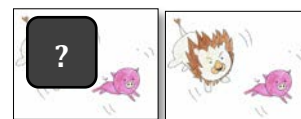
<Appendix>
(1) **Subject clefts (SCs) with matched contexts**
Matched context: Look! Someone is chasing the pig.
Test sentence: Butasan-o oikake-teiru no wa   lionsan da.
                 Pig-Acc   chase-Prog C Top   lion   Cop
                 'It's a lion that is chasing the pig.'
(2) **Object Cleft (OC) with mismatched contexts**
Mismatched contexts: Look! Someone is poking the panda.
Test sentence: Kumakun-ga   tutui-teiru no wa pandasan da.
                 Bear-Nom   poke-Prog C Top panda   Cop
                 'It's a panda that the bear is poking.'

Table 1: The percentages of children's correct responses in Experiment 1
(M=Matched, Mis=Mismatched, SCs=subject clefts, OCs=object clefts)

	M, SCs	Mis, SCs	M, OCs	Mis, OCs
4- -year-olds (N=4)	75% (3/4)	75% (6/8)	93.8% (15/16)	91.7% (11/12)
5-year-olds (N=5)	100% (5/5)	90% (9/10)	100% (20/20)	100% (15/15)
6-year-olds (N=2)	100% (2/2)	50% (2/4)	100% (8/8)	66.7% (4/6)
Total	**90.9%** (10/11)	**77.3%** (17/22)	**97.7%** (43/44)	**90.9%** (30/33)

(3) Subject Cleft (False)
Context: Look! Someone is chasing the pig.
Test sentence: Lionsan-o oikake-teiru no wa butasan da.
                 Lion-Acc   chase-Prog C Top pig   Cop
                 'It's a pig that is chasing the lion.'
(4) Object Cleft (False)
Context: Look! A bear is poking someone.
Test sentence: Pandasan-ga tutui-teiru no   wa   kumasan da.
                 Panda-Nom   poke-Prog C   Top   bear   Cop
                 'It's a bear that the panda is poking.'

Table 2: The percentages of children's correct responses in Experiment 2

	4-year-olds (N=13)	5-year-olds (N=11)	6-year-olds (N=2)	Total (N=26)	Adults (N=5)
False SCs	**71.8%** (28/39)	**100%** (33/33)	**100%** (6/6)	**85.9%** (67/78)	**100%** (15/15)
False OCs	**89.7%** (35/39)	**97.0%** (32/33)	**100%** (6/6)	**93.6%** (73/78)	**100%** (15/15)

<Selected References>
Aravind, Athulya, Eva Freedman, Martin Hackl and Ken Wexler. 2016. "Subject-Object Asymmetries in the Acquisition of Clefts." *BUCLD* 40, 1-17.
Cho, Shungdai, John Whitman and Yuko Yanagida. 2008. "Clefts in Japanese and Korean." *Annual Meeting of the Chicago Linguistics Society*, Volume 44, Number 1, 61-77.
Dansako, Masahiro and Gou Mizumoto. 2007. "Youzi no Bunretubun no Rikai ni tuite (On the Comprehension of Cleft Constructions in Japanese)." *Kyushu University Papers in Linguistics* 28.
Hiraiwa, Ken and Shinichiro Ishihara. 2012. "Syntactic Metamorphosis; Clefts, Sluicing, and In-Situ focus in Japanese." *Syntax* 15-2, 142-180.
Hoji, Hajime. 1987. "Japanese clefts and chain binding/reconstruction effects." Paper presented at *WCCFL*6.

Second Language Acquisition of Japanese *So*-series DPs

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This study investigates applicability of the Interface Hypothesis (henceforth IH, Tsimpli & Sorace 2006) through investigating acquisition of two different domains of knowledge of Japanese demonstrative pronouns by L1 English speakers of L2 Japanese. The IH suggests that external interfaces, such as discourse-syntax interface, are persistently problematic for L2ers because of their limited processing resources, while other domains of knowledge are not problematic. The IH gives an interesting account of optionality at the end state L2 grammar; nevertheless, its applicability has been a matter of debate. Some empirical studies (e.g. Belletti, Bennati & Sorace 2007, Valenzuela 2006) support the IH, while others (e.g. Rothman 2009, Ivanov 2010) do not.

In order to settle this debate, this study focuses on two functions of the Japanese demonstrative pronouns, *so*-series DPs. The fist function relates to discourse. The demonstrative *sono* 'that' and a following NP refers to an entity which either the speaker or the listener is not familiar with, as shown in (1). In contrast, *ano* 'that' and a following NP is used when the referent is known to both the speaker and the listener (Kuno 1973, Hoji 1991). The second function relates to semantics. The *so*-series DPs allow a bound variable interpretation while *a*-series DPs do not, as in (2) (Hoji 1991, Noguchi 1997, Kurafuji 1998).

In Japanese language classrooms, *sono* is introduced as a medial demonstrative and its discourse and semantic functions are not taught. The English demonstrative 'that' generally does not have these functions with some exceptions (Elbourne 2005). Therefore, it is interesting to investigate whether L1 English speakers of L2 Japanese can acquire this property. Nevertheless, to the best of the author's knowledge, no previous study has examined it. If the IH is applicable, acquisition of the discourse function, which is supposed to be syntax-discourse category, can be a persistent problem for L1 English speakers of L2 Japanese. By contrast, acquisition of the semantic function, which is supposed to pure semantics or syntax-semantics category, is not problematic.

The experiment was conducted on L1 English speakers of Japanese (n=26 in total, 14 advanced and 12 intermediate learners) and native Japanese speakers (n=27) to compare their knowledge of the two functions of the demonstrative pronouns. The experiment consisted of (i) an interpretation task to test the knowledge of the discourse function, in which the participants chose either *sono* or *ano* in given contexts and (ii) an antecedent choice task to test the knowledge of the semantic function adapted from Kanno (1997) with modifications. The results so far show delay of the knowledge of the discourse function, suggesting that L2ers have more problems with syntax-discourse category than (syntax-)semantics category. These results are in line with the IH, assuming that the IH is applicable not only to end-state L2 grammar but also intermediate/advanced levels of L2 grammar since the problems with interfaces do not happen out of the blue (White 2011).

(1) Kinoo   Yamada-san to   yuu ni aimasita. Sono (*ano) hito, miti ni
Yesterday Yamada-Mr that call to met   that   that person road by
mayotte komattei-ta   node, tasukete-agemasi-ta.
lose   have-Pst difficulty   since help-give-Pst
'Yesterday, I met a man by the name of Yamada. Since he lost his way and was having difficulties, I helped him.

(2) Dono titioya$_i$-mo sono$_{i/j}$/ano$_{*i/j}$ itibansita-no musume-o   kawaigaru
Every father-∀   sono/that   youngest-Gen daughter-Acc love
'Every father$_i$ loves sono$_{i/j}$/that$_{*i/j}$ youngest daughter.'

Results

Table 1 Group means (out of 6 tokens) in the interpretation task (discourse function)

	The choice of *sono* in appropriate contexts Mean (SD)	Comparison between the controls and the L2 group (t-test)	The choice of *sono* in inappropriate contexts Mean (SD)	Comparison between the controls and the L2 group (t-test)
Controls	5.82 (0.103)	-	1.56 (0.282)	-
Adv. L2ers	4.21 (0.321)	$p<0.01$	2.88 (0.391)	$p<0.05$
Inter. L2ers	2.70 (0.376)	$p<0.01$	4.38 (0.262)	$p<0.01$

Table 2 Group means (out of 6 tokens) in the picture verification task (discourse function)

	The choice of bound variable use of *sono* Mean (SD)	Comparison between the controls and the L2 group (t-test)	The choice of disjoint *sono* in bound variable contexts Mean (SD)	Comparison between the controls and the L2 group (t-test)
Controls	4.02 (0.296)	-	2.96 (0.344)	-
Adv. L2ers	3.90 (0.317)	$p>0.05$	4.56 (0.297)	$p<0.05$
Inter. L2ers	3.60 (0.263)	$p>0.05$	4.14 (0.201)	$p>0.05$

Selected references

Belletti A, Bennati, E and Sorace, A (2007) Theoretical and developmental issues in the syntax of subjects: Evidence from near-native Italian. *Natural Language and Linguistic Theory* 25, 657-689.

Elbourne P D (2005) Situations and individuals. Cambridge, MA: The MIT Press.

Kanno K (1997) The acquisition of null and overt pronouns in Japanese by English speakers. *Second Language Research* 13, 265-287.

Noguchi T (1997) Two types of pronouns and variable binding. *Language* 73, 4, 770-797.

Rothman J (2009) Pragmatic deficits with syntactic consequences: L2 pronominal subjects and the syntax-pragmatics interface. *Journal of Pragmatics* 41, 951-973.

White L (2011) Second language acquisition at the interfaces. *Lingua* 121, 577-590.

Online Predictive Processing of Mandarin Tone: Evidence from ERPs

Stephen Politzer-Ahles[1], Seth Wiener[2], Caicai Zhang[1,3]

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Spoken word recognition involves mapping a highly variable acoustic signal to stored representations in a listener's mental lexicon. Because a word's phonetic form varies across speakers and contexts, native listeners predict the likelihood of the signal-to-representation match given the known frequency distribution of cues for a specific sound category or word [1]. In current theories of spoken word recognition, this predictive processing is assumed to occur incrementally as soon as acoustic information is available [2, 3]. Mandarin tone serves as a theoretically important test case for predictive processing given its lexical role, highly variable acoustic-phonetic form [4] and temporal disadvantage relative to more immediate, robust segmental cues [5]. The present study measured event-related potentials (ERP) to evaluate the online predictive processing of Mandarin tone during spoken word recognition.

The experiment manipulated syllable frequency, which corresponds to the overall token frequency of a syllable (regardless of which tone it occurs with), and syllable-conditioned tonal probability, which refers to the probability of each Mandarin tone type occurring with a particular syllable. Stimuli calculations were measured using [6]. This resulted in a 2x2 design with 16 items per condition (Table 1). For instance, *ba* is a high-frequency syllable, and has a high probability of occurring as *ba1* whereas it has a low probability of occurring as *ba2.* In contrast, *tie* is a low-frequency syllable but has a high probability of occurring as *tie3*, and a low probability of occurring as *tie1*. Thus, the likelihood of hearing a particular tone is dependent upon the syllable.

To test whether Mandarin speakers predict tone as segmental information unfolds, 8 native speakers underwent a character identification task. Participants first heard a Mandarin syllable+tone, then saw a frequency-controlled character and were asked to judge whether the character matched the perceived syllable+tone. Based on [7], we predicted that low-frequency syllables and low-probability tones would show a larger (more negative) N400 effect than the corresponding high-frequency and high-probability items. We also predicted a two-way interaction between syllable frequency and tonal probability such that low-frequency syllables with low-probability tones would elicit the largest N400 effect.

The results indeed suggested such a pattern (Figure 1). Participants showed the largest N400 effect for low-frequency-low-probability targets, indicating that for low-frequency syllables native speakers were more likely to predict the high-probability tone and less likely to predict the low-probability tone. Tonal probability did not affect high-frequency syllables in the same manner. This corroborates previous work, which argues that since high-frequency syllables occur in dense syllable+tone neighborhoods with numerous tonal homophones (e.g., the high-frequency syllable *ba* corresponds to over 35 unique morphemes across all four tones), tonal information is less informative for lexical identification and therefore less often predicted [7]. These findings motivate two conclusions: N400 provides an index of how tonal predictions unfold during online comprehension and native Mandarin speakers more often predict tone for low-frequency syllables.

