ICPEAL 17

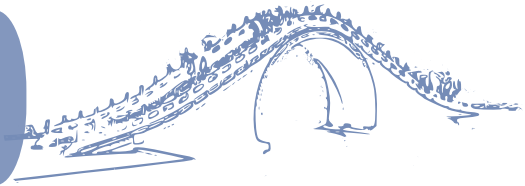## CLDC 9

"Between Culture and Cognition"

The 9th Conference on
Language, Discourse, and Cognition
第九屆 語言、言談、與認知國際研討會

The 17th International Conference on
the Processing of East Asian Languages
第17屆東亞語言認知處理國際研討會

19-21 October 2018
National Taiwan University
國立臺灣大學

venue
Department of Psychology
心理系館

Organizers
- Graduate Institute of Linguistics
- Department of Psychology
- Imaging Center for Integrated
  Body, Mind and Culture Research

Sponsors
- Department of Electrical Engineering, NTU
- Linguistic Society of Taiwan

icpeal2018cldc@gmail.com

http://homepage.ntu.edu.tw/~gilntu/icpeal2018cldc/

MOST 科技部
Ministry of Science and Technology
NTUEE
LST 台灣語言學會
Linguistic Society of Taiwan

ICPEAL 17 — CLDC 9

The 17th International Conference on the
Processing of East-Asian Languages
第十七屆東亞語言認知處理國際研討會

The 9th Conference on
Language, Discourse, and Cognition
第九屆語言、言談、與認知國際研討會

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Venue
Department of Psychology,
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Organizers
Graduate Institute of Linguistics, National Taiwan University
Department of Psychology, National Taiwan University
Imaging Center for Integrated Body, Mind and Culture Research, National Taiwan University

Sponsors:
Ministry of Science and Technology, Taiwan
Linguistic Society of Taiwan
Department of Electrical Engineering, NTU

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Introduction

Welcome to ICPEAL 17 – CLDC 9

In 2018, the joint conference ICPEAL 17 –CLDC 9 (the 17th International Conference on the Processing of East Asian Languages and the 9th Conference on Language, Discourse, and Cognition) will be held from 19 to 21 October 2018 at National Taiwan University (NTU), Taiwan.

This joint conference will be hosted by the Graduate Institute of Linguistics, the Department of Psychology, Neurobiology and Cognitive Science Center at NTU, the Imaging Center for Integrated Body, Mind and Culture Research at NTU. It will be sponsored also by the Department of Electrical Engineering at NTU, and the Linguistic Society of Taiwan (LST).

The ICPEAL, which was held first in Taiwan at NTU 40 years ago in 1978, provides opportunities for researchers to disseminate new research findings, to exchange new ideas, to develop new paradigms, and, consequently to advance the cognitive study of not only East Asian languages, but also languages around the world.

The CLDC similarly aims to provide a forum for researchers interested in language, discourse, and cognition to discuss new research findings, exchange innovative ideas and share the approaches in these fields. Topics relevant to language, discourse, and cognition as well as interdisciplinary studies stimulated over the last few years have given rise to a growing body of critical findings, making CLDC an important event in the field of cognitive linguistics in East Asia.

Consequently, studies presented at the joint conference ICPEAL–CLDC focus on the study of languages from many perspectives, in order to enrich the dialogue between different fields of cognitive science. As such, the main theme of this joint conference is: BETWEEN CULTURE AND COGNITION, referring to the place language often finds itself in.

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website: `http://homepage.ntu.edu.tw/~gilntu/icpeal2018cldc/`

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Guidelines

For oral presentations

1. Presentation files are collected on the presentation day. For presenters in the morning sessions, please give us your files during the registration period. For presenters in the afternoon sessions, please give us your files during the lunch break.

2. Presentation time: 20 minutes per presentation (15 minutes + 5 minutes for Q&A).

3. The conference language is English.

4. No printing or copying facilities are available for use on the conference site. If you plan to give handouts to the audience, please prepare the copies on your own.

For poster presentations

1. Please have your poster dimension in A0 size (841 x 1189 mm). The designated boards we provide for you is in VERTICAL direction (portrait mode).

2. Please put up the poster in the designated space (see your poster number in this booklet). Posters 1-23 are to be presented in the North Hall; posters 24-31 in the South Hall.

3. Poster presenters are requested to put the poster up during the first tea break in the morning or during lunch.

4. During the poster session period, presenters are asked stand next to their poster and explain their research to interested participants of the conference.

5. The conference language is English. Please have your presentation/materials in English.

6. Posters can remain on display until the end of the presentation day.

7. No printing or copying facilities are available for use on the conference site. If you plan to give handouts to the audience, please prepare the copies by yourself in advance. 50-60 copies for each session is suggested.
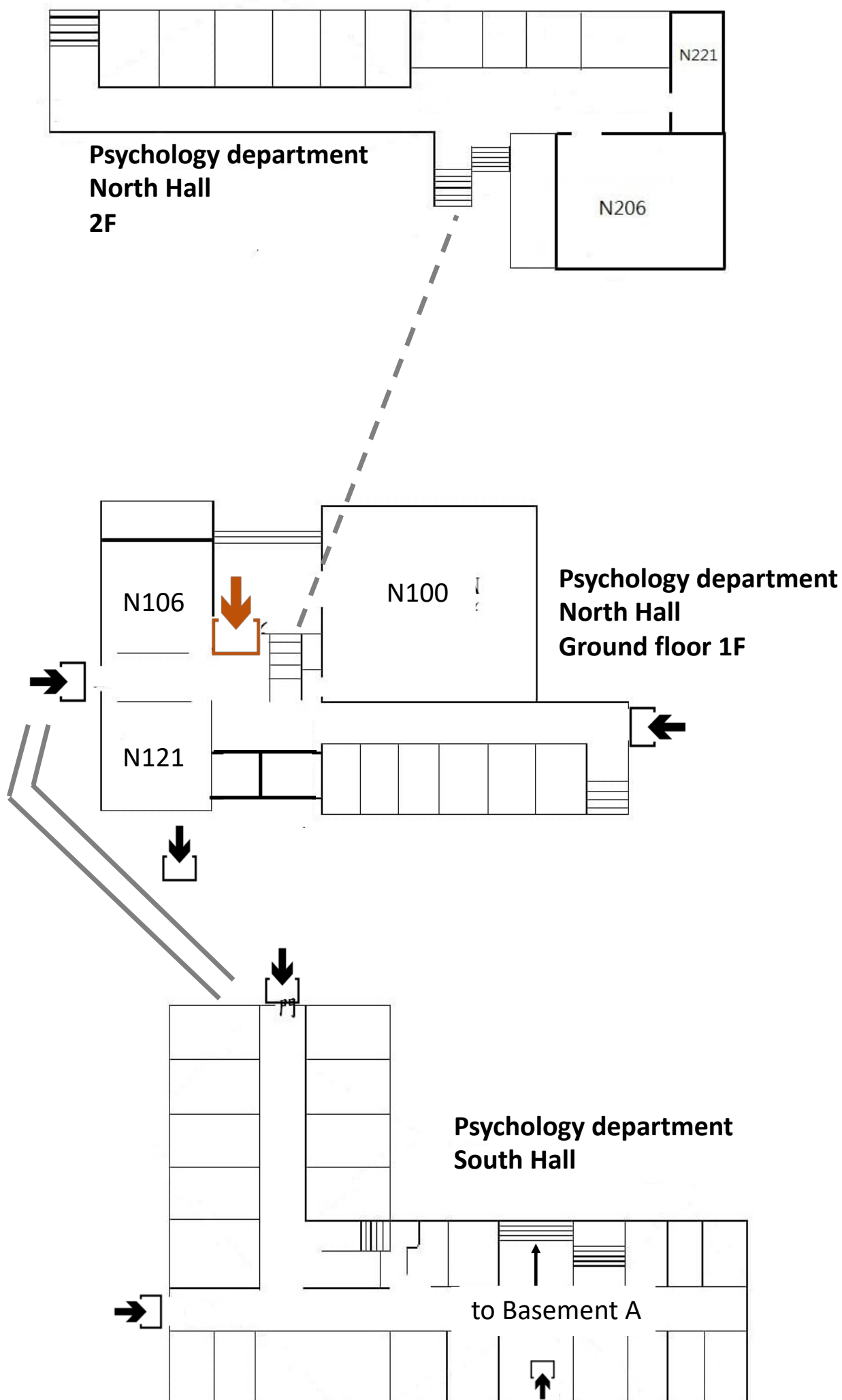
**Psychology department
North Hall
2F**

N221

N206

**Psychology department
North Hall
Ground floor 1F**

N106

N100

N121

**Psychology department
South Hall**

to Basement A

The 17th International Conference on the Processing of East Asian Languages and the 9th Conference on Language, Discourse, and Cognition (ICPEAL 17 – CLDC 9)

October 19th- October 21st, 2018
National Taiwan University

	October 19th, Friday		
8:00-8:40	**REGISTRATION** Lobby of the North Hall, Psychology Department		
8:40-9:00	**OPENING REMARKS** N100 ROOM		
9:00-10:00	**KEYNOTE SPEECH I** **Linking speaking and understanding** **Dr. Colin Phillips** *Professor, Department of Linguistics, University of Maryland, USA* **Chair: Lily I-Wen Su** *National Taiwan University* N100 ROOM		
10:00-10:30	TEA BREAK Lobby of the North Hall, Psychology Department		
	I-1 Phonetics Chair: Chenhao Chiu N206 Room	**I-2 Typology** Chair: Li-May Sung N106 Room	**I-3 Chinese character** Chair: Jei-Tun Wu N100 Room
10:30-10:50	**Production of Cantonese Sentence-Final Particles: The Complementary Distribution of Final Raising and Global Raising in Cantonese Intonation** *Rachel Ka Ying Tsui and Xiuli Tong*	**"Frog, where are you?" Topic continuity, transitivity, and grounding in Indonesian** *D. Victoria Rau*	**The handwriting of Chinese characters: a psycholinguistic database** *Ruiming Wang, Shuting Huang and Zhenguang Cai*
10:50-11:10	**Developmental paths of English high vowel production by Japanese speakers** *Kakeru Yazawa*	**Insubordinated Conditional Clauses in Spoken Chinese: A Functional Typological Analysis** *Chiang Chun-Hsien and Horie Kaoru*	**Predictors of Chinese Character Reading: Evidence from Proficient L2 Learners** *Meiling Hao*
11:10-11:30	**Effects of literal meaning of emotional lexical content on the identification of vocal emotion: Comparison between native and non-native languages** *Sumi Shigeno*	**Putting or removing? Wipe verbs in Saisiyat, Taiwanese Southern Min and Mandarin** *Marie Yeh, Ying Cheng, Jui-Chuan Yeh and Han-Chun Huang*	**Productive knowledge of formal regularities in Chinese characters** *James Myers and Tsung-Ying Chen*

11:30-11:50	**The effect of lexical competition on realization of phonetic contrasts:** **The case of voicing in Japanese** *Mafuyu Kitahara, Keiichi Tajima and Kiyoko Yoneyama*	**Perfective aspect in the languages of Madang Province, Papua New Guinea** *Masahiko Nose*	**Chinese Basic Character Recognition Test:** **A word recognition test for young Taiwanese readers** *Shiou-Yuan Chen, Min Liu, Tai-Li Chou and Chien-Ju Chang*
11:50-13:00	LUNCH N100 and N106 Room		
	II-1 Semantic processing Chair: Su-Ling Yeh N106 Room	**II-2 Language disorder** Chair: I-fan Su South Basement A Room	**II-3 Discourse** Chair: Shuping Huang N100 Room
13:00-13:20	**Neural correlates of within- and between-category processing of Chinese classifiers** *Chu-Hsuan Kuo, Min Liu, Hsuan-Chih Chen and Tai-Li Chou*	**Morphosyntactic processing in Mandarin-speaking Children with Specific Language Impairment** *Huei-Mei Liu and Li-Chun Kuo*	**Spatial Conceptualization of Sequence Time in Language and Gesture** *Kawai Chui*
13:20-13:40	**The neural substrates for predictive processes in sentence comprehension** *Chih-Ting Chang, Ping Li, Jie-Li Tsai, En-Ju Lin, Pei-Chun Chao, Chia-Ju Chou and Chia-Ying Lee*	**A Study of How Young Children with High Functioning Autism Spectrum Disorder Process Fictive Motion Sentences** *Shu-Ping Gong and Yi-Wen Tseng*	**Fixed vs. free elaboration in picture-based counseling: Contrastive discourse patterns and implications** *Dennis Tay*
13:40-14:00	**One construal mechanism of underspecified meaning during sentential meaning composition** *Yao-Ying Lai and Maria Piñango*	**Language Performance and Short-Term Memory Span in Mandarin-Speaking Preschoolers with Bilateral Hearing Impairment: A Comparison between Two Approaches to Memory Span Measurement** *Ming Lo, Yi-Xiu Li, Shiou-Yuan Chen, Pei-Hua Chen and Cho-Yuan Lin*	**The cross-cultural variation in subjectification/objectivization: Comparing the meaning of adjectives in different languages** *Yusuke Sugaya*
14:00-14:20	**Unconscious semantic priming reflected by Gamma- and theta-band synchronization: an MEG study** *Sung-En Chien, Yung-Hao Yang, Shohei Teramoto, Yumie Ono and Su-Ling Yeh*	**Meta-linguistic Awareness Skills in Chinese-speaking Children with Hyperlexia** *Lirong Luo, Yin-Ting Tai and I-Fan Su*	**Cross-cultural differences in the development of interlocutor sensitivity in the realization of apology and refusal strategies** *Yuh Fang Chang*
14:20-15:20	**POSTER SESSION 1** TEA BREAK The North Hall and South Hall, Psychology Department		
	III-1 Phonetics and L2 learning Chair: Kiyoko Yoneyama N106 Room	**III-2 Syntactic processing** Chair: Shu-Ping Gong South Basement A Room	**III-3 Emotion** Chair: Shiao-Hui Chan N100 Room
15:20-15:40	**Contrasts along vowel duration vs. f0 contour: developmental changes in stop identification by Korean-speaking learners of Mandarin Chinese** *Sang-Im Lee-Kim*	**Same interpretation, different process?** **The case of verbal-le and You+VP in Taiwan Mandarin** *Aymeric Collart*	**Influence of Emotion Labeling on the Judgment of Emotion Category of Facial Emotion** *Hyeonbo Yang, Jeongsoo Lee and Donghoon Lee*