Table 1. Four Experimental conditions, with examples

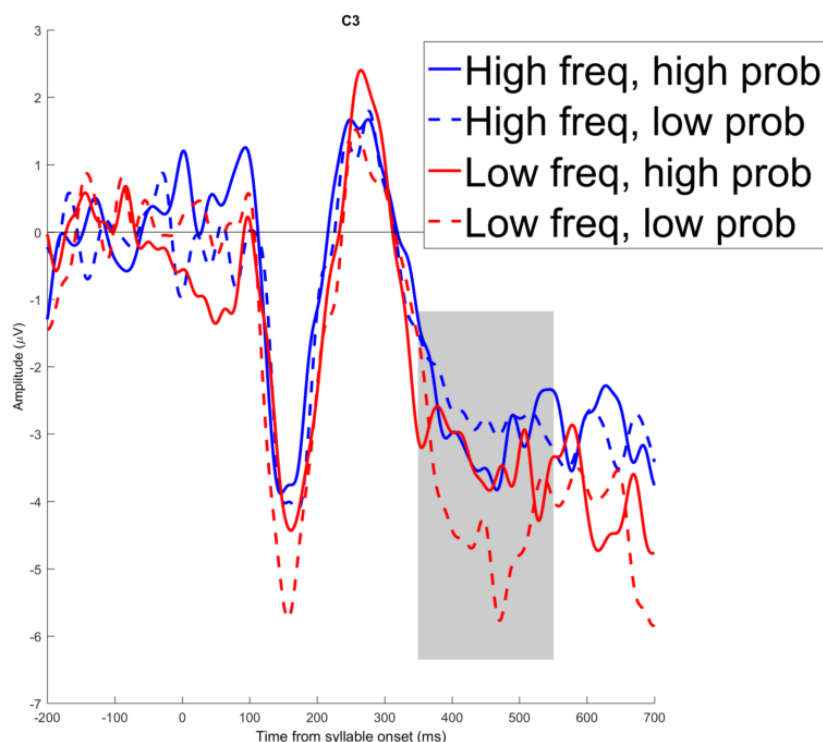|		Syllable Frequency	
		High	Low
Tonal Probability	High	High freq, high prob 八 *ba1*	Low freq, high prob 铁 *tie3*
	Low	High freq, low prob 拔 *ba2*	Low freq, low prob 贴 *tie1*

Figure 1. Average ERP waves at a representative electrode

References
[1] Kleinschmidt, D. F., & Jaeger, T. F. (2015). Robust speech perception: recognize the familiar, generalize to the similar, and adapt to the novel. *Psychological Review*, *122*(2).
[2] Norris, D., & McQueen, J. M. (2008). Shortlist B: A Bayesian model of continuous speech recognition. *Psychological Review, 115*, 357–395.
[3] McMurray, B., Tanenhaus, M. K., & Aslin, R. N. (2002). Gradient effects of within-category phonetic variation on lexical access. *Cognition*, *86*(2), B33-B42.
[4] Jongman, A., Wang, Y., Moore, C. B., & Sereno, J. A. (2006). Perception and production of Mandarin Chinese tones. In Li, P., Tan, L. H., Bates, E., and Tzeng, O. J. L., (Eds.), *Handbook of East Asian Psycholinguistics,* Cambridge Univ. Press, 209-217.
[5] Ye, Y., & Connine, C. M. (1999). Processing spoken Chinese: The role of tone information. *Language and Cognitive Processes, 14*(5-6), 609-630.
[6] Cai, Q., & Brysbaert, M. (2010). SUBTLEX-CH: Chinese Word and Character Frequencies Based on Film Subtitles. *PLoS ONE, 5*, e10729.
[7] Wiener, S., & Ito, K. (2015). Do syllable-specific tonal probabilities guide lexical access? Evidence from Mandarin, Shanghai and Cantonese speakers. *Language, Cognition and Neuroscience, 30*(9), 1048-1060.

Voice/Case/Case (Mis)match in Pseudo-sluicing of Korean: An ERP Approach

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In this study, we examined voice mismatch in pseudo-sluicing of Korean by conducting an offline acceptability task and an ERP (event-related brain potential) experiment. The experiment employed 240 sets of eight elliptical conditions in Korean with 2 explicit/implicit correlate Agent * 2 Voice types * 2 (Mis)Match conditions in (1)-(8) of the next page, as summarized in Table 1, where the remnants and their correlates are highlighted and underlined. Seventeen Korean speakers (male: 10, mean age: 22.6; range: 19-29) participated in the experiment. The descriptive data of the offline acceptability task are in Table 2. The ANOVA results of the offline task showed that there are significant main effects of voice ($F_{(1,16)}$=4.96, p<0.05) and (mis)match ($F_{(1,16)}$=47.33, p<0.001). Korean speakers consistently judged the three voice mismatch conditions unacceptable, and particularly the mismatch in the implicit Agent conditions was rated the worst among the conditions. These results fit well with the online results measured during the recording of ERPs. The ANOVA results of the online acceptability task also showed significant main effects of voice ($F_{(1,16)}$=48.09, p<0.001) and (mis)match ($F_{(1,16)}$=87.95, p<0.001).

ERPs were measured at the remnant element in the elliptical clause such as *nwukwu-Ø-i-nci* 'who-Nom-copula-Q' and *nwukwu-eyuyhayse-i-nci* 'who-by-Cop-Q' marked with a different voice from the first antecedent clause. At the critical element in each mismatch condition, similar/different ERP components were obtained (in Table 2 and Figure 1). In pairwise comparison, condition 4 (relative to 1) and condition 8 (relative to 5) involving the voice mismatch (from **passive** antecedent to **active** ellipsis clause) recorded a marginal P600 and a marginal P400 followed by a significant P600/sustained positivity, respectively, at the remnant element *nwukwu-Ø-i-nci*. By contrast, condition 2 (relative to 3) and condition 6 (relative to 7) also involving the voice mismatch (from **active** antecedent to **passive** ellipsis clause) registered a significant RAN and a significant N400 followed by a significant N600, respectively, at the remnant element *nwukwu-eyuyhayse-i-nci*.

We take these ERP results of voice mismatch in pseudo-sluicing of Korean to point to three things. First, both conditions 4 and 8 involve voice mismatch due to conversion from **passive** antecedent to **active** ellipsis clause, which evoked positivity at 500-650 ms. In our experimental design, voice mismatch in conditions 4 and 8 amounts to structural (i.e., Nominative) Case mismatch on the remnant, which resulted in eliciting the P600(-like) component as an index of structural repair. Second, conditions 2 and 6 both include voice mismatch owing to conversion from **active** antecedent to **passive** ellipsis clause, which led to evoking negativity at 350-500. Voice mismatch in conditions 2 and 6 means lexical/morphological case mismatch on the remnant, which ended up yielding the N400(-like) component as an index of semantic integration. Third, in contrast to conditions 4 and 2, conditions 8 and 6 do not contain an overt correlate to the remnant. One remarkable thing of the ERP results of such conditions is that either positivity or negativity recorded by the 'correlate-ed' conditions is prolonged or sustained in the 'correlate-less' conditions, intensifying the effects of voice mismatch.

Table 1. Sample materials

(1) [eckucey **nwukwunka-ka** ku namwu-lul call-ass-tako] Yengi-ka malhayss-nuntey, [**nwukwu**-inci] mollassessta.

   yesterday **someone**-Nom that tree-Acc cut-Past-Comp Yengi-Nom said-Circum **who**-Interrog didn't know

   'Though Yengi said that someone cut the tree yesterday, I didn't know who.'

(2) [eckucey **nwukwunka-ka** ku namwu-lul call-ass-tako] Yengi-ka mahayss-nuntey, [**nwukwu-eyuyhayse**-inci] mollassessta

   yesterday someone-Nom that tree-Acc cut-Past-Comp Yenghi-Nom said-Circum **who-by**-Interrog didn't know

   Though Yengi said that someone cut the tree yesterday, I didn't know who by.'

(3) [eckucey ku namwu-ka **nwukwunka-eyuyhayse** calli-ess-tako] yengi-ka malhayss-nuntey, [**nwukwu-eyuyhayse**-inci] mollassessta.

(4) [eckucey ku namwu-ka **nwukwunka-eyuyhayse** calli-ess-tako] yengi-ka malhayss-nuntey, [**nwukwu**-inci] mollassessta

(5) [eckucey ku namwu-lul call-ass-tako] Yengi-ka malhayss-nuntey, [**nwukwu**-inci] mollassessta.

(6) [eckucey ku namwu-lul call-ass-tako] Yengi-ka mahayss-nuntey, [**nwukwu-eyuyhayse**-inci] mollassessta

(7) [eckucey ku namwu-ka calli-ess-tako] Yengi-ka malhayss-nuntey, [**nwukwu-eyuyhayse**-inci] mollassessta

(8) [eckucey ku namwu-ka calli-ess-tako] Yengi-ka malhayss-nuntey, [**nwukwu**-inci] mollassessta

Table 2. Mean acceptability ratings of the 8 conditions

Agent Type	Explicit Agent - active sentence		Explicit Agent - passive sentence		Implicit Agent - active sentence		Implicit Agent - passive sentence	
Voice (mis)match	match	mismatch	match	mismatch	match	mismatch	match	mismatch
Mean acceptability Scale (1: very bad, 4: very good)	3.5	2.0	3.4	1.7	2.4	2.6	3.3	1.4

Table 3. Pairwise comparisons: Overall ANOVA F-values and p-values at the critical elements

pairwise	voice type & correlate in the ellipsis clause	voice type & remnant in the ellipsis clause	
		350-500 ms	500-650 ms
	Act. : *nwukwu-Ø-i-nci* 'wh o-Nom-copula-Q'		
[4] vs. [1]	**Pass.** - **explicit** Agent:		• a marginal P600, LP: $F_{(1,16)}$=3.80, p=0.06; MP: $F_{(1,16)}$=3.17, p=0.09; RP: $F_{(1,16)}$=3.54, p=0.07
[8] vs. [5]	**Pass.** - **implicit** Agent:	• a marginal P400, $F_{(1,16)}$=2.92, p=0.1 ■ sustained positivity	• a significant P600, $F_{(1,16)}$=10.82, p<0.01
	Pass. : *nwukwu-eyuyhayse-i-nci* 'who-by-copula-Q'		
[2] vs. [3]	**Act.** - **explicit** Agent:	• a significant RAN, RA: F(1,16)=5.90, p<0.05	
[6] vs. [7]	*Act.* - **implicit** Agent:	• a significant N400, $F_{(1,16)}$=5.17, p<0.05 ■ sustained negativity.	• a significant N600, $F_{(1,16)}$=6.06, p<0.05

Figure 1. The topographic scalp voltage maps and the grand average ERP responses to the critical elements in the 8 conditions at the electrodes
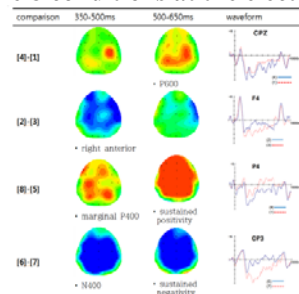
Grammatical Processing Difficulties in Mandarin-speaking Preschool Children with Autism Spectrum Disorders: Assessment via Intermodal Preferential Looking

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Previous studies have revealed that English-speaking children with autism spectrum disorders (ASD) were able to process basic word order structures by 3 years old (Swensen et al., 2007). Investigation of 4-5-year-old Mandarin-speaking children with high-functioning autism has also supported their utilization of the word order cue in sentence comprehension (Zhou et al., 2016). Using Intermodal Preferential Looking (IPL; Naigles & Tovar, 2012), this study assessed the processing of the Subject-Verb-Object (SVO) word order in a more general group of Mandarin-speaking preschool children with ASD, as a comparison with Mandarin-speaking typically-developing (TD) children.

Seventeen preschool Mandarin-speaking children with ASD (mean age = 53.82 ± 15.48 months; Autism Behavior Checklist (ABC) scores = 66.35 ± 24.52) and twenty TD children speaking Mandarin (mean age = 33.85 ± 4.21 months; ABC scores = 6.20 ± 7.16) participated in the study. The children with ASD were significantly older and showed more autism symptoms than the TD children (ps < .001). However, their vocabulary production scores were significantly lower than the TD group's, based on the Putonghua Communicative Development Inventory (ASD: 288.47 ± 222.78 words vs. TD: 735.75 ± 36.77 words, *p* <.001). Clearly, the ASD group had begun to acquire vocabulary but they were considerably delayed relative to their chronological age. Both groups of children listened to simple reversible transitive sentences in SVO word order paired with two visual scenes, only one of which matched the sentence. A total of six familiar verbs and actions were introduced and then tested for word order understanding (e.g., whether the child distinguished between 'the bird pushing the horse' and 'the horse pushing the bird'). The children's eye movements were recorded and coded offline.

 Three different measures of looking behavior while viewing the videos indicated that the TD group demonstrated comprehension of SVO word order (all tests 1-tailed): Their percent of looking to the match **was longer during the test trials** (especially the first half of the trial, p<.05) relative to the control trials (Table 1), **their latency of first look was faster to the match** than to the nonmatch (p < .05; Table 2), and **their number of switches of attention decreased** between the control and test trials (p < .01; Table 3). In contrast, none of these measures suggested word order comprehension in the ASD group. Correlations revealed that children with ASD who showed stronger percent looking to the match had fewer ASD symptoms; moreover, children who paid more attention overall during the test trials also looked more quickly at the matching scene (ps < .05).