15:40-16:00	**The effect of nasalization and duration in the adaptation of English nasals by Mandarin speakers** Yangyu Chen and Yu-An Lu	**The Processing Mechanisms of Anaphoric Resolution— A Study of the Processing of Expletive Pronouns in Chinese** *Chin Lung Yang*	**The Function of Figurative Expressions in Emotions: Ortony's vividness hypothesis** *Haejin Kim and Donghoon Lee*
16:00-16:20	**Learning to read Chinese in very young L2 Chinese learners in Hong Kong** *Yanling Zhou, Catherine McBride and Kevin Chung*	**Modularity in view of spoken Chinese relative clause processing** *Tuyuan Cheng and Jei-Tun Wu*	**Semantic Prosody in the Processing of Mandarin-Chinese Verbs: An ERP study** *Yen-Lin Chen and Shiao-Hui Chan*

16:30-17:40	YOUNG INVESTIGATOR SPEECH **The megastudy approach of Chinese language processing** **Dr. Yiu Kei Tsang** *Assistant Professor, Department of Education Studies, Hong Kong Baptist University, Hong Kong* **Eye movement control in word recognition** **Dr. Koji Miwa** *Associate Professor, Graduate School of Humanities, Nagoya University, Japan* **Finding syntactic regularity in the right brain** **Dr. Chia-Lin Lee** *Associate Professor, Graduate Institute of Linguistics, National Taiwan University, Taiwan* **Cognitive loads and feedforward mechanism in speech production** **Dr. Chenhao Chiu** *Assistant Professor, Graduate Institute of Linguistics, National Taiwan University, Taiwan* **Chair: Tai-Li Chou** *National Taiwan University* N100 ROOM
17:40-18:00	**AWARD CEREMONY** N100 ROOM
19:00-21:30	**BANQUET** HOWARD CIVIL SERVICE INTERNATIONAL HOUSE
	October 20th, Saturday
8:30-9:00	**REGISTRATION** Lobby of the North Hall, Psychology Department

9:00-10:00	**KEYNOTE SPEECH II** **Linguistic and Cognitive Profiles of Mandarin-Speaking Children at Risk for Developmental Language Disorders** **Dr. Li Sheng** *Associate Professor, Communication Sciences & Disorders, College of Health Sciences, University of Delaware, USA* **Chair: Janice Fon** *National Taiwan University* N100 ROOM		
10:00-10:20	TEA BREAK Lobby of the North Hall, Psychology Department		
	IV-1 Phonetics Chair: Hsuan-Chih Chen N206 Room	**IV-2 Lexical processing** Chair: Fan-Pei Yang N106 Room	**IV-3 Japanese culture** Chair: Chiarung Lu N100 Room
10:20-10:40	**Sensorimotor adaptation of speech in L2 learners of Mandarin** *Li-Hsin Ning*	**Reading Chinese four-character idiomatic expressions: knowing more about semi-fixed idioms from eye-movement measures** *Daniel Tszhin Lee and Hintat Cheung*	**Onomatopoeia Used in Product Descriptions for Japanese Commercial Snacks ─ Focus on Terms Related to Food Texture** *Nami Fukutome*
10:40-11:00	**Lexical Nature of the Phonological Priming Effect in Chinese Naming** *Hsin-Chin Chen*	**Comparing the time-courses of lexical processes in L1 and L2 word recognition: A lexical decision eye tracking study with Japanese-English bilinguals** *Jamie Taylor, Yoichi Mukai and Koji Miwa*	**All that glitters is not gold: Prototypical semantic change in shiny Literary Chinese ideophones** *Thomas Van Hoey and Chiarung Lu*
11:00-11:20	**Phonological interference in a primed picture naming task** *Jie Wang, Andus Wing Kuen Wong, Urs Maurer, Wai Leung Wong and Hsuan-Chih Chen*	**A processing perspective on Korean learners of English's interpretation of *himself*** *Darcy Sperlich*	**The Influence of Language and its Background Culture on Speakers in Constructing L2 self** *Yuko Tomoto*
11:20-11:40	**Prosodic realization of Taiwan EFL learners** *Sally Chen and Janice Fon*		**Testing the long-before-short performance preference in Japanese with a Murakami novel** *Hing Yuet Fung and Stephen Matthews*
11:40-12:00	**Spatial prepositions ti7, tiam3 and tua3 in Taiwan Southern Min revisited:** **From a corpus-based approach** *Chihkai Lin*		**Communication in Chanoyu, the Japanese Tea Ceremony** *Yoko Shirasu*
12:00-13:00	LUNCH N100 and N106 Room		
	V-1 Language development in children Chair: Yuhtsuen Tzeng N206 Room	**V-2 Bilingual and cognition** Chair: Chia-Lin Lee N106 Room	**V-3 Reading** Chair: Hsin-Chin Chen N100 Room

13:00-13:20	**Relationship between reading acquisition and cognitive abilities among Chinese third-graders** *Jieping Ou, Ami Sambai, Akira Uno, Hong Pei* and *Hiroki Yoneda,*	**The Role of Working Memory Capacity in Metaphor and Metonymy Comprehension in EFL Learners' Minds: An fMRI Study** *Chia-Hsin Yin and Fan-Pei Yang*	**The Influence of Cross-Linguistic Characteristics on Reading Proficiency for Bilinguals** *Marilyn Cai Ling Yeo, Chiao-Yi Wu, Beth Ann O'Brien* and *Shen-Hsing Annabel Chen*
13:20-13:40	**Effects of orthographic N-size and familiarity of neighbors on Kanji-word reading in Japanese children with and without developmental dyslexia** *Ami Sambai, Chihiro Owada and Akira Uno*	**L1 pragmatic transfer in L2 topic development: a qualitative approach to EFL context** *Emiko Kihara and Marian Wang*	**Enhancing Active Reading Experience for EFL Learners** *Heien-Kun Chiang, Toshiyuki Kamada, Hong-Wen Chen, Feng-Lan Kuo and Chian-You Chen*
13:40-14:00	**Text content and dynamic patterns of 5th grade classroom discourse** *Yuhtsuen Tzeng, Wansin Chang and Su-fen Hsueh*	**From *No, he was* to *Yes, he was*: On the conceptual changes in the processing of negative yes-no questions of Chinese-English bilinguals** *Haoruo Zhang, Norbert Vanek and Danijela Trenkic*	**Reading with pictures in first and second language** *Yen Na Yum, Pui Lun Tai and Neil Cohn*
14:00-15:20	**POSTER SESSION 2** TEA BREAK The North Hall and South Hall, Psychology Department		
	VI-1 Syntactic processing and L2 learning Chair: Chia-Lin Lee South Basement A Room		**VI-2 Production** Chair: Yu-an Lu N100 Room
15:20-15:40	**Syntactic priming in interactions between a Japanese EFL learner and a native speaker of English** *Miwa Morishita, Mayumi Kawamura and Yasunari Harada*		**Syllable retrieval precedes sub-syllabic encoding in Cantonese spoken word production** *Andus Wing-Kuen Wong, Jie Wang and Hsuan-Chih Chen*
15:40-16:00	**How do L2 Learners Interpret the Unconventional Expressions? An experimental study of the construction-based processing** *Kaori Yamasaki and Taro Okahisa*		**Linking L2 production to orthographic transcription** *Jeffrey J. Holliday*
16:00-16:20	**The degree of learners' exposure to the target language affects pre-verbal prediction in L2** *Itsuki Minemi and Yuki Hirose*		**A preliminary study on the respiratory muscular and respiratory control of Chinese JFL, utilizing 4 RST and a respiratory mask** *Toshiko Isei-Jaakkola and Keiko Ochi*
16:20-16:40			**Confidence through Understanding: The Effects of Pronunciation Training on EFL Learners' Motivation and Aptitude** *Seiko Oguri, D. Patrick Allen and Tetsuo Kato*
16:50-17:50	**KEYNOTE SPEECH III** **Insubordination in Japanese and across languages: grammaticalization, language evolution, and discourse interaction** **Dr. Toshio Ohori** *Professor, Environment & Information Studies, Keio University, Japan* **Chair: Tai-Li Chou** *National Taiwan University* N100 ROOM		

		October 21st, Sunday	

8:30-9:00	**REGISTRATION** Lobby of the North Hall, Psychology Department	
9:00-10:00	**<u>KEYNOTE SPEECH IV</u>** **Is A General Theory of Utterance Interpretation Really Possible?** **Dr. Raymond W. Gibbs Jr.** *Distinguished Professor of Psychology, University of California, Santa Cruz, USA* **Chair: Wen-Yu Chiang** *National Taiwan University* N100 ROOM	
10:00-10:20	TEA BREAK Lobby of the North Hall, Psychology Department	

	VII-1 Acquisition Chair: Hin Tat Cheung N100 Room	**VII-2 Corpus analyses and applied research** Chair: Shu-Kai Hsieh N106 Room	**VII-3 Metaphor** Chair: Wen-Yu Chiang N206 Room
10:20-10:40	**Null-subjects and Bilingual First Language Acquisition** *Arathi Raghunathan and Vaijayanthi Sarma*	**Impact of short-term Study Abroad and Internship Programs on Participants Multiple Intelligence Measures** *Yasunari Harada, Miwa Morishita, Kazuo Sakai and Minatsu Ariga*	**Metaphorical Framing in Postcolonial Hong Kong Political Speeches (1997-2017): The Role of Mapping Principles in Corpus-based Metaphor Analysis** *Huiheng Zeng and Kathleen Ahrens*
10:40-11:00	**Early two-word utterances in Japanese child language** *Miyuki Sawada*	**Discourse Processing of the Frontier and Pastoral Poetry with Machine Learning** *Ching-Ching Lu, Ting-Hao Yang, Chun-Hung Chen and Wen-Lian Hsu*	**Reviewing Cognitive Theories of Language as Descriptive Tools for "Ecological Semantics"** *Takuya Inoue*
11:00-11:20	**How do Japanese Deaf and Hard-of-Hearing students infer novel verb meanings?** *Junko Kimura and Mutsumi Imai*	**The Effect of the Request Using Honorifics on the Hearer's Acceptance and Favorability to the Speaker** *Jarang Kwak, Haejin Kim, Soyoung Kwon and Donghoon Lee*	**Yes! We Want to Survive: Our Primary Desire is the Main Force of Embodied Simulation** *Soichi Kozai and Francis Lindsey Jr.*
11:20-11:40	**Writing in character learning among Chinese children: from an embodied cognition perspective** *Zhengye Xu and Duo Liu*		**A cognitive approach to the multimodal metaphors in Chinese anti-corruption political cartoons** *Yin Liu*
11:50-12:00	**CLOSING REMARKS** N100 ROOM		

10/19 POSTER SESSION 1

North Hall: Poster no. 1-23; South Hall: Poster no. 24-29

No.	Paper Title	Authors
1	Production of Neutral Tone in Taiwan Mandarin	Nai-Wen Chang
2	Creative metaphors in Chinese video ads	Molly Xie Pan
3	Language Change across 3000 Years: A Survey on Chinese Su	Hsu-Hung Ke
4	Better than Native: Tone Language Experience Enhances Second Language English Stress Perception in Cantonese-English Bilinguals	William Choi, Xiuli Tong and Arthur Samuel
5	Speech-Gesture Integration in Semantic Processing	Chia-Ying Lee, Kawai Chui, Kanyu Yeh, and Pei-Chun Chao
6	Polish Swear Words in Context: Derivatives of "Fuck"	Natasza Maria Olesiejuk
7	Discrimination of Note Durations in Musical Meter and Phonological Awareness in Chinese Reading Difficulties: A Preliminary Study	Natalie Yu-Hsien Wang, I-Chen Chen, Hui-Yu Lin, Yu Tsao and Hsiao-Lan Sharon Wang
8	Developmental changes of the semantic radical on lexical processing in third graders, sixth graders, and college students	Jei-Tun Wu, Min Liu, Shiou-Yuan Chen and Tai-Li Chou
9	The neural correlates of semantic processing in proficient Mandarin Chinese learners	Chia-Ho Lai, Shu-Kai Hsieh, Chia-Lin Lee, Lily I-Wen Su, Te-Hsin Liu, Chia-Rung Lu, I-Ni Tsai and Tai-Li Chou
10	Completely relevant: An examination of completive aspect marker =anga in Paiwan	Chun-Jan Young
11	Neural Changes Associated with Semantic Processing in Aged Schizophrenia	Chi-Lin Yu, Tzung-Jeng Hwang and Tai-Li Chou
12	Life Participation and Cognition: Perspectives of People with residual Aphasia and their Care Partners in Taiwan	Jou-Chia Chu, H. Sheen Chiou, Ping Hsin Chang, Vickie Yu and Yu-Rong Zheng
13	A Case Study on the Multi-faceted Verb tǎo 討 in Mandarin Chinese	Ying-Chang Chen
14	Cross-Position Semantic Priming Effect on Reversible Chinese Compound Words	Yueh-Ling Lee
15	Developmental Effects on Transparency and Consistency of Semantic Processing to Chinese Characters in Second to Fifth Graders	Cheng-Yu Hsieh, Jei-Tun Wu and Tai-Li Chou
16	Shame Culture In Indonesian Literature	Benedictus B. Dwijatmoko
17	Neural correlates of association strength and categorical relatedness in youths with autism spectrum disorder	Ciao-Han Wong, Susan Shur-Fen Gau and Tai-Li Chou
18	The temporal order of tone and vowel processing during Cantonese spoken word identification: An ERP study	Yun Zou and Yiu-Kei Tsang
19	Linking lateralized syntactic processing, inter-hemispheric communication, and language performance —An Event-Related potential study.	Chih Yeh, Hsiuan-Huey Yen, Hsin-Jen Hsu and Chia-Lin Lee

20	Learning Mandarin Tones with Manual Directional Gestures	Anna Zhen, Stephen Van Hedger, Shannon Heald, Susan Goldin-Meadow and Xing Tian
21	Revisit Modern Chinese Construction "V-lai-V-qu" From a Cognitive Perspective	Xiaolong Lu
22	The link between auditory temporal processing and phonetic system knowledge in Chinese reading	Li-Chih Wang, Duo Liu, Kevin Kien Hoa Chung and Szu-Yin Chu
23	How socioeconomic status (SES) affects Chinese word reading and writing among Chinese kindergarten children in Hong Kong	Wing-Kai Fung and Kevin Kien-Hoa Chung
24	The Realization of Nuclear and Prenuclear Accents in Mandarin Learners of English	Hui-Yu Chien, Ashley Chu and Janice Fon
26	Mandarin speaking children's comprehension of universal quantifiers and negation	Huanhuan Shi, Li Zheng, Yue Ji, Ning Hsu and Li Sheng
27	A Corpus-based Study for learning Saisiyat Focus Markers	Yan-Chi Chen
28	AOA Effect on L2 Sentence Processing of Relative Clauses in Korean-English Bilinguals: Evidence from Self-paced Reading	Namsil Lim
29	Registers of Internet Language and E-grammar	Te-Wei Chen

10/20 POSTER SESSION 2 North Hall: Poster no. 1-23; South Hall: Poster no. 24-31		
No.	**Paper Title**	**Authors**
1	Sex differences in adults with attention-deficit/hyperactivity disorder: a counting Stroop functional MRI study	Shu-Hui Lee, Seng Chia, Tai-Li Chou, Li-Kuang Yang and Susan Shur-Fen Gau
2	More Than Flirt: A Conceptual Metaphor Study in Kabe-don	Tzu Ying Kao
3	Through Dialogic Syntax to Verbal Conflicts	Jia-Chen Lin
4	The Effect of Temporal Concept on the Automatic Activation of Spatial Representation: From Axis to Plane	Dexian He and Xianyou He
5	Differences in age-related neural connectivity of semantic processing in youths with autism and typically developing youths	Min Liu, Susan Shur-Fen Gau and Tai-Li Chou
6	Dis-continuous flash suppression: A novel interocular suppression reveals temporal integration of subliminal linguistic information	Shao-Min Sean Hung and Po-Jang Brown Hsieh
7	Developmental changes during semantic judgments to Chinese characters: A Longitudinal Study of Effective Connectivity	Li-Ying Fan and Tai-Li Chou
8	A Study on the English Translation of *ba* constructions in Taipei People	Hsin Jie Wu
9	Semantic processing as an endophenotype in youths with autism spectrum disorder	Chuan-Ching Liao, Susan Shur-Fen Gau and Tai-Li Chou
10	Language non-selective access in cross-script bilinguals: a masked phonological and semantic priming event-related potentials (ERP) study	Hyun Kyung Lee and I-Fan Su

11	Exploring nonlinguistic cognitive ability in adults with aphasia	Tzujung Huang, Pinghsin Chang, Chunhan Yang, Yuhsuan Lin, Hsinhuei Chiou and Hsinjen Hsu
12	Qualitative Evaluation of EFL Pre-service Teachers' Reading Prosody	Heien-Kun Chiang, Midori Inaba, Anthony Robins, Feng-Lan Kuo, Wen-Ying Ting and Kuan-Han Lai
13	The Reshaping of English from an East Asian Lexical Perspective: Fixed Expressions	Silvaana Udz
14	Orthographic Neighborhood Token Frequency Effect in Chinese Character Recognition	Zih Yun Yang and Hsin Chin Chen
15	Gender Semantic Priming Effects on the Lexical Meaning of Korean EFL Learners: Sociocultural Factor	Boonjoo Park and Youngsu Kwon
16	Neural correlates of morphological complexity processing: An fMRI study between noun versus verb and adjectives in morphologically complex Korean word	Jeahong Kim and Kichun Nam
17	Hemispheric Differences and Complexity of Syntactic Structure	Shiuan-Huey Yen, Ling Tang, Hsinjen J. Hsu and Chia-Lin Lee
18	Culturally tinged spatial metaphor in human relations: a case study of *biǎo* 'outer' in Mandarin Chinese	Yu-Shan Lin and Chiarung Lu
19	The English Article Usage of EFL College Students in Southern Taiwan: An English-Chinese Contrastive Analysis	Yating Hsieh
20	Reading comprehension of multimodal text in children vs adults	Pui Lun Alan Tai, Yen Na Yum and Neil Cohn
21	A Study on Expectations of international Students in Japan	Keiko Shimizu-Stumborg, Yuko Tomoto and Yoko Shirasu
22	The contribution of phonology or orthography in the lexical boost in priming	Mengxing Wang, Zhenguang Cai, Martin Pickering, Holly Branigan and Ruiming Wang
23	On the poly-functionality of *hao-bu-hao* in Mandarin Chinese: A usage-based approach	Tzu-Min Li
24	ERP evidence for hemispheric equipotentiality from 8-10 year old children	Ling-Ling Wei and Chia-Lin Lee
25	Effectiveness of Chants vs. Reader's Theater on Young EFL Learners' Oral Reading Fluency	Meng-Hua Li, Feng-Lan Kuo, Midori Inaba and Heien-Kun Chiang
26	Mobilize your audience: Linguistic patterns of cognitive perspective-taking in storytelling	Nina Tzu-Ling Yeh, Miguel Wei-Yan Li and Lily I-Wen Su
27	Individual differences in brain electrophysiological responses to nouns that denote emotions	Xu Xu, Taomei Guo and Chunyan Kang
28	The word length effect in the processing of Sino-Korean compounds	Kwangoh Yi and Sungbong Bae
29	Mandarin-English bilingual children's code switching in chess teaching and playing	Man Chen Wang
30	The neural mechanisms of mentalizing during social interaction in autistic adults	Ting Chen, Susan Shur-Fen Gau and Tai-Li Chou
31	The Role of Entrenchment in Bilingual Production of Motion Construction: Evidence from Structural Priming	Ning Cai, Min Wang and Hang Wei
32	The time course of activation of morpheme, semantic and orthographic information in Korean derivational suffixed word	Jinwon Kang and Kichun Nam

Conference Abstracts

Keynote speeches

Linking speaking and understanding

Colin Phillips

Department of Linguistics, University of Maryland

Language comprehension, language production, and grammatical analysis are typically pursued relatively independently of one another. We have long been interested in the relation between parsing and grammar, but have neglected mechanisms for production. If we cannot unify mechanisms for speaking and understanding, then unifying grammatical computation with either of them is likely fruitless. I will discuss the progress that we have made on understanding these issues.

Linguistic and cognitive profiles of Mandarin-speaking children at risk for developmental language disorders

Li Sheng

College of Health Sciences, University of Delaware

Developmental language disorder (DLD), previously termed Specific Language Impairment, affects seven percent of children who have unexplained difficulties in learning their native language. Our current understanding of the linguistic and cognitive profiles of DLD in Mandarin is extremely limited. Better understanding of DLD in Mandarin is important due to the large number of children affected and for formulation of mechanistic explanations of Mandarin DLD. In this talk, I present three studies that utilized both experimental and naturalistic tasks that measured verbal executive functions, sentence comprehension, and narrative production performance in Mandarin speaking children aged 4-6 years with and without risk for DLD. Children at risk for DLD showed deficits in all three language domains, but there were subcomponents in each domain that were relatively intact. An exploration of the interrelationships among these domains showed a significant correlation between inhibitory control and sentence comprehension and between sentence comprehension and narrative production. Together, these studies provide a basic description of the manifestations of Mandarin DLD, a platform for future investigations on the cognitive basis of Mandarin DLD, and information relevant to effective and efficient assessment and treatment protocols.

Insubordination in Japanese and across languages: Grammaticalization, language evolution, and discourse interaction

Toshio Ohori

Keio University

Recently there has been a surge of interest in the phenomenon of subordination (Evans 2007, Evans & Watanabe 2016), which poses interesting questions to the theory of grammar and that of communicative interaction. In this presentation, I will first give a survey of insubordinate constructions (aka "suspended clauses"), i.e. cases where the subordinate-marked clause stands by itself without the main clause, mainly drawing upon Japanese data. Then I will examine how insubordinate constructions would fit into the theory of grammaticalization (Heine & Kuteva 2007, Ohori 2011). Taken by itself, insubordination represents one phase of post-grammaticalization (along with "uncomplementation" where the CTP stands alone), but in some cases the former subordinate marker feeds into a new system of verb morphology such as tense-aspect system. In this sense, insubordination provides a missing link in the grammaticalization chain. Next, the destinies of subordination in historical time will cast a new light on the issue of language evolution. Levinson (2013) argued, contra Hauser, Chomsky & Fitch (2002), that recursion is ultimately rooted in conversational interaction. Lessons from the rise and fall of subordination suggests that this structure is rather unstable, and hence may not qualify as crucial evidence for the evolutionary emergence of the faculty of language as narrowly defined. It is claimed that the primary motivation for the formation of insubordination is the tendency to elaborate the clause periphery for the purpose of discourse management (cf. Kaltenböck, Keizer & Lohmann 2016), and that subordinate markers, due to their structural position, provide affordable resources to this end. The fact that this is a recurrent phenomenon through time and across languages points to the crucial role of discourse framing in the development and collapse of subordination.

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Heine, Bernd & Tania Kuteva. 2007. *The genesis of grammar*. Oxford: Oxford Univ. Press.

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Is a general theory of utterance interpretation really possible?

Raymond W. Gibbs, Jr.

University of California, Santa Cruz

How realistic is it to assume that psychologists, linguists, philosophers and other may someday be able to construct a general theory of utterance interpretation? Over the past 50 years, scholars have uncovered a tremendous amount about the processes and product of human language understanding. We have proposed a huge assortment of theories to explain how very specific types of utterances may be interpreted (e.g., syntactically ambiguous expressions, figurative language, pragmatic implicatures), with some of us working hard to articulate more comprehensive theories that could be applicable to all aspects of utterance interpretation. Yet the empirical data reveals many complexities that, on the surface, make some doubt whether a general theory of utterance interpretation is a feasible possibility. This talk describes some of these complexities in the empirical literature, focusing on figurative language use. I go on to argue that language scholars must embrace the diverse ways that people use and understand utterances and suggest concrete steps that we all should take if we are to one day find a more general theory, one which is perhaps tied to how people engage in any intentional action.

Young investigators' speeches

The megastudy approach of Chinese language processing

Yiu-Kei Tsang

Department of Education Studies,
Hong Kong Baptist University

Research in language processing has mainly been conducted through the experimental approach. Undoubtedly, carefully controlled experiments are important in advancing our knowledge. Yet, selection of properly-matched materials, dichotomization of continuous variables, and generalization from a small set of items represent major challenges of the experimental approach. Recently, researchers began to conduct megastudies to provide complementary data to factorial experiments. A typical megastudy contains thousands to tens of thousands of words. The large number of items allows better generalization and supports examination of the effects of multiple variables through regression-based analyses. In this presentation, I discuss how the megastudy approach can be used to study Chinese language processing. Illustrations are made with the Megastudy of Lexical Decision (MELD), a recently developed database that contains the lexical decision data of over 12000 one-character to four-characters words in traditional and simplified Chinese, collected from over 800 participants in mainland China and Hong Kong. In particular, I show how the analyses of MELD replicate and extend previous findings of morphemic effects, and how they reveal an unexpected effect of word length in Chinese word recognition.

Eye movement control in word recognition

Koji Miwa

Nagoya University, Japan

Eye movements in reading have been well-investigated for the last 40 years (Rayner 1998). However, psycholinguistic study of eye movements in isolated word reading has not taken place until recently. This might have been due to the common misconception that the eye does not move noticeably when reading an isolated word or, even if it does, that eye movements in word recognition are not psycholinguistically informative. However, it turned out that there are often two or more fixations in isolated word recognition. Furthermore, eye movements recorded during word recognition are systematically co-determined by lexical predictors and offer important insights into the time-course of lexical processing.

I report what we now know about eye movement control in isolated word recognition, given recent and on-going lexical decision with eye-tracking studies (Kuperman et al. 2009, Miwa & Dijkstra 2017, Miwa et al. 2014, Miwa, Libben & Ikemoto 2017). The aim of this presentation is twofold: (1) to demonstrate how the eye scans words in general (i.e., what lexical effects have been constantly observed across different studies) and (2) to demonstrate how morphographic words in particular are scanned (i.e., what lexical effects have been uniquely observed in Japanese word recognition). I scrutinize the accumulated data with a special focus on frequency effects, visual complexity effect, and their interactions with fixation locations. The results are discussed mainly with respect to models of complex word recognition and those of morphographic word recognition.

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Miwa, Koji & Ton Dijkstra. 2017. Lexical processes in the recognition of Japanese horizontal and vertical compounds. *Reading and Writing* 30(4). 791–812. https://doi.org/10.1007/s11145-016-9700-6.

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Finding syntactic regularity in the right brain

Chia-Lin Lee

Graduate Institute of Linguistics, National Taiwan University

19 Oct
YOUNG
INVESTIGATOR
16:30
PLACE

Left hemisphere (LH) specialization for language has been considered a key example of functional lateralization. However, the role of the right hemisphere (RH) and how the two hemispheres work together to process language remain poorly understood. In this talk, I will focus on syntactic regularity processing and present a series of studies designed to investigate factors that modulate the degree of lateralization in syntactic processing. All studies used the visual half-field presentation or monaural auditory presentation paradigm to elicit event-related potential (ERP) responses from the contralateral hemisphere. In some studies, additional Diffusion Tensor Imaging (DTI) data, structural brain imaging data (sMRI), and behavioral measures were also collected. Results of this series of studies showed very consistently that, at the group level, structural-based syntactic analysis (as indexed by the P600 grammaticality effects) is lateralized to the left hemisphere in young native speakers, but could be found in both hemispheres in older native speakers or learners of a second or artificial language. These studies thus demonstrated that, like the LH, the RH is capable of structural analysis, but its responses may be masked through inter-hemispheric inhibition that tends to be weaker with age or when the LH has not mastered the syntactic regularity. Our results also showed that, among native language processing in young individuals, the degree of lateralization could be additionally moderated by individuals' inter-hemispheric coordination ability and RH structural/functional connectivity. These findings thus suggest that functional lateralization of syntactic processing is determined by multiple factors and is more dynamic than previously thought.