This study revealed early sensitivity to word order in Mandarin-speaking TD children; however, the ASD group, whose overall language development was dramatically delayed relative to their chronological age, showed little reliable word order comprehension. We hypothesize that sentence processing in the general group of children with ASD may be influenced by multiple factors including cross-linguistic features (e.g., the variant word orders), attention, vocabulary level and symptom severity.

Table 1. Percent looking time to match during control and test trials by diagnostic group

	TD (N=20)	ASD (N=17)
Control		
Mean	**49.22**	49.78
SD	**9.74**	12.16
Test: 1st Half		
Mean	**55.70**	45.51
SD	**13.46**	17.22
Test: 2nd Half		
Mean	51.82	49.10
SD	13.14	14.52
Test: total		
Mean	52.99	46.61
SD	0.09	15.11

Table 2. Latency of first look to match versus nonmatch during test trials by diagnostic group

	TD (N=20)	ASD (N=17)
Matching		
Mean	**1.79**	2.41
SD	**0.83**	0.98
Nonmatching		
Mean	**2.39**	2.10
SD	**0.95**	0.94

Table 3. Number of switches during control and test trials by diagnostic group

	TD (N=20)	ASD (N=17)
Control		
Mean	**7.07**	7.16
SD	**1.33**	1.63
Test		
Mean	**5.91**	7.11
SD	**1.63**	1.35

An Empirical Evaluation on the Subject/Object Asymmetry of Chinese Complex NP Island

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In Chinese, an element deeply embedded in a complement clause can be topicalized, as in (1a). However, topicalization from certain domains are unacceptable, e.g., (1b) for complex NP island (Tang 1977; Huang 1982, 1984). Nevertheless, such island effects seem to disappear when a given island occurs in subject position, e.g., (1c) and (1d). Huang (1984) proposed the Generalized Control Rule (GCR) to account for the acceptability of sentences that seem to violate island constraints. Since Chinese is a language that allows empty pronouns (pro), according to the GCR, a pro can coindex with the closest nominal in an A'-position, similar to a resumptive pronoun. As the GCR only considers the closest antecedent, it predicts that an element may be topicalized out of a complex NP in the matrix subject position, but not if it occurs in matrix object.

This study examines whether there is indeed a subject/object asymmetry in the island effect of Chinese complex NP. Since the examples showing the violation of island constraints all have the topicalized elements originated from the first constituent of the complex NP, the acceptability of those sentences may be due to the fact that they do not sound clearly distinguishable at Phonetic Form from their counterparts without topicalization.

Two acceptability judgment experiments (1 very unacceptable, 5 very acceptable) were conducted, with 24 Chinese native speaker college students participating both. The first experiment tests if there is subject/object asymmetry between extraction from a complex NP in the matrix subject versus one in the matrix object, and the extraction is always from the object position of the complex NP (examples in (2a)-(2d)). Eight sets of sentences with four conditions in each set were included (+/- topicaization as one variable, and complex NP in matrix subject vs. object as another variable). The second experiment tests if there is subject/object asymmetry between extractions from the subject vs. object of a complex NP in the matrix object position. Nine sets of sentences with three conditions in each were included (no topicalization, extraction from subject or object of complex NP, examples in (3a)-(3c)). The sentences were divided into four lists and three lists in the two experiments, respectively (both were counterbalanced).

The results of the two experiments are (1) Without topicalization, sentences with complex NPs in matrix subject (mean rating 4.9) or matrix object (4.7) (i.e., (2a) vs (2b)) did not differ significantly. (2) Complex NPs in matrix subject or matrix object without topicalization differ significantly from their counterparts with topicalization (3.44 for subject, 2.96 for object; both $p<0.0001$). (3) With topicalization, complex NPs in matrix subject did not differ significantly from those in matrix object (i.e., (2c) vs (2d)) in item analysis (but marginally significant in subject analysis ($p=0.03$)). (4) Sentences with topicalization in experiment 2 differ significantly from the counterparts without topicalization (4.78) (both with $p<0.0001$), and subject extraction (3.08) did not significantly differ from object extraction (3.19).

To conclude, our results show there is no subject/object asymmetry in Chinese complex NP island.

Example sentences:

(1) a. Na-ge xuesheng$_i$, laoshi shuo xiaozhang yiwei nimen dou renshi e$_i$.
        That-CL student teacher say principal   think you   all know e$_i$
        'That student, the teacher said the principal thought you all know.'

 b. *Lisi$_i$, wo hen xihuan [[[e$_i$ chang ge] de] shengyin].
      Lisi,   I   very like   e$_i$ sing song DE voice
     '*Lis$_i$, I like the voice with which e$_i$ sings.'

 c. Lisi$_i$, [[[e$_i$ chang ge] de] shengyin] hen haoting
     Lisi,   e$_i$ sing song DE   voice   very good
     'Lisi$_i$, the voice with which (he$_i$) sings is very good.'

 d. Zhangsan$_i$, [e$_i$ baba] hen youqian   (cf.   *Zhangsan$_i$, wo kanjian-le [e$_i$ baba].)
     Zhangsan,   father very rich   Zhangsan, I see-ASP   father)
     'Zhangsan$_i$, (his$_i$) father is righ.'   (cf. * Zhangsan$_i$, I saw (his$_i$) father.)

(2) a. [Shibing ouda xiao bai gou] de yingpian zai xinwen bofang
         Soldier beat little white dog DE video ASP news show
         'The video that the soldier beat the little whit dog is showing on news.'

 b. Xinwen zai bofang [shibing ouda xiao bai gou] de yingpian
     News ASP show soldier beat little white dog DE video
     'The news is showing the video that the soldier beat the little white dog.'

 c. Xiao bai gou$_i$, [[[shibing ouda e$_i$] de] yingpian] zai xinwen bofang
     Little white dog,   soldier beat   DE video   ASP news show
     'The little white dog$_i$, the video that the soldier beat (e$_i$) is showing on news.

 d. Xiao bai gou$_i$, xinwen zai bofang [[[shibing ouda e$_i$] de] yingpian]
     Little white dog news ASP show   soldier beat   DE video
     'The little white dog$_i$, the news is showing the video that the soldier beat (e$_i$).'

(3) a. Xuexiao xuanchuan [zhigong tuanti muji jiu shu] de xiaoxi
         School propagate   volunteer group collect old book DE news
         'The school propagates the news that volunteer groups collect old books.'

 b. Zhigong tuanti$_i$, xuexiao xuanchuan [[[e$_i$ muji   jiu shu] de] xiaoxi]
     Volunteer group, school propagate   collect old book DE news
     'Volunteer groups$_i$, the school propagates the news that (e$_i$) collect old books.'

 c. Jiu shu$_i$, xuexiao xuanchuan [[[zhigong tuanti muji   e$_i$] de] xiaoxi]
     Old book, school propagate volunteer group collect   DE news
     'Old books$_i$, the school propagates the news that volunteer groups collects (e$_i$).'

References

Huang, C.-T. James. (1982) *Logical Relations in Chinese and the Theory of Grammar*. PhD Dissertation, MIT.

Huang, C.-T. James. (1984) On the distribution and reference of empty pronouns. *Linguistic Inquiry*, 15, 531-574.

Tang, Ting-Chi. (1977) *Studies in Transformational Grammar of Chinese, vol. 1: Movement Transformations*. Taipei: Student Books.

**Cross-modality Learning and the Overt Pronoun Constraint:
a Case Study on Taiwan Sign Language**

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The overt pronoun constraint (OPC) states that a language that allows both null and overt pronouns restricts the interpretation on overt pronouns, such that an embedded overt pronoun must not be bound by a "variable", such as a wh-word, a universal quantifier (UQ), etc. (Montelbetti, 1984). For example, in a pro-drop language, a sentence like "Who said he ate a whole pizza?", with an overt pronoun, would only allow a disjoint reading, where *who* and *he* must refer to different entities.

OPC poses an intriguing problem for L2 acquisition, as the types of sentences that can elicit an OPC effect are not ungrammatical per se, but rather have a limited interpretation. As such, L2 learners are unlikely to have explicit awareness of the OPC in their target language, as they would have little to no negative evidence for it (Kanno, 1997). Research on L2 learners of a pro-drop language, whose native language lacks null pronouns, has shown that OPC is often acquired at a late stage, and that even advanced learners may still differ from their L1 counterparts in this regard, suggesting that language transfer may hinder quick acquisition of OPC (Pimentel & Nakayama, 2012). Moreover, research on L2 learners acquiring OPC in another language whose native language obeys OPC has shown that "positive" language transfer, where L2 learners can take advantage of grammatical similarities between their L1 and their L2, does not occur in such cases, and OPC is not fully acquired until a fairly advanced stage (Kahraman & Nakayama, 2015; Hong & Nakayama, 2016).

The current study attempts to replicate and expand upon research of the latter type, examining L2 learners of Taiwan Sign Language (TSL) who speak Mandarin natively, both of which allow null pronouns and thus should be subject to OPC. The research questions for this study are as follows:

1) Does OPC affect sentences with a wh-word or a UQ in subject position equally? Will referential expressions as antecedents also be allowed?
2) How easily can a null pronoun refer to an extra-sentential antecedent? Will L1 and L2 participants differ in this regard?

An experiment was conducted with L1 and L2 participants (ten in each group) employing the Truth Value Judgment Task. Three conditions were included, each of which differ in their matrix subject being either a wh-word, a UQ, or referential NP (see sentences (1)-(3)). Each condition has 6 trials (3 with overt pronoun, 3 with null pronoun as the embedded subject). For the overt pronoun stories, the coreference (bound variable) reading is true, whereas for the null pronoun stories, the disjoint (extra-sentential) reading is true. The preliminary results (see Table 1) showed that OPC seems to be most active in TSL when a UQ is the matrix subject, but not when the subject is a wh-word. Moreover, L1 and L2 participants differed in their acceptance of a null pronoun with an extra-sentential reading, with the L1 group accepting such sentences more frequently.

Sample sentences
(1) a.　WHO WRITE IX$_3$ IX$_3$-PAY-IX$_3$ WILL? BIG.BROTHER.
　　　　Who wrote that he (=overt pronoun) would return the money? Big Brother.
　　b.　WHO THINK *pro* COLLEGE GRADUATE WILL? EYEBROW (name sign).
　　　　Who thinks that he (=null pronoun) will graduate from college? Eyebrow.
(2) a.　NURSE EVERY THINK IX$_3$ GO BUY$_{RED}$ WILL
　　　　Every nurse thinks that she (=overt pronoun) will go shopping.
　　b.　STUDENT EVERY HOPE *pro* GO.BY.PLANE PLAY CAN
　　　　Every student hopes that they (=null pronoun) can travel abroad.
(3) a.　BIG.EYE (name sign) HOPE IX$_3$ PANDA RAISE CAN
　　　　Big Eye hopes that she (=overt pronoun) can have a panda as a pet.
　　b.　SHORT.HAIR (name sign) BELIEVE *pro* NOW YEAR HUSBAND FIND SUCCEED CAN
　　　　Short Hair believes that she (=null pronoun) can find a husband this year.

Table 1. Results (rate of NO responses)

Condition	L1 TSL	L2 TSL	statistics
Wh…overt pronoun	3/30 (10%)	7/30 (23%)	$p = 0.25$
Wh…null pronoun	14/30 (47%)	27/30 (90%)	$p < 0.005$
UQ…overt pronoun	13/30 (43%)	23/30 (77%)	$p < 0.01$
UQ…null pronoun	11/30 (37%)	19/30 (63%)	$p = 0.08$
RNP…overt pronoun	7/30 (23%)	4/30 (13%)	$p = 0.34$
RNP…null pronoun	16/30 (53%)	24/30 (80%)	$p = 0.07$

Works Cited
GÜREL, A. 2003. "Is the Overt Pronoun Constraint Universal? Evidence from L2 Turkish" Proceedings of the 6th Generative Approaches to Second Language Acquisition Conference (GASLA 2002), ed. Juana M. Liceras et al., 130-139. Somerville, MA: Cascadilla Proceedings Project.
HONG, S. & M. NAKAYAMA (2016) KARE and bound variable interpretations by Korean speaking learners of Japanese. In M. Nakayama, Y. Su & A. Huang (eds.), *Studies in Chinese and Japanese Language Acquisition: In Honor of Stephen Crain*. Amsterdam: John Benjamins.
HUANG, J. C. 2014. *Is the overt pronoun constraint learnable?* M.A. Thesis, The University of Hong Kong.
KAHRAMAN, B. & NAKAYAMA, M. 2015. "Interpretations of kare/kanojo by Turkish speaking learners of Japanese". *Ars Linguistica 21*: 18-38
KANNO, K. 1997. "The acquisition of null and overt pronominals in Japanese by English speakers". *Second Language Acquisition 5*: 317-332.
MASUMOTO, A. 2008. *Overt Pronouns and Bound Variable Reading in L2 Japanese*. M.A. Thesis, The Ohio State University.
MATSUOKA, K. & LILLO-MARTIN, M. 2015. "Interpretation of Bound Pronouns by Hearing Learners of Japanese Sign Language." Proceedings from the 2nd International Conference on Sign Language Acquisition (ICSLA 2015). University of Amsterdam.
MONTALBETTI, M. 1984. *After Binding: On the Interpretation of Pronouns*. PhD. Dissertation, MIT.
PIMENTEL, P. & NAKAYAMA, M. 2012. "Pronominal interpretations in L2 Japanese". *Journal of Japanese Linguistics 28*: 111-131.
SORACE, A. & FILIACI, F. 2006. "Anaphora resolution in near-native speakers of Italian". *Second Language Research 22,3*: 339-368.