Cognitive loads and feedforward mechanism in speech production

Chenhao Chiu

Graduate Institute of Linguistics, National Taiwan University

Speech production is a series of temporal and spatial coordination across different articulators along with cognitive involvement of selection and formation of the desired sounds. It is also noted that articulatory coordination requires pre-programming of speech plans (e.g., Lashley, 1951; Keele, 1981; Klapp, 1995, 2003) and these plans are susceptible to somatosensory feedback, such as auditory feedback perturbation (e.g., Houde and Jordan, 1998; Jones and Munhall, 2000) and somatosensory feedback perturbation (e.g., Abbs & Gracco, 1984; Tremblay et al., 2003). Compensatory responses to sensorimotor perturbation strengthen the need of preplanning and also suggest automatic responses as in feedforward control. Compared with feedback influence on speech production, it is less attended how cognitively constructed speech plans are performed by feedforward control. More crucially, it remains understudied whether or not speech plans can be executed with no or limited afferent feedback so that the speech motor behaviours are performed largely in feedforward control.

In this talk, I will summarize a series of studies to reveal the role of feedforward control in speech production and the link between cognitive and sensorimotor variables. Experiments using startling auditory stimulus (i.e., sound level > 120 dB) reveal that prepared speech is subject to a rapid release before sensorimotor feedback becomes available. While the startle-induced responses suggest speech articulation may be performed mainly through feedforward control, such rapid releases is not observed when the speech tasks involve a choice between two alternative targets or when target responses are not prepared in advance, such as a picture naming task, both of which require heavy association with higher level of cognitive processing. With startling auditory stimulus functioning as a physiological perturbation, feedforward mechanism in speech production as to cognitive processing as well as the preservation of phonetic details can be better understood.

Session I

Production of Cantonese sentence-final particles: The complementary distribution of final rising and global raising in Cantonese intonation

Rachel Ka-Ying Tsui & Xiuli Tong

Division of Speech and Hearing Sciences, Faculty of Education,
The University of Hong Kong

Because they carry both lexical (i.e., tone) and sentential (i.e., intonation) prosodic functions, Cantonese sentence-final particles (SFPs) provide a fascinating window into the distribution of SFPs and intonation when conveying interrogation in spoken language. SFPs refer to a class of bound segmental morphemes that are attached to the ends of sentences to denote different sentence types, including statements and interrogatives (e.g., Cheung 1986, Fang 2003, Kwok 1984, Matthews & Yip 2011, Yau 1980. For example, depending on the SFP, the same sentence 呢條係褲 (/lei1 thiu4 hɐi6 fu6/; "This is a pair of pants") can be realized either as a statement 呢條係褲**啊** (/lei1 thiu4 hɐi6 fu6 **a3**/; "This is a pair of pants.") with the declarative SFP 啊 /a3/, or an interrogative 呢條係褲**咩** (/lei1 thiu4 hɐi6 fu6 **mɛ1**/; "This is a pair of pants?") with the interrogative SFP 咩 /mɛ1/.

To date, however, only a limited number of studies have examined the role of SFPs in the prosodic system of Cantonese (e.g., Wu 2013, Xu & Mok 2011, Zhang 2014. In particular, it remains unclear how SFPs are realized prosodically (i.e., through f0) in relation to intonation when both the tonal targets of SFPs and intonation are meant to convey the same pragmatic aspects of utterances. The present study therefore tested the hypothesis of whether intonation would impose an extra f0 effect on the underlying tonal targets of SFPs when conveying interrogativity in spoken Cantonese.

A group of 21 native Cantonese speakers was asked to produce sentences with (1) interrogative and declarative SFPs attached to the end to denote the pragmatic aspect of sentences, and (2) homophones of the SFPs embedded in the sentence-final position of a neutral sentence.

Acoustic analyses on fundamental frequency (f0) showed that the presence of interrogative SFPs raises the overall global f0 curve of the entire interrogative utterances to a higher f0 level compared to the corresponding declarative utterances, but the f0 contour of SFPs remains unchanged. In the absence of SFPs, instead of global pitch raising, the essential indicator for interrogativity mainly falls on the manipulation of f0 within the sentence-final syllable, where the high question boundary tone imposes a local f0 rising effect thereby transforming the f0 contour of the syllable into a rising contour. These results therefore revealed that: (1) an interaction exists between intonation and lexical tone in the realization of SFPs, and (2) this interaction is mainly caused by global f0 raising expressing the interrogative status of the sentence.

The present study suggests that the effect of intonation is realized differently in SFPs and lexical words, even though both similarly bear underlying lexical tonal targets. Such a difference indicates that the functions of SFPs and high question bounary tones are in complementary distribution in conveying interrogativity in spoken Cantonese.

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Developmental paths of English high vowel production by Japanese speakers

Kakeru Yazawa
Waseda University

In American English and several other dialects of English, the tense-lax distinctions in high vowels (i.e. /iː-ɪ/ and /uː-ʊ/) contrast primarily in vowel spectra rather than duration. However, Japanese learners of English are known to rely heavily on duration to distinguish these contrasts, presumably being influenced by phonological vowel length in Japanese (i.e. /ii-i/ and /uu-u/). As for /iː-ɪ/, some studies claim that Japanese learners of English would maintain duration-based distinction (Morrison 2002), while others claim that they can learn to use spectral cues (Yazawa, Kondo & Escudero 2017). On the other hand, the /uː-ʊ/ contrast has rarely been studied due to its low frequency and the resulting scarcity of minimal pairs, which makes experimental design difficult. The present study aims to investigate developmental changes in the production of English /iː-ɪ/ and /uː-ʊ/ by Japanese learners of English, using cross-sectional data from an L2 English speech corpus called J-AESOP (Meng & Visceglia 2009). Seventy-two (47 female, 25 male) native Japanese speakers' read speech of "The North Wind and the Sun" (International Phonetic Association 1999) in the corpus were examined. To highlight proficiency-based differences, each speaker has been assigned a 'proficiency score' representing their assessed level of spoken English proficiency, rated by eight teachers of English (four native English speakers and four native Japanese speakers) on a 9-point scale (from 1 "poor" to 5 "native-like" with 0.5 increments). The distribution of proficiency scores was roughly mound-shaped, with a mean of 2.91 and a median 2.81. For acoustic analysis, a total of 2,760 vowel tokens (/iː/ = 1,270, /ɪ/ = 854, /uː/ = 217, /ʊ/ = 419) were obtained, of which F1, F2 and duration were measured using the computer software Praat. F2/F1 ratios were then calculated to represent vowel tenseness in a single value (larger = tenser). Then, linear mixed effects models were applied in R to investigate the contribution of two acoustic measures (F2/F1 ratio and duration) to proficiency score for each vowel category, with word being a random effect. The analysis found a significant effect of F2/F1 ratio on proficiency score for the vowel /ɪ/ ($\chi^2(1) = 125.8$, $p < .001$) but not for /iː/. The F2/F1 ratio of

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the lax vowel decreased as proficiency score increased, indicating that more proficient speakers produced it with more centralized spectral properties. While the tense vowel did not undergo a significant change in F2/F2 ratio, the result suggests that a spectral distinction can be established between /iː/ and /ɪ/ over the course of L2 learning. In contrast, no significant spectral shift was found for either /uː/ or /ʊ/, perhaps because the contrast is relatively infrequent and therefore more difficult to acquire (a follow-up analysis of the F3, which is related to lip rounding, found no significant effect either). Duration was a significant negative predictor of proficiency score for all four categories (ps < .01). This means that more proficient speakers produced shorter vowels in general, most likely due to their faster speaking rate. Taken together, these preliminary results indicate that Japanese speakers can acquire a more native-like, spectrally oriented perception for /iː-ɪ/ but not for /uː-ʊ/, which might be attributable to the differences in frequency of occurrence.

Effects of literal meaning of emotional lexical content on the identification of vocal emotion: Comparison between native and non-native languages

Sumi Shigeno

Aoyama Gakuin University

The purpose of this study was to compare the effects of emotion contained in the literal meaning of speech (ELMS) on the identification of vocal emotion. The Japanese participants in the study listened to emotional phrases spoken in their native language, that is, Japanese, as well as those spoken by respective foreign language speakers, such as in Swedish, Portuguese, Russian, Ukrainian, and English. Participants were instructed to listen carefully to the speakers' voices and focus on their emotions. The research used four sentences and their meaning in English corresponds to "Congratulations," "I love it," "I'm going to cry," and "My heart is breaking."The speakers uttered each of these four sentences using three types of vocal emotion: with intrinsic ELMS (emotionality congruent), with a neutral emotion, and using the opposite emotion. Participants were required to identify the speaker's emotion in a seven-alternative forced choice task including neutral emotion and six basic emotions: happiness, surprise, anger, disgust, fear, and sadness. The research also incorporated a "congruent condition," in which the emotion contained in the literal meaning of speech (words and phrases) was compatible with the vocal emotion, and an "incongruent condition," in which these forms of emotional information were discordant.

Results for Japanese indicated that the ability to identify emotions did not differ significantly between the congruent and incongruent conditions. However, when the participants listened to phrases spoken in foreign languages, their vocal emotion was correctly identified more often in the congruent than in the incongruent condition.

The different results for Japanese and foreign languages suggest that the literal meaning of emotional phrases influences the listener's perception of the speaker's emotion, and that Japanese participants could infer speakers' intended emotions even in the incongruent condition, when phrases were spoken in their native language. Based on the results of this study, a model is proposed, which illustrates

the process of emotion recognition in congruent and incongruent conditions. Although contextual and nonverbal cues are likely to play a relatively greater role for the Japanese culture (high context), it was hypothesized that the listener can integrate the speaker' s emotions (ELMS and vocal emotion) before judging his/her true emotions.

This study concluded that the existence of incongruence is more relevant than the extent of vocal emotion, even when the speaker could not express the emotion through voice completely, noting that the existence of incongruence was enough for Japanese listeners.

The effect of lexical competition on realization of phonetic contrasts: The case of voicing in Japanese

Mafuyu Kitahara[1], Keiichi Tajima[2], & Kiyoko Yoneyama[3]

[1]Sophia University, [2]Hosei Univeristy, [3]Daito Bunka Univeristy

One of the fundamental questions in human speech processing is the degree to which articulatory realization of contrasts interacts with the organization of the mental lexicon. Most notably, the effect of lexical neighborhood has been at issue for the past 30 years or so. A group of similar words with respect to a particular target word is called lexical neighbors. There are various possible measures of similarity but the one frequently used in the psycholinguistics literature is proposed by Greenberg & Jenkins (1964): just one operation of a segment, namely, deletion, addition, and substitution are allowed. It has been repeatedly confirmed that the effect of lexical neighborhood and word frequency matter in the fine details of phonetic output; for example, vowel space expands for words from dense neighborhoods (citeMunson2004, Scarborough2010; voice onset times (VOT) for voiceless stops are longer when there is a minimal pair in voicing (Goldrick, Vaughn & Murphy 2013).

In the current study, we investigate the VOT values of voiced and voiceless stops in the Corpus of Spoken Japanese (CSJ). The studies mentioned above all investigated English, a stress-accent language with dynamic modulation of vowel space together with heavy aspiration or pre-voicing contrast at the onset of a stressed syllable. That is, the fine details of phonetic output are still easy to observe with respect to lexical neighborhood as an independent variable. Moreover, a series of investigations over different age groups and regions within Japan showed that VOT values are under an ongoing change in Japanese: middle-age to younger generations across the country tend to migrate from a heavily prevoiced to short lag VOT for voiced stops (Takada et al. 2013). 2013). This leads to the following question: when the voiced stops are getting less voiced, where does the voiceless one go in order to maintain the contrast?

CSJ is a large scale spontaneous speech corpus that contains recorded speech in various styles from over about 200 speakers (Maekawa 2003). The annotation was done by a team of trained phoneticians. Minimal pairs contrasting in voicing of word initial velar stops and matched non-contrasting words were extracted from the corpus. The existence of minimal pairs was determined by consulting a 80000-word familiarity database (Amano & Tadahisa 1999). The duration of the closure as well as the VOT (from the burst to the onset of the vowel) of voiceless velar stops /k/ were measured. There are 1939 items which has a word-initial voicing contrast in

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the database while there are 4111 items without the contrast. Preliminary results showed that the effect of neighborhood (or minimal pair) is subtle but statistically significant in the VOT (t=-7.217, df=22930, p < 0.0001). Those with contrasting items show about 1.6ms longer VOT value than those without. The closure duration also shows the same trend (t=-11.829, df=22945, p < 0.0001).

An implication of these results is that the effect of lexical neighborhood matters. That is, when a word has a minimal pair counterpart contrasting in voicing, the phonetic detail of the contrast is altered, presumably to emphasize the voicing contrast between the words. This is observed in a non-stress-accent language such as Japanese, in addition to stress-accent languages such as English.

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"Frog, where are you?" Topic continuity, transitivity, and grounding in Indonesian

D. Victoria Rau

Institute of Linguistics, National Chung Cheng University

This study illustrates how Indonesian discourse demonstrates Hopper and Thompson's (1980) transitivity hypothesis and Givón's iconicity in topic continuity (1983). Hopper and Thompson's transitivity hypothesis proposes that semantic transitivity is correlated with grounding. The most transitive sentences, with volitional agent, highly affected individualized patient, affirmative action, and telic verbs, tend to occur in foregrounded discourse (i.e., the backbone of the narrative, generally following the time sequence of the events) whereas the opposite of these features tend to occur in backgrounded discourse (i.e., the detailed or sidetracked description of an event). Givón's topic continuity in discourse proposes that the most continuous / accessible topic is least marked in form while the most discontinuous/inaccessible topic is marked most explicitly in form.

Eight Indonesian renditions of "the frog story" were collected from Indonesian speaking graduate students in Taiwan as examples. The speakers were in their mid- 20s from Java and Sumatra with a balanced representation of gender. After data analysis, two of the narrators were interviewed to provide further cultural insights on different endings of the story. In terms of topic continuity, the results indicate that when a new topic is introduced, a quantifier can be used with the new topic. As the topic becomes continuous, the form becomes less explicitly marked. For example, *seorang anak* 'one-person child' > *dia* 'he' > *-nya* 'his' ; *seekor*

katak 'one-tail frog' > *katak itu* 'that frog' > *dia* 'he'; *sebuah tabung* 'one-fruit tube' > *tabung* 'tube.'

In terms of the correlation between semantic transitivity and grounding, our results show that foregrounded discourse is marked with time expressions, connectors, and auxiliaries to connect the time line of the story. The backgrounded discourse constitutes dialogues, monologues, and sound effects. In addition, active voice and meN- verbs expressing "see", "call", "climb", and "fall" are correlated with the backbone of the story in the orientation section whereas passive voice and di- verbs tend to occur more frequently in the complicating actions to maintain topic continuity and provide background information and details.

Insubordinated conditional clauses in spoken Chinese: A functional typological analysis

Chun-Hsien Chiang[1] and Kaoru Horie[2]
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Subordinate clauses from which their accompanying main clauses are elided are called 'insubordinated clauses' (Evans 2007). Insubordinated conditional clauses (henceforth: insubordinated if-clauses) are commonly observed cross-linguistically, frequently conventionalized as expressions of request and suggestion (e.g. *If you could give me a couple of 39c stamps please*., Evans 2007: 380). This paper discusses insubordinated if-clauses in spoken Chinese (*dehua* (的話, conditional marker)-clauses) and Japanese (*ba/tara* (ば／たら)-clauses) from a functional typological perspective. Data are drawn from the NCCU Corpus of Spoken Chinese (NCSC) and the TalkBank system.

The Japanese insubordinated ba/tara-clause (henceforth: ICs-ba/tara) "commonly trigger a deontic inference (speech-act-oriented)" (Narrog 2016: 248), such as indicating a request (i.e. Ne, modotte kure-ba? (How about coming back? [deontic inference: you should come back.], Shirakawa 2009: 84). Furthermore, the speaker could convey his attitude (his fear/anxiety) to the proposition using ICs-*ba/tara* in monologue style (i.e. *Koitu ni heya de nagai demo sare-tara⋯* (こいつに部屋で長居でもされたら⋯(If he were to stay here long time, [it would be bothersome to me]), Shirakawa 2009: 72).

In our Spoken Chinese data, sufficient tokens of insubordinate *dehua*-clauses (henceforth: ICs-*dehua*) were attested. Crucially, they were observed to have a radically different interpretation compared to their Japanese and English counterparts. Concretely speaking, ICs-*dehua* arguably express a 'procedural meaning,' which guides the hearer to infer the negative implication of the elided main clause based on the preceding discourse context. For example, the negative implication associated with ICs-*dehua* is derived from F2's prior comment to the colleague. Speaker F2 is talking about her colleague who once asked his company to pay for his unexcused absence. (e.g. F2: *dui a, xiang shui ta wei shi me hui zuo zhe me bu yao lian de shi ne?* (對啊，想説他為什麼會做這麼不要臉的事呢?; yap, I wonder why he did such a shameless thing？) F1: *ta xiangyao shishikan a (..) ta ruguo shi chenggong dehua.* (他想要試試看啊 (..) 他如果試成功的話。; He wanted to try. ⋯If he did it successfully. [Implication: the things would turn worse]) Also, unlike its Japanese counterpart, we found that ICs-dehua cannot convey the speaker's attitude (negative or positive evaluation) by itself (e.g. *Koitu ni heya de nagai demo sare-tara⋯* / ??? *zhe xiang huo*

dai zhe me jiu dehua⋯ (??? 這傢伙待這麼久的話⋯)). The expression of speaker F1's negative evaluation, if any, needs to be inferred from the whole discourse context. This suggests that unlike Japanese and English counterparts, the Chinese ICs-*dehua* have not yet fully conventionalized deontic speech act functions such as request and suggestion.

This suggests that insubordinated if-clauses in Chinese take on a discursive function (or procedural meaning) very different from their Japanese and English counterparts. The current study thus contributes an interesting case study to the functional typological research on insubordination.

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Putting or removing? Wipe verbs in Saisiyat, Taiwanese Southern Min and Mandarin

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National Tsing Hua University

As remarked in Malt & Majid (2013), cross-linguistic similarities and differences in word meanings may shed light to the relationship between language, thought and culture; Majid et al. (2007), Majid, Boster & Bowerman (2008) are studies on verbal semantics of cutting and breaking events. This study aims to provide a cross-linguistic study on wipe verbs in Saisiyat, a Formosan language and two Chinese dialects – Taiwanese Southern (TSM) and Mandarin Chinese. According to Levin (2006), *wipe* belongs to the verbs of locative alternation, which contains two subtypes – putting (e.g. *spray*) and removing (e.g. *wipe*). Relationship between these two types of verbs is attested when we compare the wipe verbs in Saisiyat, Mandarin and TSM. In Mandarin, *tsha* exhibits the behaviors of the putting type and of the removing type in that when the theme or locatum surfaces as the object, either an removal meaning, as in *tsha han* 'wipe the sweat off' or an adding meaning, as in *tsha fen* 'apply face powder' can be designated depending on the meaning of the theme NP. In TSM, putting and removal meanings resort to different lexical items – *tshit* for removing and *buah* for adding (compare *tshit kuaN* 'wipe the sweat off' with *buah hun* 'apply face powder'). For Saisiyat, the relationship is spelled out morphologically as in the word pair *ti:iS* and *pa-ti:iS* where the root form ti:iS denotes removal meaning 'wipe off' and can only have the location realized as the object, and the theme or locatum argument can surface as the object only after the addition of the causative morpheme *pa-*; along with the change in argument alternation comes the change in direction from removing to putting, as illustrated in (1). The difference between putting and removing is basically one in the direction of motion triggered by different theme NP. If the theme refers to bodily fluid such as sweat, tear or saliva, an off reading is rendered; when the theme noun refers to something like face powder, sun scream, body care products, or oil and paint that can be applied to a surface, an onto meaning is obtained. The Saisiyat data seems to argue for the proposal that argument realization is determined by causal chain between arguments (Croft 2012). Whether the difference in categorization in

the three languages can be accounted for by the concept of motion and causation (Pinker 1989: 128) will be investigated in this paper.

(1)   Saisiyat

a. *ti:iS   ka   talka: (locative object)*
wipe Acc table

   'Wipe the table!'

b. *korkoring 'am   pati:iS   ka   ngisi'   kanman ray kayba:en… (locative*
child   want Cau-wipe Acc booger 1S.Loc   Loc clothes
   PP)

   'The child wants to rub booger onto my clothes…'

Majid, Asifa, James S. Boster & Melissa Bowerman. 2008. The cross-linguistic categorization of everyday events: A study of cutting and breaking. *Cognition* 109(2). 235–250.

Majid, Asifa, Melissa Bowerman, Miriam van Staden & James S Boster. 2007. The semantic categories of cutting and breaking events: A crosslinguistic perspective. *Cognitive Linguistics* 18(2). `https://doi.org/10.1515/COG.2007.005`.

Malt, Barbara C. & Asifa Majid. 2013. How thought is mapped into words: How thought is mapped into words. *Wiley Interdisciplinary Reviews: Cognitive Science* 4(6). 583–597. `https://doi.org/10.1002/wcs.1251`.

Perfective aspect in the languages of Madang Province, Papua New Guinea

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This study tries to clarify the functions of aspect forms in the area of Madang Province, Papua New Guinea; particularly, focusing on the perfective aspect forms in the sample four languages; Amele, Bel, Kobon, and Manam. Amele and Kobon are a Trans-New Guinea language, and Bel and Manam are Austronesian genera. Generally, Austronesian languages tend to have aspect features, whereas Trans-New Guinea languages lack them instead of rich tense system. This study discusses the perfective behaviors of them in a contrastive viewpoint.

I collected the data through the descriptive grammars and the fieldwork, and found that there are two kinds of aspect marking; with morphology and without morphology. Morphologically, perfective aspect forms were incorporated into person and number of the verbs, as in (2).

(2)   with aspect morphology

a.   Bel: Am agod-**lak**. (realis marker) "We have asked for" (Dempwolff sd:11)

b.   Bel: Nga book get mushuti-**gbini**. (past) "I have already read a book/ I read book"

c.   Manam: U-moanaʔ-**dói**.(completive suffix) "I have eaten "(Lichtenberk 1983:202)

d.   Kobon: Um-**öb**. (recent past) "He has died" (Davies 1989:168)

(3) Without aspect morphology

> a. Amele: Uqa **wele** (already) nui-**a** (today's past). "He has already gone" (Roberts 1987:232)

Austronesian languages (Bel and Manam) are poor in tense forms, but they have aspect morphology in verbs. However, Kobon has morphological perfective markers, but their usages are related to the recent past form. In (2b), Amele is lacking aspect marker and it utilized temporal adverb "wele" (already) and today's past form. Therefore, this study found that each language partly has formal means indicating perfective and Trans-New Guinea languages utilize past tense forms, and Austronesian languages have bound morphology of tense-aspect-mood. Thus, perfective aspect is not common feature of the area, and perfective meaning turns out to be realized differently.

Finally, this study claims the perfective aspect markers in all languages are more or less related to simple (or near) past tense, and this fact means that the languages of the area do not clearly distinguish past tense and perfective aspect meanings.

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Dempwolff, Otto. sd. *The grammar of Graged language*. Lutheran Mission Narer.
Lichtenberk, Frantisek. 1983. *A grammar of Manam* (Oceanic Linguistics Special Publications). Hawai'i: Univ. of Hawaii Press.
Roberts, John R. 1987. *Amele*. Croom Helm.

The handwriting of Chinese characters: A psycholinguistic database

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Unlike lexical access in spoken language, relatively little is known about how orthographic codes of a word are accessed in handwriting. Experimental findings often come to different conclusions about the cognitive processes underlying handwriting, for instance, regarding whether phonology is used to access orthographic codes (Zhang & Wang 2015, Qu et al. 2011). Such disparity is likely due to the use of small samples of hand-picked words which may have uncontrolled confounds. In handwriting research, there have been few large-scale databases that can elucidate on the empirical debates or serve as a tool for stimulus selection for lab-based studies, though such databases have become abundant in oral language production (e.g., picture naming). Here we report a large-scale psycholinguistic database of Chinese character handwriting.

A total of 203 university students handwrote 200 target characters randomly selected from a cohort of 1600 characters. They heard a phrase containing a target character (*la jiao de la*, meaning "*la* as in *la jiao*") and handwrote the target character on a graphic tablet. We recorded 1) the time between the offset of the target spoken character and the onset of the handwriting (latency), 2) the time of writing the character (duration), and 3) accuracy. We also compiled the following character-level characteristics for each chara*cter: 1) character frequency, 2)* stroke number, 3) *radical number*, 4) *homophone density*, 5) *phonogram status rating*, 6) *orthographic regularity rating*, 7) *sound radical writing order*, 8) *radical composition* and 9) *age of acquisition (AoA).*

All these characteristics were entered simultaneously in regressions of the writing latency, duration, and accuracy. As expected, we found that 1) more frequent characters have a shorter writing latency (i.e. less time needed for accessing orthographic codes), a shorter writing duration, and higher accuracy; and 2) characters with more strokes have a longer writing latency, a longer writing duration, and lower accuracy. More interestingly, we found an effect of homophone density and orthographic regularity such that 1) characters with more homophonous character neighbours need more time for accessing orthographic codes (i.e. a longer latency) and are less often correctly written, and 2) characters with more phonology-orthographic regularity require less time in accessing orthographic codes (latency) and are more often correctly written. These two findings clearly suggest a role of phonology in orthographic access. We also found AoA effects, with an advantage for early-acquired characters in writing latency, duration and accuracy. Finally, characters with typical radical composition (left-right or top-down) require less time in orthographic access than characters with less typical radical compositions. None of the other lexical variables seem to have an effect on handwriting. In terms of importance, both writing latency and accuracy can be largely explained by character frequency and AoA, while writing duration by stroke number.

These results clearly support the phonology-mediation account of handwriting (i.e. phonology is used for accessing orthographic codes) (Zhang & Wang 2015, Luria 1970). Also whether a character is dictionary-defined as a phonogram or not does not seem to impact handwriting while orthographic regularity as rated by participants does; this finding highlights the importance of consulting large-scale database instead of dictionaries in designing handwriting stimuli for lab-based studies. The database will be a tool for the investigation of handwriting. In particular, it can be used to study, among other things, factors that determine handwriting difficulty and access of orthographic codes in handwriting.

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Predictors of Chinese Character Reading: Evidence from Proficient L2 Learners

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The study of Chinese characters is the core and difficulty of Chinese learning for foreign students. The purpose of the present study is to explore the relative importance of factors affecting Chinese character naming, so as to provide some reference for the teaching arrangement of Chinese characters for foreign students. The second aim of the study is to investigate commonalities and differences between character reading among the native speakers and second language learners.