The Role of Markedness in Hearing L2 Users of Taiwan Sign Language

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The role of markedness in L2 acquisition is more complicated than in L1 acquisition since the L2 learners/users already have prior linguistic experience. Bardovi-Harlig (1987) found that a marked form was acquired before an unmarked form for second language English learners and proposed that salience also plays a role in acquisition order. White (1987) points out that the second language learner might transfer a marked structure from L1 to L2, instead of avoiding it as generally expected. The role of markedness becomes even more complicated in a second-modality second-language situation (called M2-L2, Chen Pichler 2011), as in the hearings' learning of a sign language with supposedly very different linguistic predispositions.

Regarding markedness of handshape, the most fundamental phonological element in sign language, the unmarked handshapes are claimed to be motorically easier to produce and easier to discriminate, and are acquired earlier by children and also occur more frequently (Rozelle 2003). Ortega & Morgan (2010) also report that marked handshapes are used with most difficulty by children and adults.

However, in L2 acquisition where learning involves more conscious awareness or even explicit instructions about linguistics forms of the target language, the marked forms might draw more attention or are emphasized more. One possible result is that the L2 learners or users will be more specific in producing the marked forms than native signers who might show the undershoot phenomenon, even in spontaneous, connected speech. To address this issue, we analyzed narrations of *Frog, where are you?* (Mayer 1969) by three hearing advance signers (M2-L2) and three native deaf signers (M1-L1) of TSL. Recordings were taken in both 2005 and 2016. Markedness of TSL handshapes was defined by ease score. Adopting the Ease Score formula of Ann (2006), Tsay & Chen (2013) report the five most frequent handshapes having the lowest ease score: Open B, One, S, Five, Bent Five. The most difficult ones are Middle, Unspread W, Ring, Curved W, Curved 5-Pinky. (See appendix for pictures from Tai & Tsay 2015)

The results show that, for both L1 and L2 signers, the five handshapes with lowest ease score were the handshapes used most frequently. None of the difficult handshapes were used in the narrations. This is consistent with the markedness hypothesis. However, further examination of individual handshapes found that for more marked handshapes, the L2 signers' production showed more specification, while the L1 signers showed undershoot or substitution of an unmarked handshape. For example, the citation form of TREE (Fig. 1, Smith and Ting 1989) has the handshape Open Eight (Fig. 2, ease score 2). While all three native signers substituted with the unmarked handshapes Five (Fig. 3, ease score 0), all three L2 signers showed very specified Open Eight handshape with strict bending of the middle finger (Fig. 4), even after 10 years of frequent use of TSL as TSL interpreters (Fig. 5). Other aspects related to the role of markedness in sign language, particularly iconicity (Su and Tai 2009) and cross-modality transfer of co-speech gesture will also be discussed.

References

Ann, Jean. 2006. *Frequency of Occurrence and Ease of Articulation of Sign Language Handshapes: The Taiwanese Example*. Gallaudet University Press.

Bardovi-Harlig, Kathleen. 1987. Markedness and Salience in Second-Language Acquisition. *Language Learning*.

Chen Pichler, D. 2011. Sources of handshape error in first-time signers of ASL, in Napoli & Mathur (eds.) *Deaf around the world*. OUP, pp. 96-121.

Mayer, Mercer. 1969. *Frog, Where Are You?* New York: Dial Press.

Ortega, G., & Morgan, G. 2010. Comparing child and adult development of a visual phonological system. *Language, Interaction, and Acquisition*, *1*, 67–81.

Rozelle, Lorna. 2003. *The structure of sign language lexicons: Inventory and distribution of handshape and location*. University of Washington dissertation.

Smith, Wayne H. and Li-Fen Ting. 1979. *Shou Neng Sheng Qiao* [*Your Hands Can Become a Bridge*], vol. 1. Taipei: Deaf Sign Language Research Association of the Republic of China.

Su, Shioufen and James H-Y. Tai. 2009. Lexical comparison of signs from Taiwan, Chinese, Japanese, and American Sign Languages: Taking iconicity into account. In Tai and Tsay (eds). *Taiwan Sign Language and Beyond*. 149-176.

Tai, James H.-Y. and Jane Tsay. 2015. Taiwan Sign Language: History, Structure, and Adaptation. In *Oxford Handbook of Chinese Linguistics*, ed. by William S-Y. Wang and Chaofen Sun, 729-750. UK, Oxford University Press.

Tsay, Jane and Yijun Chen. 2013. Markedness and Lexical Frequency in Taiwan Sign Language Phonology. Paper presented at *the 21st Annual Conference of the International Association of Chinese Linguistics (IACL)*. June 7-9, 2013, Taipei.

White, Lydia. 1987. Markedness and Second Language Acquisition: The Question of Transfer. *Studies in Second Language Acquisition*, 9.3:261-285.

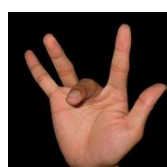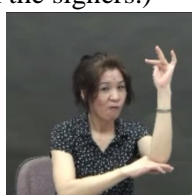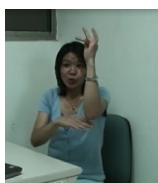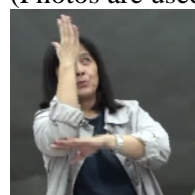Figure 1 TREE   Figure 2 Handshape Open Eight

Figure 3 TREE (Deaf) Figure 4 TREE (H1-2005) Figure 5 TREE (H1-2016)
(Photos are used with the permission from the signers.)

Appendix Handshapes and ease scores in parentheses (on 0-4 scale)

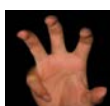| Open B (1)	One (0)	S (0)	Five (0)	Bent Five (0)
Middle (4)	Unspread W (3)	Ring (4)	Curved W (3)	Curved 5-Pinky (3)

**Can Second Language Learners Use Syntactic and Semantic Information
for Ambiguity Resolution?**

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We conducted self-paced reading experiments to investigate whether Japanese learners of English process temporarily ambiguous sentences using plausibility and verb subcategorization information in real-time.

'*The teacher*' is temporarily ambiguous in (1b), because there is no comma after '*asked*'. Commas signal the end of subordinate clauses. If readers initially analyze *'the teacher'* as the subordinate verb's direct object, they need to reanalyze it after reading the main clause's verb (i.e., *'answered'*) in (1b), leading to a garden-path (GP) effect.

Native English-speaking adults can reduce the GP effect in temporarily ambiguous sentences, using syntactic and semantic information. For example, the GP effect decreases when the noun phrase (NP) following a verb is implausible as a direct object of the verb, and when a verb does not often take a direct object (Pickering et al., 2000; Trueswell et al., 1993). However, even in such cases exemplified in (2) and (3), English-speaking children consistently select an analysis with ambiguous NPs being at the subordinate clause, resulting in the GP effect (Traxler, 2002).

One of the major topics in L2 processing studies is whether and to what extent L2 learners behave in a native-like way. Although adult L2 learners are also in the process of acquiring a target language like children, they have mature cognitive abilities, such as working memory and logical reasoning. The present study examines whether Japanese learners of English can use plausibility and verb subcategorization information in the processing of temporarily ambiguous sentences, by conducting self-paced reading experiments.

Sentences like (4)–(6) were used in the experiments. In the plausible/optionally transitive condition (4), the matrix subject is semantically plausible as a direct object of the subordinate verb without a comma, and the subordinate verb is an optionally transitive verb. In the implausible condition (5), the matrix subject is implausible as a direct object of the subordinate verb. In the intransitive condition (6), the subordinate verb is usually used as an intransitive verb.

In the plausible/optionally transitive condition, we observed the GP effect at the main verb, and more proficient learners showed greater GP effect. In the implausible and intransitive conditions, the learners also showed the GP effect at the main verb, even though plausibility and subcategorization information could serve as a cue for constructing correct syntactic structures. The GP effect was smaller in the implausible and intransitive conditions than in the plausible/optionally transitive condition.

The results suggest that Japanese upper-intermediate English learners incrementally process English sentences with structural ambiguity, but cannot use plausibility and verb subcategorization information for ambiguity resolution in real-time. However, the degree of disruption among those learners was smaller. This suggests that readers recover from misanalysis more quickly when syntactic information supports a correct analysis together with plausibility or subcategorization information. In conclusion, the learners' ability to integrate different kinds of information in real-time processing was less effective than native speakers, even though the learners could take an alternative analysis immediately after the disambiguation.

Examples

(1) a. When the student asked**,** the teacher <u>answered</u> his interesting question right away.

    b. When the student asked the teacher <u>answered</u> his interesting question right away.

(2) When Sue tripped *the table* <u>fell</u> over and the vase was broken.

(3) When Sue *fell* the politician <u>stopped</u> and helped her up.

(4) Plausible/Optionally Transitive condition:

    When the student asked(,) the teacher in a red shirt <u>answered</u> his interesting question right away.

(5) Implausible condition:

    When the student read(,) *the teacher* in a white sweater <u>wrote</u> a letter to his parents.

(6) Intransitive condition:

    When the boy *smiled*(,) the girl in a pink dress <u>waved</u> her hand from the window.

References

Pickering, Martin, Matthew Traxler and Matthew Crocker. 2000. Ambiguity resolution in sentence processing: Evidence against Frequency-based Accounts. *Journal of Memory and Language* 43: 447–475.

Matthew Traxler. 2002. Plausibility and subcategorization preference in children's processing of temporarily ambiguous sentences: Evidence from self-paced reading. *Quarterly Journal of Experimental Psychology* 55(1): 75–96.

Trueswell, John, Michael Tanenhaus and Christopher Kello. 1993. Verb-specific constraints in sentence processing: Separating effects of lexical preference from garden-paths. *Journal of Experimental Psychology: Learning, Memory and Cognition* 19: 528–553.

Sensitivity to Gender Information in Anaphor Resolution: the Case of Mandarin Chinese

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Introduction: Biological gender is marked for Mandarin Chinese pronouns and reflexives in written form, though in spoken form they have the same pronunciation (pronoun: 他/她/tʰɑ¹/; reflexive: 他自己/她自己/tʰɑ¹tsɨ⁴tɕi³/). Studies examining this unique gender ambiguity have suggested that Chinese speakers are not sensitive to gender information [1] and treat masculine as the default form [3]. However, we found that Chinese speakers are sensitive to and can use gender information during anaphor resolution.

Experiments: Using bi-clausal sentence stimuli containing two gender stereotyped names [2], we manipulated 3 factors: Target gender type ("Ttype": Match/Mismatch with the Pro-form) × Distractor gender type ("Dtype": Match/Mismatch with the Pro-form) × Pro-form gender ("PGtype": Masculine/Feminine).

Exp1 focused on pronoun *ta*. Exp1-a: antecedent choice task "who does *ta* refer to?"; Exp1-b: judgment task using 7-point scale. Results (Fig.A): Overwhelming more target choices than distractors across all conditions, but none of the manipulations was significant. Judgment results showed a main effect for Type (β=.207, *SE*=.093, *t*=2.234): target matched sentences rated higher than mismatched ones. A Ttype×Dtype interaction (β=-.366, *SE*=.140, *t*=-2.603): compared to distractor match conditions, target matched sentences were rated much higher than mismatched ones when the distractor mismatched the gender of the pronoun; thus ratings were lower when both the target and the distractor matched the pronoun gender. Another Dtype×PGtype interaction (β=-.325, *SE*=.140, *t*=-2.316): when a masculine *ta* was used, people rated the sentences in distractor mismatch conditions higher than match ones but the difference was not significant for feminine *ta*.

Exp2 focused on reflexive *taziji* using the same manipulations, tasks and similar stimuli in Exp1 (Results see Fig.B). Antecedent choice results (Exp2-a): main effects for both Ttype and Dtype: people chose more targets under target match conditions than mismatch conditions (β=1.879, *SE*=0.589, *z*=3.189). Comparing to distractor match conditions, more targets were chosen under distractor mismatch conditions (β=-2.288, *SE*=0.542, *z*=-4.218); thus the target was preferred when the distractor did not also match the reflexive gender. An interaction of Dtype×PGtype (β=1.742, *SE*=0.628, *z*=2.773): the difference of distractor choices between distractor match and mismatch conditions was larger when the feminine *taziji* was used comparing to masculine *taziji*. Judgment results (Exp2-b): people rated sentences equally across all conditions.

Discussion: 1. Chinese speakers do use gender information in anaphor resolution: more target choices when the target matched and distractor mismatched the pro-form gender. **2.** Asymmetry between pronouns and reflexives: pronouns are more structurally constrained; people rarely chose distractors and the ratings for target mismatch or distractor match conditions were low. For reflexives: more choices of distractors than targets when only the distractor matches the gender, and the ratings were equally good. **3.** Different sensitivity to pro-form genders: the marked feminine pro-forms were more salient; people were more "attracted" by the distractors in reflexive groups and had more tolerance to the distractor match conditions in the pronoun groups. A planned visual world eye-tracking study will test how people use gender information during on-line processing when gender is ambiguous in spoken forms.

Examples:

Stimuli structure: Name1-V1-Name2-V2-Proform (Exp1: pronoun *ta*; Exp2: reflexive *taziji*)
Tasks: Exp1-a & Exp2-a: Antecedent choice task
"Who does *ta*/*taziji* refer to?"
Exp1-b & Exp2-b: Judgment task (7-point scale)
"How to do you feel about this sentence?"
Sample stimuli (16 items+40 fillers per experiment)*:*

Exp1 a&b	*Name1(Target)*	*V1("say")*	*Name2(Distractor)*	*PROG*	*V2*	*Pronoun*
	张豹/方梅	表示	洪钢/陈霞	在	低估	他/她
	Male/Female Name	say	Male/Female Name	PROG	underestimate	him/her

Exp2 a&b	*Name1(Distractor)*	*V1("say")*	*Name2(Target)*	*PROG*	*V2*	*Reflexive*
	张豹/方梅	表示	洪钢/陈霞	在	低估	他自己/她自己
	Male/Female Name	say	Male/Female Name	PROG	underestimate	himself/herself

Figures:
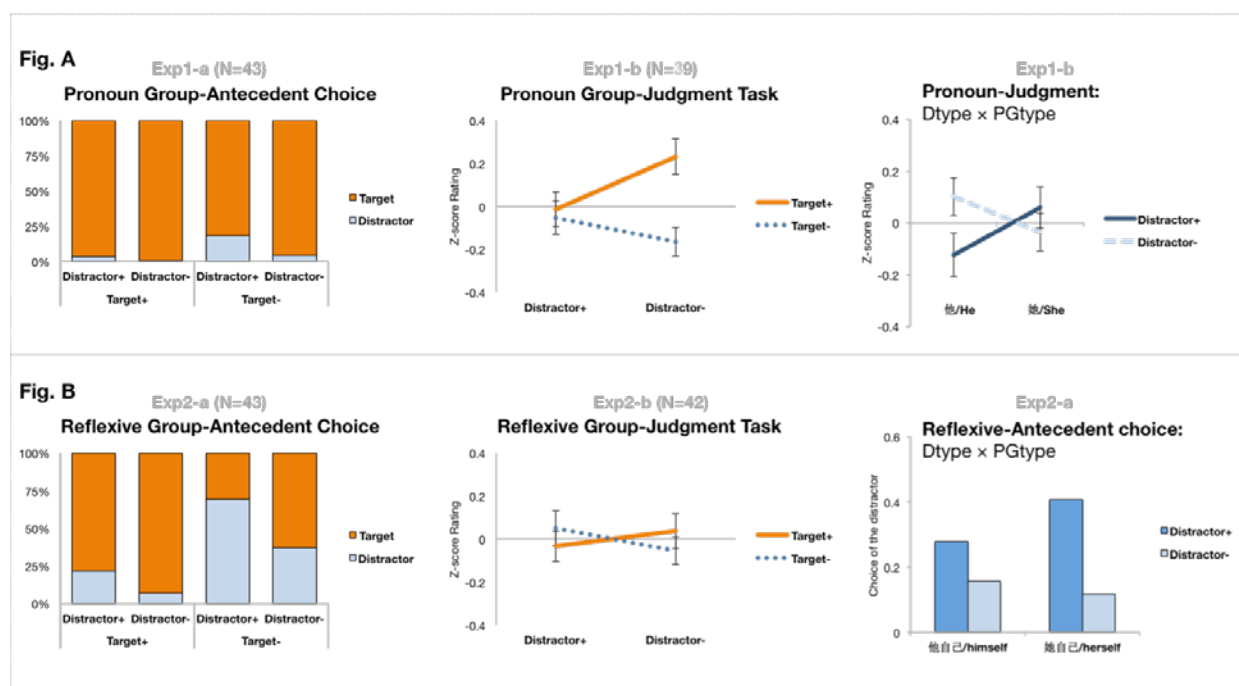
References:

[1]   Chen, J. Y., & Su, J. J. (2011). Differential sensitivity to the gender of a person by English and Chinese speakers. *Journal of psycholinguistic research*, *40*(3), 195-203.
[2]   Qiu, L., Swaab, T. Y., Chen, H. C., & Wang, S. (2012). The role of gender information in pronoun resolution: Evidence from Chinese. *PloS one*, *7*(5), e36156.
[3]   Su, J. J., Molinaro, N., Gillon-Dowens, M., Tsai, P. S., Wu, D. H., & Carreiras, M. (2016). When "He" Can Also Be "She": An ERP Study of Reflexive Pronoun Resolution in Written Mandarin Chinese. *Frontiers in psychology*, *7*.

Why is Aspectual Coercion Difficult to Process?
Evidence from Event-Related Brain Potentials

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A considerable amount of research exists about syntactic complexities. Among other things, studies show that syntactic complexities, such as scrambling, increase processing costs during sentence compression. In contrast, real-time semantic processing has not been studied extensively. Little is known about how semantic complexity relates to processing difficulties. The present study employed a type of coercion called aspectual coercion to examine whether semantic complexity increases processing loads and, if so, why it is difficult to process.

Aspectual coercion refers to the phenomenon by which aspectual shifts occur to reconcile a semantic mismatch between adverbs and verbs. For example, atelic verbs, such as "instruct" in (1a), are semantically compatible with durative adverbs, such as "for 30 minutes". In (1b), on the other hand, atelic interpretation of verbs is coerced into to a telic interpretation to satisfy the requirement of temporal adverbs that express the end point of activities, such as "in 30 minutes". In (2), the opposite interpretation shift occurs, because "print the papers" inherently denotes a telic event, which is inconsistent with a durative adverb.

Previous studies using event-related potentials (ERPs) have found that the aspectually coerced sentences elicited an anterior negativity (AN) from approximately 300 ms to 1000 ms compared to non-coerced sentences [1][3][4]. Bott [1] and Paczynski et al. [3] proposed that the AN reflects an aspectual reinterpretation process to resolve an aspectual mismatch between adverbs and verbs. However, because comprehenders are unlikely to actively predict semantically more complex sentences, such as aspectual coercion, it is highly plausible that the processing cost could reflect an expectation mismatch.

To examine whether the difficulty of processing aspectual coercion reflects an expectation mismatch and/or aspectual reinterpretation process, we conducted an ERP experiment that manipulated the presentation speed of stimuli (stimulus onset asynchrony: SOA). The long SOA enables participants to predict upcoming information and leads to predictive ERP patterns (e.g., LAN-P600 and N400-P600), whereas only prediction-unrelated ERPs (e.g., P600) are elicited in the short SOA [2]. In our experiment, the participants were presented four types of sentences as shown in (1) and (2) with two SOAs (long and short).

The results revealed that the aspectually coerced sentences in (1b) and (2b) elicited an AN from 300 ms to 700 ms in the long SOA experiment. Crucially, however, in the short SOA experiment, the sentences in (1a) and (1b) did not elicit an AN from 300 to 500 ms (the early AN). The AN for aspectual coercion appeared from 500 to 700 ms (the late AN). These results demonstrate that there are two distinct types of processing costs in the processing of aspectual coercion; the early AN reflects an aspectual expectation mismatch, which triggers the aspectual reinterpretation process indexed by the late AN.

From a broader perspective, this fact aligns with the fact that the early negativities, including N400 and LAN, are sensitive to semantic and structural predictability. On the other hand, late effects, such as P600 and the late AN, reflect an integration process unrelated to predictability.

(1) a. Control:

Koochi-ga	senshu-o	30-pun-**kan**	sidoosita.
Coach-NOM	player-ACC	30-minute-**for**	instructed

'The coach instructed the player for 30 minutes.'

b. Additive coercion (i.e. ATELIC ↪ TELIC interpretation):

Koochi-ga	senshu-o	30-pun-**de**	sidoosita.
Coach-NOM	player-ACC	30-minute-**in**	instructed

'The coach instructed the player in 30 minutes.'

(2) a. Control:

Sinnyu-shain-ga	shorui-o	30-pun-**de**	insatsusita.
new.employee-NOM	paper-ACC	30-minute-**in**	printed

'The new employee printed the papers in 30 minutes.'

b. Subtractive coercion (i.e. TELIC ↪ ATELIC interpretation):

Sinnyu-shain-ga	shorui-o	30-pun-**kan**	insatsusita.
new.employee-NOM	paper-ACC	30-minute-**for**	printed

'The new employee printed the papers for 30 minutes.'

References

[1] Bott, O. (2010) *The Processing of Events*. Amsterdam: John Benjamins.

[2] Chow, W-Y. (2013) The Temporal Dimension of Linguistic Prediction. *Doctoral Dissertation*, University of Maryland, College Park.

[3] Paczynski, M., Jackendoff, R., & Kuperberg, G. (2014) When events change their nature: The neurocognitive mechanisms underlying aspectual coercion. *Journal of Cognitive Neuroscience*, 26(9), 1905–1917.

[4] Yano, M. & Sakamoto, T. (2016) The functional dissociations between semantic repair and revision processes in Japanese: Evidence from event-related brain potentials. *Studies in Language Sciences*: *Journal of the Japanese Society for Language Sciences*, 14, 106–125, Tokyo: Kaitakusha.

Processing Chinese Relative Clauses with Different Lengths of Adverbials

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This study reports two asymmetries in processing Chinese relative clauses with different lengths of adverbials: (1) an asymmetry between processing subject relative clauses and object relative clauses, and (2) an asymmetry between processing arguments and adjuncts. The results of the study not only add a chapter to the long years of debate on the factors involved in the processing of dependency relations exhibited in relative constructions with the head following the relative clause, but also help theoretical linguists better understand the syntactic structures of arguments vs. adjuncts.

A design of "auditory stimulus + visual cloze sentence" is adopted in the experiment conducted in this study. The auditory stimuli are bi-clausal sentences with three types of embedded clauses - subject-relative clauses, object-relative clauses, and control non-relative embedded clauses. In addition, three lengths of adverbials are variables in the embedded clauses: (1) no adverbial; (2) one adverbial ([AdvP1]); (3) two adverbials ([AdvP1][AdvP2]). The visual cloze sentences are simple and short, which requires participants to fill a name in the cloze blank (either subject cloze or object cloze) according to what they have heard. A set of examples of auditory stimuli and visual stimuli is attached.

An important result of our experimental study shows a significant processing advantage of object relative clauses in Chinese: object relative clauses are processed with higher accuracy rates and shorter reaction times. Such an object advantage can be accommodated by proposals based on working memory or thematic order or context effect – all of which can be subsumed under a linear ordering notion (see, among others, Gibson 1998, Hsiao & Gibson 2003, Gibson & Wu 2013, Lin 2014). The study has important implications on the issue of how different results might be produced due to different experimental designs (e.g., auditory vs. visual stimuli vs. elicitation of production).