Thirty-five foreign students were asked to read aloud 1,200 commonly used Chinese single-character words presented in the computer screen. The characters were selected from the database of Liu, Shu & Li (2007). Multiple regression analyses were used to explore the importance of variables that affect L2 word reading speed and accuracy, with the predicting variables including word frequency, phonetic-regularity, semantic concreteness, number of word formations (NWF), and two visual features - number of strokes (NS) and number of components (NC). These data suggested that word frequency was the most important factor for proficient foreign language learners. Similar to Chinese native speakers, semantic concreteness and phonetic-regularity also had significant influence on Chinese L2 word reading, but the visual feature variables didn't have significant role. In a word, the variables that predict the processing of Chinese characters are basically similar in the two groups, mainly the frequency of Chinese characters, phonetic-regularity and the semantic concreteness; the difference is mainly manifested in the different size of these variables, and the frequency effect of the language learners is stronger than that of the native speakers. The application for Chinese L2 teaching and learning was discussed briefly.

Productive knowledge of formal regularities in Chinese characters

James Myers[1] and Tsung-Ying Chen[2]

[1]National Chung Cheng University, [2]National Tsing Hua University

Knowledge of Chinese character structure is productive, going beyond rote memorization of existing constituent combinations (Myers 2016). In this study we report three experiments demonstrating that readers also know context-dependent regularities in constituent form.

The character constituents called semantic radicals (部首) have a strong tendency to appear on the left rather than the right and a lesser tendency to appear on the top rather than the bottom. Left-edge and top-edge semantic radicals also tend to be thinner than the rest of the character. Moreover, constituents on the left undergo regular stroke changes, whether they are semantic radicals (土～地、木～村) or not (且～助、禾～和). To find out if readers productively generalize these patterns, we created 32 quartets of non-lexical traditional characters by crossing three factors: semantic radical status, character structure (horizontal vs. vertical), and thin constituent position (left/top vs. right/bottom); in 38 of the 64 horizontal characters the thin constituent also showed a regular stroke change. The 128 test items were divided into four Latin square groups of 32 items each, with each item primed by figures highlighting the constituent dimensions. 98 traditional Chinese character readers were asked to judge if the target items were like or unlike Chinese characters, with choices and reaction times modeled in terms of the above factors, along with positional constituent frequency.

The analyses showed a significant preference for thin constituents to be on the left rather than on the right, even when they were not semantic radicals. However, there was no significant preference for top-edge over bottom-edge thin constituents, which may be due to the smaller distributional contrast along the vertical axis. The left-edge preference was stronger when regular stroke changes were present, but it was statistically significant even for constituents not subject to such changes, even in those that were not semantic radicals.

Individual strokes also show context-dependent regularities (Wang 1983). They virtually always lengthen on the bottom and right (井) and curve on the left (片、爿), with exceptions to the curving generalization more common in wider constituents (冊 vs. 月). There is also a greater tendency for a vertical stroke to end in a leftward-pointing hook if it is in an asymmetrical stroke group (才、事) and/or topped by another stroke (丁、了). To test the productivity of these generalizations, we ran a pair of experiments in which traditional character readers (77 and 80, respectively) were presented with non-lexical stroke groups (respectively 24 and 320, the latter in four Latin square groups) composed of vertical or horizontal strokes including one that was plain, lengthened, curved, or hooked. Participants were asked to rate each stroke group for its character-like "feeling" on a seven-point scale. The results showed significant preferences for lengthened strokes to be on the bottom or right, for curved strokes to be on the left, and for hooked strokes to be on the right and topped with another stroke, consistent with the patterns in real character constituents.

Our experiments suggest that Chinese readers know much more about character form than has hitherto been tested, even for patterns that do not involve decomposing characters into constituents, let alone interpreting them for meaning or pronunciation. They thus support proposals made by Wang (1983), Myers (2016), and others that there is a psychologically real formal grammar of Chinese characters, similar to the morphology and phonology of spoken and signed languages.

Myers, James. 2016. Knowing Chinese character grammar. *Cognition* 147. 127–132. `https://doi.org/10.1016/j.cognition.2015.11.012`.

Wang, Jason Chia-Sheng. 1983. *Toward a generative grammar of Chinese character structure and stroke order*. Madison: Univ. of Wisconsin.

Chinese Basic Character Recognition Test: A word recognition test for young Taiwanese readers

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[1]Department of Early Childhood Education, University of Taipei, [2]Department of Psychology, National Taiwan University, [3]Department of Human Development and Family Studies, National Taiwan Normal University

In this study, we designed the Chinese Basic Character Recognition Test (CBCRT) to evaluate the word recognition ability of young Taiwanese children, especially kindergartners and preschoolers. Previous word recognition tests in Taiwan were mainly designed for elementary school and junior high school students. These tests were difficult for kindergartners and preschoolers because these tests required participants to read aloud printed characters or use characters to make compound words. Thus, the test scores could not distinguish the word recognition ability of these young readers well. In order to make a more sensitive test for these young readers, we designed a 72-item test using the format similar to Peabody Picture Vocabulary Test (PPVT). In each item, four printed characters were visually presented, and participants were asked to point out the characters which were read aloud by the examiner. Stimuli were chosen from the high-frequency characters that were familiar to young Taiwanese children.

In order to evaluate the validity of the new test, 341 children aged from 3-6 years old were tested on CBCRT, PPVT, and Basic 200 Character Recognition Test

(BCRT, a traditional word recognition test which asked participants to read aloud two hundred high frequency characters). The result showed that the raw scores of CBCRT had high correlation with BCRT (r=.90**) and medium correlation with PPVT (r=.54**). In order to evaluate the reliability of the new test, 40 children were tested on CBCRT when they were preschoolers and then re-tested a year later when they were kindergartners. The results showed that the test-retest reliability was .70**, and the split-half reliability was .99**. The findings suggest that CBCRT is sensitive to examine the word recognition ability of kindergartners and preschoolers.

Session II

19 Oct
II-1
13:00
N106

Neural correlates of within- and between-category processing of Chinese classifiers

Chu-Hsuan Kuo[1], Min Liu[1], Hsuan-Chih Chen[2] and Tai-Li Chou[1]

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Chinese classifiers have varying degrees of overlapping semantic features with their corresponding nouns. The present fMRI study aimed to clarify the neural correlates of processing erroneous count versus mass classifier use during reading comprehension. Twenty-nine native Chinese speakers made semantic congruency judgments on congruent, intra-classifier (IA) violated, and inter-classifier (IE) violated phrases. The IA and IE violations involved changing a correct classifier to an incorrect classifier of the same category (e.g. count-count or mass-mass) and of a different category (e.g. count-mass or mass-count), respectively. Functional connectivity as revealed by psychophysiological interactions analysis revealed whether there would be condition-specific connectivity between brain regions. The IE violation condition produced more activation in the bilateral inferior frontal gyri (IFG) when contrasted with the IA violation condition, suggesting that dealing with between-category classifier errors may result in increased demand on semantic processing. The bilateral IFG were functionally connected to the medial frontal gyrus, suggesting some inhibition of irrelevant semantic features. The right IFG was also functionally connected to the left middle temporal gyrus, suggesting need for lexical retrieval and selection of semantic features. Overall, these results suggest that multiple brain regions are part of a larger semantic network involved in the processing of Chinese classifiers.

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19 Oct
II-1
13:20
N106

The neural substrates for predictive processes in sentence comprehension

Chih-Ting Chang[1], Ping Li[2, 5], Jie-Li Tsai[3], En-Ju Lin[4], Pei-Chun Chao[1], Chia-Ju Chou[1], Chia-Ying Lee[3, 4, 6]

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[2] Department of Psychology, Pennsylvania State University
[3] Department of Psychology, National Chengchi University
[4] Institute of Linguistics, Academia Sinica
[5] Center for Brain, Behavior, and Cognition, Pennsylvania State University
[6] Institute of Cognitive Neuroscience, National Central University

This study aimed to investigate the neural substrates of the predictive processes in sentence comprehension. Twenty-seven university students (9 males, mean age 21.96 years; range 19-27) served as participants in an fMRI study. Participants read a set of leading sentences for comprehension and had to predict the upcoming ending that should complete the sentence best within 4 seconds (2 TRs). The leading sentences provide either high (HP) or low predicative (LP) contextual information. The ending words, half of which were rated as the HP completions (predictability: 4.52, SD = 0.30) and half of which were rated as the LP completions (predictability: 1.85, SD = 0.51) in a separate norming study, would appear, and participants

were required to decide whether the presented word was the same as participants' prediction. The fMRI data revealed that, LP sentences led to greater activations in left inferior frontal gyrus (IFG), middle temporal gyrus (MTG), angular gyrus (AG), and posterior cingulate indicating that the LP sentences posted greater cognitive demand on the reader. By contrast, HP sentences led to greater activations in bilateral inferior parietal lobule (IPL) which is related to generate representations based on the contextual information and in inferior temporal gyrus (ITG) which is involving in orthographic processing. These results specifically suggested that readers might have predicted particular lexical representations for the upcoming endings. Furthermore, at the word level, the LP endings, as compared with the HP endings, showed greater activations in bilateral IFG, left STG, MTG, AG, and SFG. Together, these data revealed the neural substrates of predictive processes in sentence comprehension.

One construal mechanism of underspecified meaning during sentential meaning composition

Yao-Ying Lai and Maria Mercedes Piñango

Yale University

We investigate the construal of underspecified meaning in sentences like (1) "*Patricia sneezed for 10 minutes.*" The composition of a punctual verb and a durative for-adverbial gives rise to an iterative interpretation such as "*Patricia sneezed iteratively for 10 minutes.*" Here the iterative meaning is underspecified: it is morpho-syntactically unsupported yet must be construed. Previous studies have shown that sentences like (1) engender additional processing cost and specific brain activity, as compared to the transparent counterparts such as (2) "*Patricia cycled for 10 minutes.*" We contrast two hypotheses: ITER-insertion vs. Partition Measure.

Hypotheses. Under the **ITER-insertion hypothesis**, combining a punctual verb with a durative adverbial as in (1) constitutes an aspectual mismatch, which triggers repair by an ITER-operator, giving rise to iterative meaning. Processing cost results from the insertion of the ITER-operator. Alternatively, under the **Partition-Measure (PM) hypothesis** there is no mismatch. Instead, *for*-adverbials demand a *partition measure* to quantify over the sub-intervals of the interval they denote (e.g., 10 minutes) and determine the length of the sub-intervals. An infinitesimal partition measure (with no gap between the sub-intervals) of the interval yields a continuous reading, whereas a non-infinitesimal partition measure yields an iterative reading. Processing cost results from the conceptual/contextual *search* for an appropriate partition measure for the sub-intervals of the *for*-adverbial interval. Crucially, under PM, but not under ITER-insertion, the iterative meaning results from either a durative or punctual predicate in composition with a *for*-adverbial. We test the resulting predictions with the following 3 conditions via a self-paced reading and an fMRI-comprehension task.

Condition	Sample sentence
No_Iteration	*Patricia cycled for 10 minutes in the freezing gym.*
Punctual_Iteration	---------- *sneezed for 10 minutes* -----------------------
Durative_Iteration	---------- *cycled for 1 month* -----------------------

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Predictions. The **ITER-insertion hypothesis** predicts that only Punctual_Iteration will be costly due to the aspectual mismatch (punctual verb durative adverbial). The **PM hypothesis** predicts that both Punctual_Iteration *and* Durative_Iteration will be costly (> No_Iteration) because both involve a conceptual/contextual retrieval of a non-infinitesimal partition measure in order to build the iterative interpretation.

Study 1. The self-paced reading experiment (N=24) revealed Punctual_Iteration = Durative_Iteration > No_Iteration in RTs at the NP window following "for" (p< .05).

Study 2. The fMRI experiment (N=16) showed (i) both Punctual_Iteration and Durative_Iteration induced stronger deactivation in the default network (vmPFC & right AG) than No_Iteration, reflecting the shared attention shift required to retrieve the partition measure from context. (ii) Punctual_Iteration (>No_Iteration), demanding local context resolution via lexical-concept mining, preferentially recruited Wernicke's area, while (iii) Durative_Iteration (>No_Iteration), demanding resolution via broader discourse context, preferentially recruited LIFG.

Taken together, results **are consistent with the PM hypothesis**, which captures the unifying linguistic behavior of both Punctual_Iteration and Durative_Iteration as well as their overlapping processing profiles. This suggests conceptual search as a unifying neurocognitive mechanism for underspecification resolution that connects the lexical representation with its local and broader conceptual context to arrive at a felicitous interpretation without the need of extra-sentential single-purpose operators.

Unconscious semantic priming reflected by Gamma- and theta-band synchronization: an MEG study

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[3]Japan Meiji University

Previous studies found that an unrecognizable word due to visual crowding (a phenomenon that conscious identification of a peripheral object is severely impaired by surrounding flanker) still generated semantic priming effect to the subsequent target. Semantic information is processed in temporal and frontal brain regions, especially the middle temporal gyrus (MTG) that is related to semantic representation and inferior frontal gyrus (IFG) to semantic access in lexical-semantic network. However, the dynamics of these regions during unconscious semantic priming remains unclear. We investigated cross-frequency phase-phase coupling (PPC) between theta (4-7 Hz), alpha (8-12 Hz) and gamma (30-60 Hz) oscillations with magnetoencephalography (MEG) as these frequencies related to lexical-semantic networks. By presenting an isolated or a crowded prime word, the subsequent target word was either semantically related or unrelated to the prime. We chose bilateral MTG and IFG as region of interests (ROIs) and compared the PPC values in conditions with different ROIs Í frequency-bands combinations. We observed increased PPC values between right MTG theta-band activity and left IFG gamma-band activity for related compared to unrelated conditions over the time windows

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400-850 ms after target onset. This result was consistently observed for both isolated and crowded primes. However, there was no significant group difference in alpha-theta and theta-theta phase-coupling with the same right MTG Í left IFG ROI combination. These results suggest that there exists a cross-hemisphere interaction when processing semantic information even when the prime was unrecognizable, and this cross-hemisphere interaction is specific to theta-gamma coupling.