Another significant result of our study shows that different lengths from the addition of adverbials in embedded clauses do not influence the accuracy and reaction time of the processing of the constructions in question. The lack of effect from adverbials indicates that they do not add to the processing load, which suggests that distinctions need to be made in the processing of arguments vs. adjuncts. Such a distinction between arguments and adjuncts supports proposals like Bobaljik (1999), which analyze adjuncts as in a separate domain from arguments structurally.

Examples of auditory stimuli:

Subject relative clause:

wǒ V1 ([AdvP1] [AdvP2]) V2 *Xiǎomíng/Xiǎogāng de rén shì Xiǎogāng/Xiǎomíng*

'I V1 the person who V2 Xiaoming/Xiaogang ([AdvP1] [AdvP2]) was Xiaogang/Xiaoming.'

Object relative clause:

wǒ V1 *Xiǎomíng/Xiǎogāng* ([AdvP1] [AdvP2]) V2 *de rén shì Xiǎogāng/Xiǎomíng*

'I V1 the person who Xiaoming/Xiaogang V2 ([AdvP1] [AdvP2]) was Xiaogang/Xiaoming.'

No relative clause:

wǒ V1 *Xiǎomíng/Xiǎogāng* ([Asp1] [Asp2]) V2 *Xiǎogāng/Xiǎomíng*

'I V1 Xiaoming/Xiaogang V2 Xiaogang/Xiaoming ([AdvP1] [AdvP2]).'

Examples of visual stimuli:

Subject cloze:

_____ V2 *mǒurén*

'____V2 somebody.'

Object cloze:

mǒurén V2 _____

'Somebody V2 ____.'

Reference

Bobaljik, Jonathan David. 1999. Adverbs: the hierarchy paradox. *Glot International* 4.27-28.

Gibson, Edward. 1998. Linguistic complexity: Locality of syntactic dependencies. *Cognition* 68.1-76.

Gibson, Edward & H.-H. Iris Wu. 2013. Processing Chinese relative clauses in context. *Language And Cognitive Processes* 28.125-55.

Hsiao, Franny & Edward Gibson. 2003. Processing relative clauses in Chinese. *Cognition* 90.3-27.

Lin, Chien-Jer Charles. 2014. Effect of thematic order on the comprehension of Chinese relative clauses. *Lingua* 140.180-206.

The Perception of Handshapes in the Hong Kong Sign Language

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Categorical perception (CP) is a psychophysical phenomenon in which certain tokens in a continuum of stimuli are perceived categorically rather than continuously (Liberman et al., 1967). In spoken language, CP is subject to language specific effect for some phoneme contrasts as /r/-/l/ in English (Miyawaki et al.,1975; Iverson et al., 2003) while for others (i.e. /p/ - /b/), CP is language independent (Eimas et al., 1971; Kuhl & Miller, 1975). Also, English and cross-language studies indicate that the level of CP is not consistent across types of phoneme contrasts. For instance, CP effect is the strongest in voiced stop consonants (Jonisse, Zevin & McCandkiss, 2007) followed by fricatives (Lago et al., 2015). Vowel contrasts are perceived least categorically (Repp, Healy & Crowder, 1979; Stevens et al., 1969).

Studies on sign language handshape perception are aimed at understanding whether CP is a language-dependent (domain-specific) or language-independent (domain-general) phenomenon. Yet, previous findings are rather controversial. Studies conducted by Emmorey et al., (2003) and Baker et al., (2005) showed a better discrimination across category handshape boundaries in the perception of ASL for deaf native signers over hearing non-signers, though both groups identified the handshape contrasts categorically. However, other studies found no CP effect in the above groups (Newport, 1982), and across deaf native, deaf non-native (L2) and hearing non-native (L2) signers (Morford et al., 2008). Morford et al. (2008) further argued that between-group variability in the discrimination task was due to native signers' less sensitivity to within-category than cross-category contrasts. Following Morford's study, Best et al. (2010) added one more hearing non-signers group and found results similar to Morford et.al's. They suggested that the only difference in just one phonetic feature might have resulted in the lack of CP effects in their and earlier studies. Therefore, CP effects could be found when handshape contrasts involve multiple articulatory differences. To place these predictions within the framework of the Sonority Hierarchy developed by Brentari (1998), increased inherent sonority values could enhance perceptual salience of a single sign. For handshape features, metacarpal joint (base joints) features are more sonorant than interphalangeal joint (non-base joint) features, thus perceptually more salient.

The current study aims to further explore if CP effects exist in the perception of HKSL handshapes among three groups: deaf native signers, hearing non-native signers, and hearing non-signers. A forced choice identification task and an ABX discrimination task were designed based on two sets of handshape contrasts varying in selected finger (2 vs. 5) and joint feature (extend vs. non-extend). Each set of stimuli includes three continua (e.g. selected finger: SAME vs. NOT; joint feature: HAND vs. YELLOW) of two contrastive handshapes, with each containing 11 still pictures paced evenly between two endpoints of the continuum in the presentation and elicitation. Results showed a more robust CP effect for selected finger contrasts than joint feature contrasts, suggesting that selected fingers pose greater sonority when compared with joint features. Also, deaf native signers showed a different pattern from two other groups in their perception of HKSL handshapes.

References

Baker, S. A., Idsardi, W. J., Golinkoff, R. M., & Petitto, L.-A. (2005). The perception of handshapes in American Sign Language. *Memory & Cognition*, 33, 887-904.

Best, C.T., Mathur, G., Miranda, K.A., Lillo-Martin, D. (2010) Effect of sign language experience on categorical perception of dynamic ASL pseudosigns. *Attention, Perception & Psychophysics*, 72(3), 747-762.

Brentari, D. (1998). A prosodic model of sign language phonology. Cambridge, Mass.: MIT Press.

Eimas, P.D., Siqueland, E.R., Jusczyk, P., & Vigorito, J. (1971). Speech perception in infants. *Science*. 171, 303-306.

Emmorey, K., McCullough, S., & Brentari, D. (2003). Categorical perception in American Sign Language. *Language & Cognitive Processes*, 18, 21-45.

Iverson, P., Kuhl, P.K., Akahane-Yamada, R. (2003) A perceptual interference account of acquisition difficulties for non-native phonemes. *Cognition*, 87(1):B45-B57.

Jonisse, M., Zevin, J., & McCandliss, B. (2007). Brain mechanisms implicated in the preattentive categorization of speech sounds revealed using fMRI and a short-interval habituation trial paradigm. *Cerebral Cortex*, 17, 2084-2093.

Kuhl, P.K. & Miller, J.D. (1975). Speech perception by the chinchilla: Voiced-voiceless distinction in alveolar plosive consonants. Science, 190, 69-72.

Lago, S., Scharinger, M., Kronrod, Y., & Idsardi, W.J. (2015). Categorical effects in fricative perception are reflected in cortical source information. *Brain & Language*, 143,52-58.

Liberman, A.M., Cooper, F.S., Shankweiler, D.S. & Studdert-Kennedy, M. (1967). Perception of the speech code. *Psychological Review*, 74, 431-461.

Miyawaki, K., Strange, W., Verbrugge, R., Liberman, A.M., Jenkins, J.J., Fujimura, O. (1975). An effect of linguistic experience: The discrimination of [r] and [l] by native speakers of Japanese and English. *Perception & Psychophyscis,* 18,331-340.

Morford, J., Grieve-Smith, A., MacFarlane, J., Staley, J., & Waters, G. (2008). Effects of language experience on the perception of American Sign Language. *Cognition*, 109, 41-53.

Newport, E. (1982). Task specificity in language learning? Evidence from speech perception and American Sign Language. In E. Wanner & L. Gleitman (Eds.), Language acquisition: The state of the art (pp. 450-486). Cambridge: Cambridge University Press.

Repp, B.H., Healy, A.F., & Crowder, R.G. (1979). Categories and context in the perception of isolated steady-state vowels. *Journal of Experimental Psychology: Human Perception & Performance*, 5, 129-145.

Stevens, K.N., Liberman, A.M., Öhman, S.E.G., & Studdert-Kennedy, M. (1969) Crosslanguage study of of vowel perception. *Language & Speech*. 12, 1-23.

[±Null Topic] Parameters in Mandarin-speaking Children

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Over the past few years, parameter-setting theory has become under criticism even within the minimalist program framework. There is controversy in whether syntax needs to be invariant and parametrization is largely due to some third factors, like frequency (Boeckx, 2014). In the present study, we compared two classical language acquisition models, the triggering model by Gibson and Wexler (1994) and Yang's (2002, 2004) variational model, which emphasizes input frequency, against the empirical domain of (direct) object drop in Mandarin. To evaluate them, we conducted a corpus-based study of the speech of 47 typically developing, monolingual Mandarin-speaking children aged 1;2–6;5 (total: 4624 utterances), and their caregivers, from the CHILDES database. Child productions were grouped into nine 6-months intervals, and we took into consideration the path of acquisition of topic drop parameters by analyzing the acquisition of null objects (1) and objects in the *ba* construction (2). We assume that null objects are licensed by a null Topic (Huang 1982) and that the *ba* construction implies the movement of an overt object from its canonical position to a low Contrastive Topic position. All the sentences analyzed included (overt/covert) objects with transitive verbs and appropriateness to context was taken into consideration.

The results show that only null objects occur at age 1;2, but children rapidly converge to the adult grammar at age 1;8 both quantitatively and qualitatively (Example 1 and Figure 1). The percentage of null objects by children aged 1;8 is not statistically different from that found in adult production. In terms of MLU, adult performance is attained by MLU 1.75–2.25. The *ba* construction is not attested until age 1;8 and shortly after 3;6 the presence of this construction is reaching adult levels (Figure 2). Most importantly, all sentences with *ba* produced by children included the obligatory post-*ba* NP from the first occurrence, with deviant sentences without object raising or with a dropped object, such as (3) or (4), not attested; we conclude that the *ba* construction is an early acquisition despite its low frequency of occurrence.

Adopting the same methodology as in Legate & Yang (2007), we calculated the overall rates of [±Null object] in the adults' production (Table 1). A numerical disadvantage of the null object grammar was found (31.2%), similar to the advantage of the target [+Tense] grammar of French (39.6%) (Table 2). Based on that, we expect, if we adopt Yang's frequency model, that Chinese children will converge to the target setting (i.e. null object grammar) even much later than French-speaking children abandon the Root Infinitive stage (i.e. later than 2;8). However, Chinese children are performing at ceiling at age 1;8, which reveals that the parameter that governs null topics is set from very early on. Input frequency of *ba* is still lower, and so would target performance be expected to be. Our results do not lend support Yang's model, since no delay nor variational stage was found in the children's development, rather parameter setting was in an all-or-nothing manner as expected on the triggering model.

(1)   ma-ma na (Ø) hao.   (Weiying, 1;8)
       mom   take   well   'Mom, take it (it = pen) well.'
(2)   ba   da-hui-lang   gan   zou   le.   (Haohao, 1;8)
       BA   wolf   drive   away   PERF.   'I drove the wolf away.'
(3)   *ba   gan   zou   da-hui-lang le.
       BA   drive   away   wolf PERF.   'I drove the wolf away.'
(4)   *ba   gan   zou   le.
       BA   drive   away   PERF.   'I drove (it) away.'
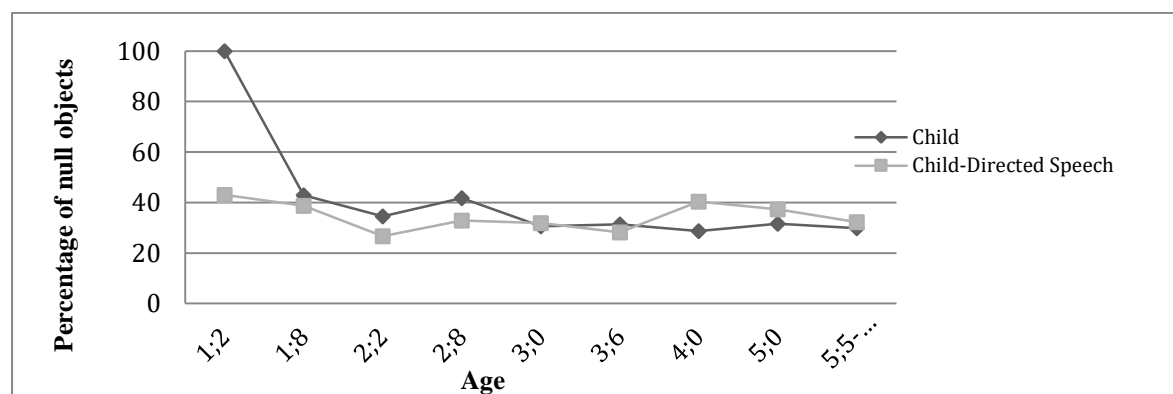
Fig. 1: Null objects in child and child-directed speech, Chinese
(only transitive sentences considered)
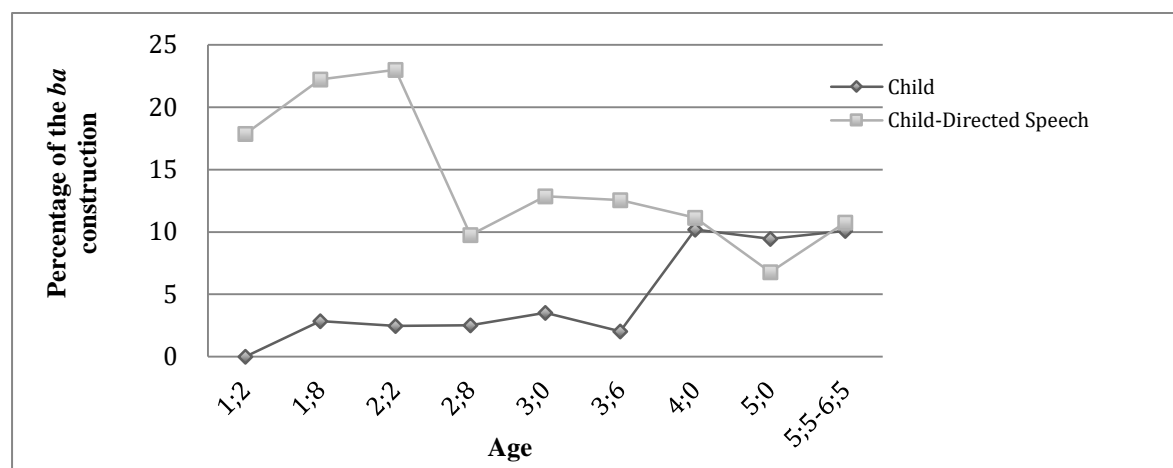
Fig. 2: The *ba* construction in child and child-directed speech, Chinese
(only transitive sentences considered)

Rewards [+Null object]	760/2208
Rewards [–Null object]	1448/2208
([–Null objects]–[+Null object])%	(65.6–34.4) = 31.2%

Table 1: Quantitative evidence in child-directed Chinese for [±Null objects] acquisition

Language	% for [+T] - % for [-T]	Duration
Spanish	60.2%	~ 2;0
French	39.6%	~ 2;8
English	5.8%	> 3;5

Table 2: Quantitative evidence in favor of the [+Tense] grammar (from Legate & Yang, 2007: 336)

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Index of authors

INDEX OF AUTHORS

Tourism information

USEFUL WEBSITES AND NUMBERS

24-hours Emergency service (Police, Fire, Ambulance):   Tel: (+852) 999

Hong Kong International Airport:
http://www.hongkongairport.com/eng/index.html   Tel: (+852) 21818888

Hong Kong Observatory:
http://www.hko.gov.hk/contentc.htm   Tel: (+852) 1878200

Department of Health:
http://www.dh.gov.hk/eindex.html   Tel: (+852) 29618989

The Hong Kong Tourism Board:
http://guide.discoverhongkong.com/us   Tel: (+852) 25081234

Dining recommendation:
https://www.openrice.com/en/hongkong

CUHK campus information

Security Office (Provides 24-hour emergency service on campus):
http://www.scu.cuhk.edu.hk/index.php/en/   Tel: (+852) 39437999

SOME SITES OF INTEREST ON CAMPUS

University Gallery

Location: Main entrance, G/F, University Library, Central Campus

Opening hours:

Mondays, Tuesdays, Thursdays to Saturdays, 10:00 am-5:00 pm

Website: http://www.cuhk.edu.hk/ugallery/en/   Tel: (+852) 39438603

The gallery displays hundreds of photographs, artifacts, and multimedia resources that exhibit the history and achievement of CUHK in the past 50 years.

Art Museum, Institute of Chinese Studies

Location: Institute of Chinese Studies, Central Campus

Opening hours:

Mondays to Wednesdays, Fridays and Saturdays 10:00 am-5:00 pm,

Sundays and Public Holidays 1:00 – 5:00 pm

Website: http://www.cuhk.edu.hk/ics/amm/index.html   Tel: (+852) 39437416

The museum exhibits a wide range of artifacts illuminating the rich arts, humanities, and cultural heritage of ancient and pre-modern China, comprising over twelve thousand items. Free audio gallery guides are available for groups and individual visitors.

Jockey Club Museum of Climate Change

Location: 8/F, Yasumoto International Academic Park   Tel: (+852) 39433972

Opening hours:

Mondays, Tuesdays, Thursdays to Saturdays, 9:30 am – 5:00 pm

Website: https://www.gaia.cuhk.edu.hk/index.php/en/mocc

The first of its kind in the world, the museum offers an interactive and multimedia exhibition showcasing valuable collections and information about climate change.

Travel guide

For more detailed directions with photos of landmarks of the various routes, please browse or download the file at: www.icteap1.net/transportation

1. **Directions from University MTR station to Cho Yiu Conference Hall**

   (Ground floor, University Administration Building)

Upon leaving Exit A of University station, turn right to walk to the school bus stop. Take either Route 1A or 1B, and alight at **Sir Run Run Shaw Hall (邵逸夫堂)** bus stop (2^{nd} stop for Route 1A, and 3^{rd} for Route 1B). To get to Cho Yiu Conference Hall from the Run Run Shaw Hall bus stop, walk forward to University Mall. Turn right, and walk along the University Mall towards **University Library (大學圖書館).** You will see University Administration Building on the left of the library.

CUHK school bus schedule

線號 Route No.	線路 Route	運作時段 Period of Operation	開出時間 Departure Time	停站 Calls at
1A	本部線 Main Campus	0740 | 1840	逢 Every 20 , 40 (繁忙時段加強服務) (With additional service during peak periods) S + NS	港鐵大學站 Univ. MTR Station → 大學體育中心 Univ. Sports Centre → 邵逸夫堂 Sir Run Run Shaw Hall → 大學行政樓 Univ. Admin. Bldg. → 善衡書院 S.H. Ho College → (back to station)
1B		0800 | 1800	逢 Every 00 S	港鐵大學站 Univ. MTR Station → 賽馬會研究生宿舍 Jockey Club Postgraduate Hall → 大學體育中心 Univ. Sports Centre → 邵逸夫堂 Sir Run Run Shaw Hall → 大學行政樓 Univ. Admin. Bldg. → 善衡書院 S.H. Ho College → (back to station)

2. **Directions from Cho Yiu Conference Hall to University MTR station**

To return to University MTR station from Cho Yiu Conference Hall, walk down the stairs outside the conference hall on your left as you exit. Walk down the stairs and you will see another flight of steps on the left. Walk down the steps that leads to the junction that meets the road and you will see the University Administration Building bus stop on your left. Take any bus to the final stop, University MTR station.

MAIN VENUE FOR MARCH 10, 2017 (UNIVERSITY ADMINISTRATION BUILDING)

LUNCH VENUE FOR MARCH 10, 2017 (LU MING ROOM, BENJAMIN FRANKLIN CENTER)

VENUE FOR WELCOMING RECEPTION ON MARCH 10, 2017 (FUNG KING HEY BUILDING)

3. Directions from University MTR station to Yasumoto International Academic Park (YIA)

Yasumoto International Academic Park (YIA) is within walking distance from the University MTR station. Upon leaving Exit A of the station, turn right and walk along Station Road to the first junction. Cross Station Road at the pedestrian crossing, and you will arrive at YIA. The buildings on both sides of the steps are the two wings of YIA. Proceed to the 2/F via the outdoor escalators. Enter a glass door on the left and you will find YIA LT5 on that corridor.

(Yasumoto International Academic Park)

4. Directions from Yasumoto International Academic Park to University MTR station

To return to University MTR station from LT5 of Yasumoto International Academic Park, exit from the glass doors leading to the outdoor steps upon leaving the lecture theatre. Go down two flights of steps, cross the road on your left at the pedestrian crossing, and head toward the University MTR station.

Map of the Central Campus

Fung King Hey Building
馮景禧樓
(Venue for welcoming reception)

Cho Yiu Conference Hall
祖堯堂
(Main venue for March 10)

CUHK school bus stop –
Sir Run Run Shaw Hall
中大巴士站 – 邵逸夫堂

Lu Ming Room, Benjamin Franklin Center
范克廉樓（鹿鳴廳）
(Lunch venue for March 10)