Morphosyntactic processing in Mandarin-speaking children with specific language impairment

Huei-Mei Liu and Li-Chun Kuo

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19 Oct
II-2
13:00
South
Basement A

The difficulties in processing and using grammatical morphology have been found in children with specific language impairment (SLI) who experience significant difficulties, in many aspects of language ability, in the absence of obvious neurological problems (Leonard 1998). Previous studies of English-speaking children with SLI have shown problems when using tense and aspect systems. Research indicates that performance of morphological and syntactic abilities in these children is far behind their counterparts in relation to their own language and reading abilities. The majority of studies focusing on morphosyntactic deficits come from SLI groups whose native languages use inflectional morphemes for grammatical purposes. However, from a cross-linguistic perspective, children acquiring Mandarin Chinese, a language with a sparse morphological system, may demonstrate different language profiles of morphosyntactic processing. Chinese morphology represents various functional morphemes (or words) to convey aspectual meanings, classifiers to express notions of quantity, and compound words formed by combining two or three morphemes, all of which differ from alphabetic languages. These distinctive features present an opportunity to investigate the deficits of morphosyntactic processing in Mandarin-speaking children with SLI and their relationships with language comprehension, language expression, word recognition, and reading comprehension. Determining whether different aspects of morphosyntactic processing serve as an indicator of language ability, at the later stages of learning development, is also worthy of investigation. The results will be important in adding to, improving and modifying our understandings of the theoretical framework of SLI.

This research was a one-year longitudinal study involving 45 second graders, including 23 subjects with typical development (TD) and 22 with SLI. All participants were assessed during their second and third grade by standardized language tests and self-developed morphosyntactic measurements. To be included, all participants had to perform higher than 80 on a nonverbal IQ test (WISC-IV). The SLI group scored 1 SD below the mean on two standardized language tests. None of them had any neurological disorders or significant sensory impairments. With regards to the morphosyntactic measurements, six tasks conducted to examine different aspects of morphosyntactic processing were developed, consisting of the comprehension and production tasks of classifiers, homophones and compound words, and aspect markers. Repeated measure ANOVAs and correlation and regression analysis were used to obtain the results of the overall performance of the groups of SLI and their

counterparts, the effects of age on their morphosyntactic abilities, and the relationship between the measures of morphosyntactic and language-related abilities.

The results indicate that the SLI group scored significantly lower than the TD group on classifier comprehension ($[F(1, 37) = 8.445, p < .01, \eta^2 = .186]$) and production ($[F(1, 37) = 15.890, p < .001, \eta^2 = .300]$), aspect marker comprehension ($[F(1, 38) = 24.815, p < .001, \eta^2 = .395]$) and production ($[F(1, 36) = 9.244, p < .01, \eta^2 = .204]$), homophone comprehension ($[F(1, 35) = 21.972, p < .001, \eta^2 = .386]$) and compound construction ($[F(1, 35) = 18.722, p < .001, \eta^2 = .348]$). Furthermore, the main effect of age was found to be significant for most of the morphosyntactic measures (all $p_s < .01$), except for homophone comprehension, showing the growth of the morphosyntactic abilities of the participants were significantly developed during third grade. As for the results of the correlation analysis, the findings demonstrate that most of the morphosyntactic abilities were significantly correlated with their language comprehension and expression, word recognition, and reading comprehension. The stepwise regression analysis revealed that the abilities of classifier and compound production could consistently predict most of the measured language abilities including language comprehension and expression, word recognition, and reading comprehension. In conclusion, Mandarin-speaking children suffering from SLI show a morphosyntactic processing that is inferior to their age- matched peers, which is argued to be particularly important in the development of language and reading abilities during school ages.

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19 Oct
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Basement A

A study of how young children with high functioning autism spectrum disorder process fictive motion sentences

Shu-Ping Gong and Yi-Wen Tseng

National Chiayi University

Fictive motion, one kind of figurative language, expresses the metaphorical movement of an object through space (Talmy, 1996, 2000). For example, in the sentence "the highway runs through the city", the object "the highway" cannot conduct the action of "run" but this sentence is semantically acceptable, describing the state of the object in space, instead of actual movement in physical space. When people process this kind of sentences, the use of the motion verb "run" may allow them to mentally simulate the motion even though the meanings do not involve actual movement. The subtle meanings involving in fictive motion may be a language comprehension problem for patients with autism, which often have difficulty in understanding figurative language. Accordingly, we would like to know whether patients with high functioning autism also mentally simulate the movement in processing fictive motion sentences.

We tested two groups of participants: one was the children with high-functioning autism from first grade to sixth grade in the elementary schools, and the other was the typically developing children with the same grades as the autistic children. They were instructed to read sentences in Mandarin Chinese and to draw pictures for expressing each sentence. Twelve sentences in Mandarin Chinese were selected, including six fictive motion sentences (e.g., *méi-jūn pá-shàng qiáng-jiǎo* "Mold climbs up the corner") and six non-fictive motion ones (e.g., *méi-jūn zài qiáng-jiǎo* "Mold is in the corner").

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In the beginning, the Peabody Picture Vocabulary Test-Revised (PPVT-R) was conducted as the pre-test to acquire their current language ability among the twelve children. After the PPVT-R, the participants were asked to do painting tests twice within one month. After the drawing task, three judges that did not join the drawing task evaluated these pictures and decided whether or not the object in each drawing was of the sense of lengthening. The experimental results show that autistic children did not lengthen the objects (e.g., *méi-jūn* "mold") in the fictive motion sentences more often than the ones in the non-fictive motion ones, suggesting that children with autism interpreted the meanings of fictive motion sentences as the same as the non-fictive ones. On the other hand, typically developing children lengthened the objects in the fictive motion sentences more frequently than the non-fictive motion ones. The findings demonstrate that the typically normal children, different from the autistic children, mentally simulate the movement of objects because of the use of fictive motion in sentences, which allow people to make the trajectories of the objects become lengthening as compared to the non-fictive motion.

This research helps us to understand the comprehension problem among children with high-functioning autism in processing figurative language. Finally, this study has practical implications for the teachers in the special education in designing more appropriate material and methods for children with autism disorder.

Luria, Alexander R. 1970. *Tramatic aphasia: Its syndromes, psychology and treatment*. The Hague: Mouton de Gruyter.

Qu, Qingqing, Markus F. Damian, Qingfang Zhang & Xuebing Zhu. 2011. Phonology Contributes to Writing: Evidence From Written Word Production in a Nonalphabetic Script. *Psychological Science* 22(9). 1107–1112. https://doi.org/10.1177/0956797611417001.

Zhang, Qingfang & Cheng Wang. 2015. Phonology is not accessed earlier than orthography in Chinese written production: evidence for the orthography autonomy hypothesis. *Frontiers in Psychology* 6. https://doi.org/10.3389/fpsyg.2015.00448.

Language performance and short-term memory span in Mandarin-speaking preschoolers with bilateral hearing impairment: A comparison between two approaches to memory span measurement

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In language processes, short-term memory span plays a critical role of retaining the linguistic information available for phonological, semantic and syntactic processing. The memory span is typically measured by a digit span task in which an examinee repeats spoken digits (e.g., digit span subtests of the WISC-IV). However, processing of language stimuli is more than rehearsal of auditory inputs. It also involves further transformation and manipulation of the mental representation of the inputs. Moreover, for children with hearing impairment, performance on the traditional digit span task could be influenced not only by the children's memory ability, but also by the children's speech ability (e.g. speech intelligibility and communication mode preference). If the traditional task is used to measure the memory span of children with hearing impairment, the relationship between

language processes and the memory span is likely overlooked or underestimated for the children.

A new digit span task, called iRecogD, was implemented as an iPad application in which verbal responses were not required. An examinee pointed out digits by selecting Arabic numerals from a 3-by-3 grid on a touchscreen. To verify the validity of iRecogD, a group of 30 preschoolers with normal hearing (NH) and a group of 33 preschoolers with bilateral hearing loss (HL) were invited to complete iRecogD and two subtests of the WISC-IV, the verbal digit span and the non-verbal matrix reasoning. Moreover, the participants in HL group wore hearing aids and aimed to develop verbal language skills, and therefore the revised version of the Language Disorder Assessment for Preschooler (LDAP-R) was administered to the participants.

The two groups of children were similar in chronological age ($t = 0.32$, $p = .75$) and in their scores of the matrix reasoning subtest ($t = -0.58$, $p = .57$). In both groups of children, the estimated memory span in iRecogD correlated with that in the WISC-IV forward digit span (NH: $r = 0.64$, $p < .001$; HI: $r = 0.41$, $p < .05$). The analysis of the estimated memory span in the WISC-IV forward digit span showed that the NH group had greater memory span than did the HI group ($t = 2.44$, $p < .05$). However, the analysis of the data in iRecogD showed that the HI group performed as good as the NH group ($t = 1.47$, $p = .15$). On the other hand, analyses of the correlation between the scores of the LDAP-R and the two measures of memory span showed the followings: (1) the iRecogD memory span correlated with the scores of the comprehension subtest of LDAP-R ($r = 0.35$, $p < .05$); (2) the WISC-IV forward digit span correlated with the overall scores of the LDAP-R test ($r = 0.35$, $p < .05$).

The above results indicate that iRecogD is a viable alternative to measure the short-term memory span of preschoolers. Meanwhile, data accumulation is still ongoing for the purpose of quantifying the relationship between language processes and memory span in preschoolers with hearing impairment.

Meta-linguistic awareness skills in Chinese-speaking children with hyperlexia

Lirong Luo, Yin-Ting Tai, I-Fan Su
The University of Hong Kong

Phonological, morphological and orthographical awareness skills are strong predictors of reading and comprehension ability (e.g. Tong, Tong & McBride 2017, Tong et al. 2009). In the case of children with hyperlexia, who show superior word reading ability and impaired comprehension ability, it is unclear how they perform in these three skills given the discrepancy between reading and comprehension abilities. A few studies have looked at phonological awareness and orthographical awareness skills in hyperlexic children speaking alphabetic languages suggest that although children with hyperlexia achieve better reading ability, their phonological and orthographical awareness skills are lower than their reading ability or the typical-developing control group (Cardoso-Martins & da Silva 2010, Sparks 2001). However, Chinese as a logographic language, has no reliable GPC rule to apply to, pervasive homophony, and Chinese characters can be compounded to form new words, it's possible that successful reading of Chinese characters relies more

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on orthographical and morphological awareness skills and less on phonological awareness skills compared with alphabetic languages.

In the current study, A Cantonese-speaking ASD child with hyperlexia (TYH) was identified according to his score on standardized tests, with word reading scored 2 SD higher than kids form the same grade and comprehension scored 3 SD lower than kids of his age. Three tasks were administered to TYH, 17 typical developing children matched for chronological age (CA group) and 17 children matched for mental age (MA group). In the phonological awareness task, children were asked to produce sound when a phoneme or a syllable is deleted. In the morphological awareness tasks, children were asked to produce words according to instructions, and in the orthographical awareness task, children were asked to judge whether the given real characters, pseudo-characters or non-characters are a real or fake character. The results shows that no difference were found in phonological and morphological awareness tasks, while TYH scored significantly higher in orthographical awareness task than both the CA and MA control groups, and further analysis of the orthographic awareness task found that TYH performs better in real characters than the two control groups but not in the pseudo and noncharacters. The finding suggests that in Chinese hyperlexics, there is no salient advantage in phonological and morphological awareness skills compared with CA and MA controls. Also, Chinese hyperlexics does not show better knowledge of orthographical rules of Chinese characters although they have better orthographical knowledge that help them identify characters that they have encountered.

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Sparks, Richard L. 2001. Phonemic awareness and reading skill in hyperlexic children: A longitudinal study. *Reading and Writing* 14. 333–360.
Tong, Xiuhong, Xiuli Tong & Catherine McBride. 2017. Unpacking the relation between morphological awareness and Chinese word reading: Levels of morphological awareness and vocabulary. *Contemporary Educational Psychology* 48. 167–178. https://doi.org/10.1016/j.cedpsych.2016.07.003.
Tong, Xiuli, Catherine McBride-Chang, Hua Shu & Anita M-Y. Wong. 2009. Morphological Awareness, Orthographic Knowledge, and Spelling Errors: Keys to Understanding Early Chinese Literacy Acquisition. *Scientific Studies of Reading* 13(5). 426–452. https://doi.org/10.1080/10888430903162910.

Spatial conceptualization of sequence time in language and gesture

Kawai Chui

National Chengchi University

ABSThe study investigates the consistency and divergence between language and gesture in the expression of spatial orientations in the metaphorical conceptualization of sequence time, and the influence of the diversity in the reading and writing practices used in Taiwan on the spatialization of earlier and later events across modalities. The study was based on Chinese conversational data in face-to-face communication. The spontaneous gestures occurring along with speech are natural and reveal real-time metaphorical conceptualization in the context of use. It was found that the spatial orientations that are consistent between the

two modalities bear out the online activation of the universal front-back and the culture-specific up-down concepts in the source domains. When speech and gesture are not redundant, the divergence reflects the more complex temporal spatialization involving two timelines or different orientations on the same timeline. The most preferred cross-modal combination of two timelines is the co-occurrence of lateral gestures and the front-back spatial words. Finally, the two different directions in which Chinese characters can be read and written were found to affect people's conceptualization of the earlier or later event as being rightward or leftward.

Fixed vs. free elaboration in picture-based counseling: Contrastive discourse patterns and implications

Dennis Tay

The Hong Kong Polytechnic University

Pictures are an innovative resource in the traditionally verbal activity of psychological counseling (Malchiodi 2011, Ginicola, Smith & Trzaska 2012, Traszka 2012). They provide an alternative medium for clients, who are guided to interpret pictorial elements as metaphors for topics such as their situation and feelings. However, there are no specific methods for doing so (Stevens and Spears 2009), and the discursive characteristics and implications of varying counselor prompts and client interpretations are underexplored. Informed by metaphor theory, this paper examines 31 counterbalanced matched-pairs of elicited picture interpretations responding to either a 'fixed' or 'free metaphor' prompt in Mandarin Chinese. Fixed metaphor prompts suggest a specific topic to be connected to the picture, while free metaphor prompts do not. The transcripts were coded for five variables reflecting key aspects of metaphor construction - sources, topics, source-topic connections, uncertainty markers, and metaphor signals. Spearman correlations were calculated between the variables, and contrastive correlational patterns compared across the fixed and free conditions, supported by qualitative analysis of examples. Results show a higher level of integration among the elements of metaphor construction in the fixed condition, suggesting that people are better able to contextualize pictorial elements to a specified target topic of discussion. These findings motivate follow-up research incorporating counseling outcome measures.