CUHK school bus stop –
University Administration Building
中大巴士站 - 大學行政樓
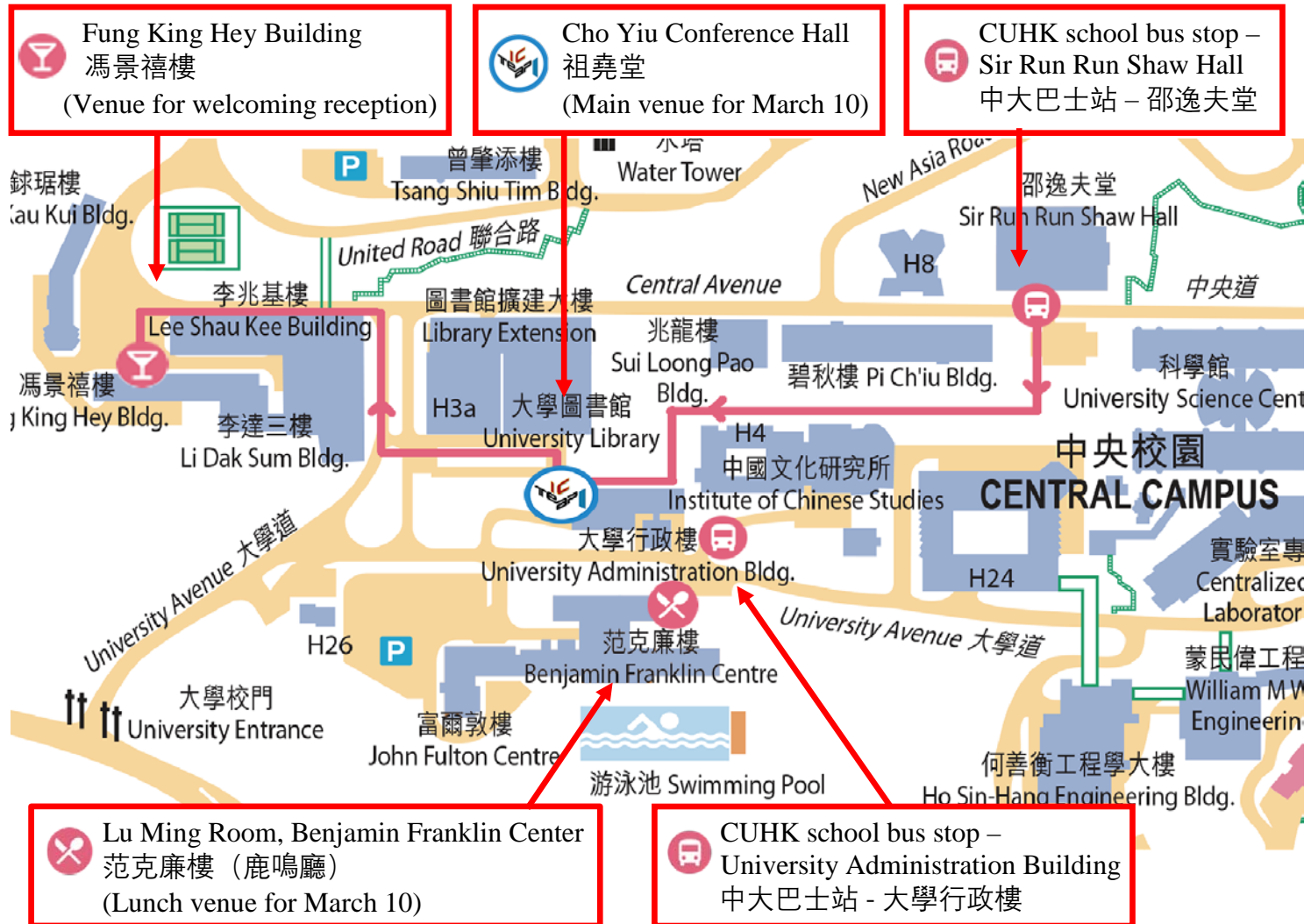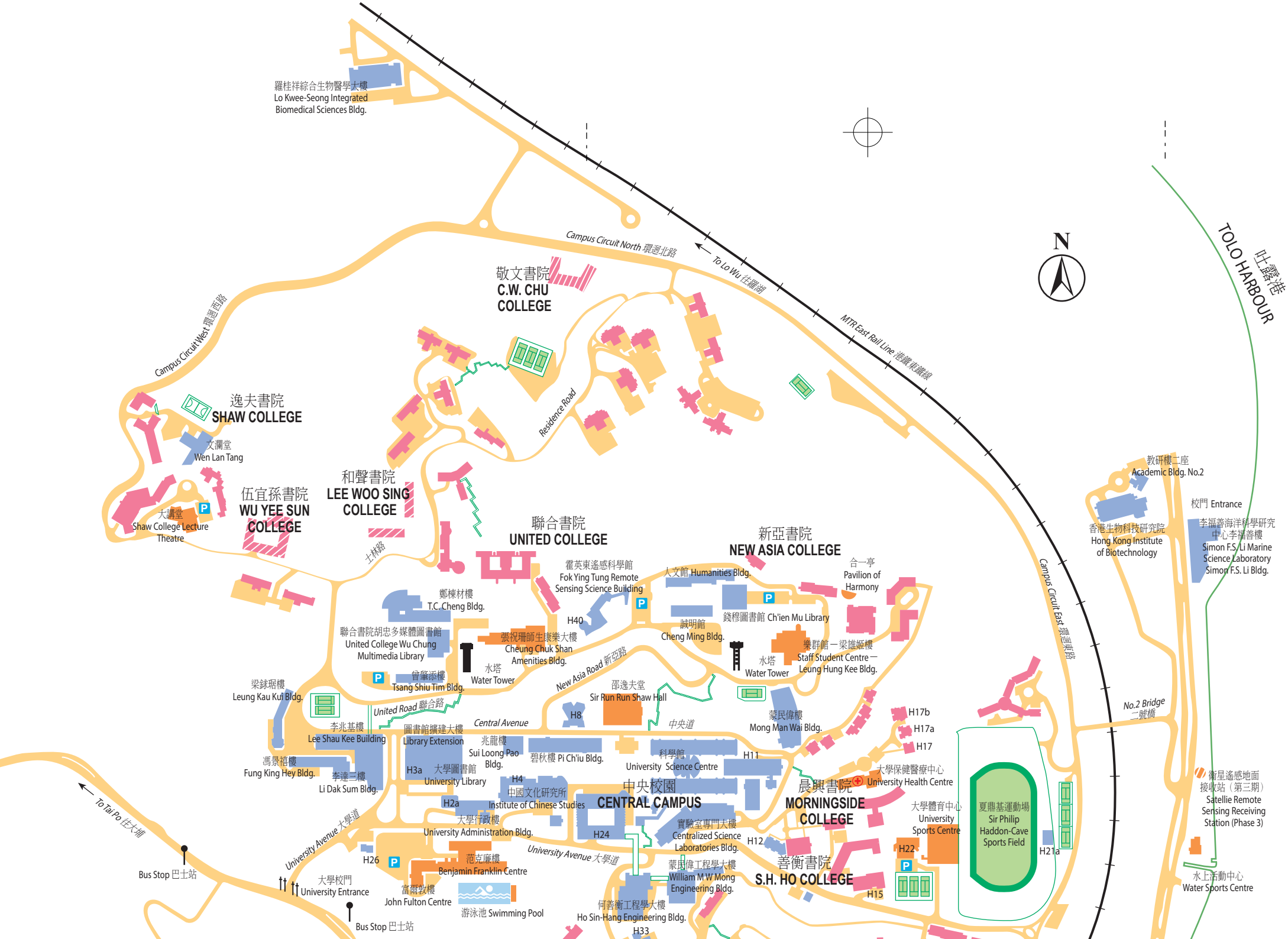
羅桂祥綜合生物醫學大樓
Lo Kwee-Seong Integrated
Biomedical Sciences Bldg.

Campus Circuit North 環迴北路

To Lo Wu 往羅湖

TOLO HARBOUR 吐露港

MTR East Rail Line 港鐵東鐵綫

敬文書院
C.W. CHU
COLLEGE

Campus Circuit West 環迴西路

N

逸夫書院
SHAW COLLEGE

Residence Road

教研樓二座
Academic Bldg. No.2

文瀾堂
Wen Lan Tang

和聲書院
LEE WOO SING
COLLEGE

伍宜孫書院
WU YEE SUN
COLLEGE

香港生物科技研究院
Hong Kong Institute
of Biotechnology

校門 Entrance

大講堂
Shaw College Lecture
Theatre

P

土林路

新亞書院
NEW ASIA COLLEGE

合一亭
Pavilion of
Harmony

李福善海洋科學研究
中心李福善樓
Simon F.S. Li Marine
Science Laboratory
Simon F.S. Li Bldg.

聯合書院
UNITED COLLEGE

霍英東遙感科學館
Fok Ying Tung Remote
Sensing Science Building

人文館 Humanities Bldg.

Campus Circuit East 環迴東路

鄭棟材樓
T.C. Cheng Bldg.

H40

誠明館
Cheng Ming Bldg.

錢穆圖書館 Ch'ien Mu Library

P

聯合書院胡忠多媒體圖書館
United College Wu Chung
Multimedia Library

張祝珊師生康樂大樓
Cheung Chuk Shan
Amenities Bldg.

樂群館一梁雄姬樓
Staff Student Centre —
Leung Hung Kee Bldg.

No.2 Bridge
二號橋

梁銶琚樓
Leung Kau Kui Bldg.

水塔
Water Tower

曾肇添樓
Tsang Shiu Tim Bldg.

新亞路
New Asia Road

水塔
Water Tower

蒙民偉樓
Mong Man Wai Bldg.

H17b

衛星遙感地面
接收站（第三期）
Satellie Remote
Sensing Receiving
Station (Phase 3)

P

United Road 聯合路

邵逸夫堂
Sir Run Run Shaw Hall

H17a

H17

李兆基樓
Lee Shau Kee Building

Central Avenue

H8

中央道

H11

大學保健醫療中心
University Health Centre

夏鼎基運動場
Sir Philip
Haddon-Cave
Sports Field

馮景禧樓
Fung King Hey Bldg.

圖書館擴建大樓
Library Extension

兆龍樓
Sui Loong Pao
Bldg.

碧秋樓
Pi Ch'iu Bldg.

科學館
University Science Centre

晨興書院
MORNINGSIDE
COLLEGE

大學體育中心
University
Sports Centre

李達三樓
Li Dak Sum Bldg.

H3a

大學圖書館
University Library

H4

H12

H22

H21a

To Tai Po 往大埔

H2a

中國文化研究所
Institute of Chinese Studies

中央校園
CENTRAL CAMPUS

善衡書院
S.H. HO COLLEGE

大學行政樓
University Administration Bldg.

實驗室專門大樓
Centralized Science
Laboratories Bldg.

H15

University Avenue 大學道

H24

H26

P

Bus Stop 巴士站

University Avenue 大學道

蒙民偉工程學大樓
William M W Mong
Engineering Bldg.

大學校門
University Entrance

范克廉樓
Benjamin Franklin Centre

P

水上活動中心
Water Sports Centre

富爾敦樓
John Fulton Centre

游泳池 Swimming Pool

何善衡工程學大樓
Ho Sin-Hang Engineering Bldg.

Bus Stop 巴士站

H33

Campus Map
校園地圖

香港中文大學 The Chinese University of Hong Kong

Academic Bldg. No. 1	H33	教研樓一座
Art Museum	H4	文物館
Chan Kwan Tung Inter-university Hall	H17a	昆棟樓
Chiangs Bldg.	H17b	曙光樓
Cho Yiu Conference Hall	H2a	祖堯堂
Choh-Ming Li Basic Medical Sciences Bldg.	H11	李卓敏基本醫學大樓
Estates & Maintenance Bldg.	H15	營修樓
Kwok Sports Bldg.	H22	汾陽體育館
Lady Ho Tung Hall	H12	何東夫人堂
Lady Shaw Bldg.	H24	邵逸夫夫人樓
Satellite Remote Sensing Receiving Station	H40	衛星遙感地面接收站
Security & Transport Bldg.	H26	保安交通中心
Sports Field Annex I	H21a	運動場一號室
Tin Ka Ping Bldg.	H3a	田家炳樓
Y.C. Liang Hall	H8	潤昌堂
Yali Guest House	H17	雅禮賓館
Chen Kou Bun Bldg.	C3c	陳國本樓
Esther Lee Bldg.	C1	利黃瑤璧樓
Hui Yeung Shing Bldg.	C3a	許讓成樓
Inter-university Hall	C30	博文苑
Lee Hysan Concert Hall	C1a	利希慎音樂廳
Li Wai Chun Bldg.	C3	李慧珍樓
New Student Amenity Centre	C38	學生活動中心
Orchid Lodge	C9	蘭苑
Sino Bldg.	C3d	信和樓
Wong Foo Yuan Bldg.	C3b	王福元樓

* 香港中文大學教學酒店的酒店設施
   Hotel Facilities of the Teaching Hotel of The Chinese University of Hong Kong

LEGEND 圖例

Administration/Teaching/Research Bldg.
行政 / 教研樓宇

Amenities/Service Bldg.
文娛 / 服務設施

Residence/Student Hostel/Guest House
住宅 / 宿舍 / 賓館

Sports Field/Tennis Court
運動場 / 網球場

Visitor Parking
訪客停車場

Construction in Progress
興建中

Map labels:

校園東區 EASTERN CAMPUS

Tai Po Road 大埔道
To Kowloon 往九龍
To East Tsimshatsui 往尖東

漢園 Vice-Chancellor's Residence

神學樓小聖堂 New Chapel to Theology Building

崇基教堂 College Chapel

聯誼會 Staff Club

牟路思怡圖書館 Elisabeth Luce Moore Library

眾志堂 Chung Chi Tang

伍何曼原樓 Wu Ho Man Yuen Building

康本國際學術園 Yasumoto International Academic Park

綜合教學大樓 An Integrated Teaching Building

Pond Crescent 池旁路

末圓湖 Lake Ad Excellentiam

方潤華堂 Fong Yun Wah Hall

上海總會科研技術中心 Shanghai Fraternity Association Research Services Centre

自然地理實驗站 Physical Geography Experimental Station

C3d / C9 / C3c / 何添樓 Ho Tim Bldg. / C3 / C3b / C3a

崇基學院行政樓 Chung Chi College Administration Bldg.

嶺南體育館 Lingnan Stadium

方樹泉樓 Fong Shu Chuen Bldg.

Station Road 車站路

No.I Bridge 一號橋

崇基學院 CHUNG CHI COLLEGE

C1 / C1a

崇真路 Chung Chi Road

港鐵大學站 University Station

Bus Stop 巴士站

校門 Entrance

C30

巴士總站 Bus Terminus

鄭裕彤樓 Cheng Yu Tung Building

香港凱悅酒店—沙田* Hyatt Regency Hong Kong, Sha Tin*

Map of University MTR station and Yasumoto International Academic Park (YIA)

眾志堂
Chung Chi Tang

Wu Ho Man Yuen
Building

牟路思怡圖書館
Elisabeth Luce Moore Library

康本國際學術園
Yasumoto International
Academic Park

綜合教學大樓
An Integrated
Teaching Building

Pond Crescent 池旁路

未圓湖
Lake Ad Excellentiam

聯誼會
Staff Club

方潤華堂
Fong Yun Wah Hall

Station Road 車站路

Yasumoto International Academic Park
康本國際學術園
(Conference venue for March 11 & 12)

C9

何添樓
Ho Tim Bldg.

方樹泉樓
Fong Shu Chuen Bldg.

No.1 Bridge 一號橋

自然地理實驗站
Physical Geography
Experimental Station

嶺南體育館
Lingnan Stadium

C3b

C3a

崇基學院行政樓
Chung Chi College
Administration Bldg.

崇基學院
CHUNG CHI COLLEGE

崇基路 Chung Chi

CUHK school bus stop –
University MTR station (Routes 1A & 1B)
中大巴士站 – 港鐵大學站

C1

C1a

港鐵大學站
University Station

University MTR station (Exit A)
港鐵大學站（A 出口）