Ginicola, Misty M., Cheri Smith & Jessica Trzaska. 2012. Counseling Through Images: Using Photography to Guide the Counseling Process and Achieve Treatment Goals. *Journal of Creativity in Mental Health* 7(4). 310–329. `https://doi.org/10.1080/15401383.2012.739955`.
Malchiodi, Cathy A. 2011. *Handbook of Art Therapy*. 2nd edn. New York: Guilford Press.

The cross-cultural variation in subjectification/objectivization: Comparing the meaning of adjectives in different languages

Yusuke Sugaya

Mie University

The current research primarily suggests four types of subjectification or objectivization (these two terms are complementary). The four types are obtained by multiplying two different orientations that are derived from cultural distinction (i.e., objectivization1/2) by two distinct universal modes of cognition, namely perception and conception (i.e., objectivization3/4). The working hypothesis here is that, in order to attain objectivity, Japanese speakers would seek to increase agreement among judges (i.e., objectivization2) and to adopt an inclusive perspective regarding the whole picture (i.e., objectivization4); Americans, on the other hand, would strive to decrease commitment by themselves (i.e., objectivization1) and to gain an exclusive view to better analyze the object in focus (i.e., objectivization3).

Such cultural values are likely to have a radical impact on one's behaviors and linguistic uses, such as decision-making and value judgments that may be expressed by adjectives (e.g., *good/bad*). The present survey attempts to partly verify this hypothesis with two experiments involving price and height evaluation tasks (PET and HET).

The first task (PET) was conducted on both Japanese and English native speakers ($n = 72$), using adjectives expressing price evaluation like *high/low* or *expensive/cheap*. The participants (i.e., speakers) were required to make an evaluation of a completely novel object set in a number of created situations or linguistic contexts, where people (i.e., hearers) were differently arranged. The results showed that, in their respective assessments, Japanese speakers were more apt to consider others' knowledge and situations than Americans were (ANOVA, $p < .05$).

Similarly, the second experiment (HET) used height adjectives like *tall/short* and *high/low,* and presented a wide variety of visual contexts as stimulus for recruited Japanese and Americans ($n = 96$). Different inner room situations, including a cabinet, a self (i.e., speaker), a hearer, and other furniture, were shown to them to make a rating of the cabinet. The experiment showed that Japanese participants were more susceptible to different surroundings or situations, and that they incorporated the hearers' judgment into their own judgment more freely than Americans did ($p < .01$).

Cross-cultural differences in the development of interlocutor sensitivity in the realization of apology and refusal strategies

Yuh Fang Chang

National Chung Hsing University

Although many studies have examined children's sensitivity to the interlocutor in the realization of speech acts, most attention has been devoted to the development of the speech act of request. Children's development of interlocutor sensitivity in the realization of speech acts of apology and refusal has attracted less interest from researchers. In addition, most research exploring this issue has been conducted with the western children, and very little attention has been paid to

non-western children's development in this area. Given that aspects such as values related to politeness and the linguistic forms used in the speech act of apology and refusal are culture specific, it is reasonable to expect that the development of apologetic and refusal behavior also varies across language and culture. Hence, it is important to examine the developmental patterns of participants from different cultures to obtain a complete picture of children's development in this area.

American culture and Chinese culture have long been known to differ in their communication styles. On a continuum of cultural communication differences, American culture is placed toward the low-context communication end, which values linear logic and direct verbal interaction. Chinese culture, in contrast, is placed toward the high-context communication end, which prefers spiral logic and indirect verbal interaction" (Ting-Toomey, 1988). Furthermore, the two cultures differ in that American culture is classified as an individualistic culture that considers the preservation of the autonomy of the individual to be significant, whereas Chinese culture is a collectivistic culture that considers the preservation of the harmony within a group to be important (Triandis, 1995). American culture values equality in social relationships and believes that people should treat each other equally when they interact in social environments. In contrast, Chinese culture, under the influence of Confucianism, is traditionally hierarchical in nature. People in the lower social class respect and obey those in the higher social class (Li, 2009). Given that these cultures differ distinctively, social distance and social status could be expected to affect the realization of apology and refusal strategies differently between American and Chinese children. This study attempts to shed light on the cross-cultural differences in the development of interlocutor sensitivity in the realization of speech acts of apology and refusal. The elicitation instrument selected for this study is a cartoon oral production task. Each participant was interviewed individually. Cross-cultural differences were found through quantitative and qualitative analysis of data.

Session III

Contrasts along vowel duration vs. f0 contour: developmental changes in stop identification by Korean-speaking learners of Mandarin Chinese

Sang-Im Lee-Kim

National Chiao Tung University

Contrast effects are ubiquitous in speech perception. Listeners make more 'voiced stop' (*shorter* stop closure) judgments for postvocalic stops when the preceding vowel is lengthened (Raphael 1972, Port & Dalby 1982). Tone language speakers identify a tone as *high* in a *low-f0* frequency context while a physically identical tone as *low* in a *high-f0* context (Moore & Jongman 1997, Wong & Diehl 2003, Francis et al. 2006). Here we report a developmental change whereby learners of a tonal second language process perceptual contrasts along the newly acquired *f0* cues for stop identification. We examined perceptual patterns of stop identification by Korean-speaking learners of Mandarin Chinese along with baseline data from naïve listeners without prior exposure to tone languages.

In 2-AFC tasks, fifteen experienced learners and eighteen naïve Korean listeners labeled word-medial voiceless unaspirated stops (e.g. ma.**p**a) either as **fortis** (higher *f0* onset and longer stop closure) or as **lenis** (lower *f0* onset and shorter stop closure). Tone contours varied between rising (ma.**pa**[35]), level (ma.**pa**[33]), and falling (ma.**pa**[31]). The duration of target vowels varied between short (300 ms), mid (350 ms), and long (400 ms), while stop closure was set to be neutral (90 ms) for the fortis-lenis distinction for Korean listeners (Han 1996). Additionally, *f0* frequency at vowel onset was manipulated to have three steps (180-200-220 Hz). The results of mixed-effects logistic regression models revealed significant group differences only for the contour variable: (i) **Duration**: longer vowel duration elicited more lenis responses for both groups, and (ii) **Contour**: fortis responses were more frequent in the following order: (learners) falling > level > rising vs. (naïve) rising = falling > level. Besides, both groups of participants gave more fortis responses for the stimuli with higher onset *f0* replicating previous findings.

The association between lenis judgments with longer vowel duration seems to arise from contrastive perception of closure duration; longer vowel duration leads to shorter stop closure perception, providing positive evidence for lenis stops. Yet contrastive perception appears to operate on the *f0* cues as well for the learners: *f0* onset of a rising tone may be perceived lower, and hence more lenis judgments, due to the contrast with *high-f0* offset (Zhang, Ding & Lee 2018). Conversely, *f0* onset of a falling tone may be perceived higher due to the contrast with *low-f0* offset, giving rise to more fortis responses. This intrinsic *f0* contrast hypothesis well accounts for the particular ordering of falling, level and rising for higher rates of fortis judgments. Taken together, the results suggest significant developmental changes in patterns of stop identification for the learners: extensive training on dynamic *f0* contour may have enabled learners to employ a more sophisticated *f0*-frequency contrast beyond a simple temporal contrast for stop perception.

Francis, Alexander L., Valter Ciocca, Natalie King Yu Wong, Wilson Ho Yin Leung & Phoebe Cheuk Yan Chu. 2006. Extrinsic context affects perceptual normalization of lexical tone. *The Journal of the Acoustical Society of America* 119(3). 1712–1726. https://doi.org/10.1121/1.2149768.
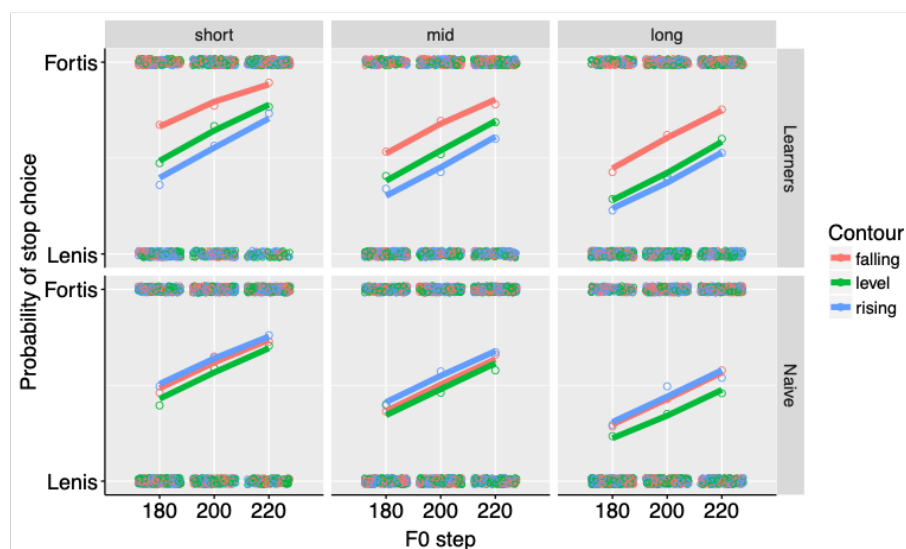
Figure 2.1: Predicted logit curves and actual mean values (outlined circles) for stop identification

Moore, Corinne B. & Allard Jongman. 1997. Speaker normalization in the perception of Mandarin Chinese tones. *The Journal of the Acoustical Society of America* 102(3). 1864–1877. https://doi.org/10.1121/1.420092.

Port, Robert F. & Jonathan Dalby. 1982. Consonant/vowel ratio as a cue for voicing in English. *Perception & Psychophysics* 32(2). 141–152. https://doi.org/10.3758/BF03204273.

Raphael, Lawrence J. 1972. Preceding Vowel Duration as a Cue to the Perception of the Voicing Characteristic of Word-Final Consonants in American English. *The Journal of the Acoustical Society of America* 51. 1296–1303. https://doi.org/10.1121/1.1912974.

Wong, Patrick C. M. & Randy L. Diehl. 2003. Perceptual Normalization for Inter- and Intratalker Variation in Cantonese Level Tones. *Journal of Speech Language and Hearing Research* 46(2). 413. https://doi.org/10.1044/1092-4388(2003/034).

Zhang, Hui, Hongwei Ding & Wai-Sum Lee. 2018. Effects of precursor context on categorical perception of Mandarin tones in disyllabic words. In. Seoul.

The effect of nasalization and duration in the adaptation of English nasals by Mandarin speakers

Yangyu Chen and Yu-An Lu
National Chiao Tung University

This study aims to investigate the seemingly unnecessary intervocalic nasal gemination of English loanwords in Standard Mandarin (SM). In a corpus study, Huang & Lin (2014) reported that English VNV sequences can be adapted into SM in three ways: singleton nasal (i.e., V.NV; *Bruno bù.lǔ.nu*ò), nasal gemination (i.e., VN.NV; *Diana dài.aīn.n*à), and variation (i.e., V.NV VN.NV; *Tiffany dì.fán.nèi dì.fú.ní*). Huang and Lin propose that the nasal gemination rate is correlated with vowel type and stress location: nasal gemination occurs more often when the pre-nasal vowel is non-high, lax, and stressed. They attribute the differential rates to the degree of nasalization, in that stressed pre-nasal vowels are more nasalized than unstressed ones, and to duration, in that the vowel duration in VN syllables in SM is similar to

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that of a lax vowel. Two forced-choice identification experiments were designed to tease apart the relative contribution of nasalization and duration on the adaptation patterns. The participants were asked to choose between V.NV and VN.NV forms with choices in phonetic transcription (i.e., *Bopomofo*) displayed on the screen. The stimuli were disyllable CVNVC non-words with the pre-nasal vowel being non-high, either tense or lax (e.g., [tómʌf] vs. [tɔ́mɪk]), and with stress on either the first or second syllable (e.g., [dénɛk] vs. [beníp]). In the first experiment, we tested the effect of nasalization by manipulating the stress condition into four types: stressed (stress on the pre-nasal vowel), unstressed (stress on the second syllable), modified (cross splice the pre-nasal syllable from an oral context), and no nasal (change the nasal to an oral counterpart). If the degree of nasalization affects the adaptation pattern, we predict the scale of gemination rate to be stressed > unstressed > modified = no nasal.
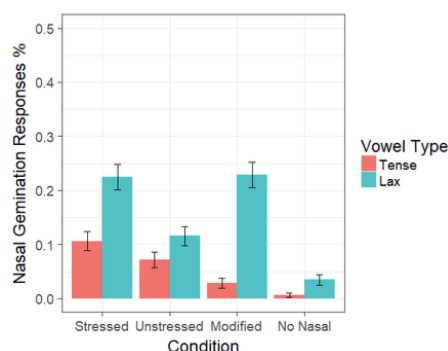
Figure 2.2: Procedure of the verbal experiment
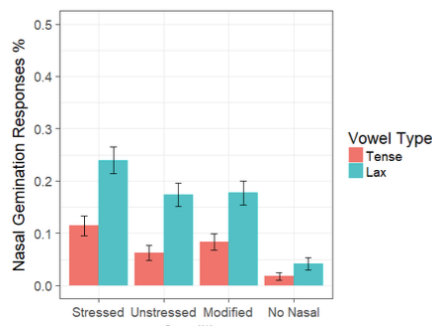
Figure 2.3: Example stimuli in the nonverbal experiment with the corresponding correct responses in the brackets

The results, however, showed a vowel type main effect, indicating a higher gemination rate for lax vowels than for tense vowels, and only a weak nasalization effect driven by the modified condition, as shown in Figure 2.2. In the second experiment, we tested the contribution of duration by swapping the durations of tense and lax vowels and predicted that the gemination responses for tense and lax would be swapped if the degree of duration affects the adaptation pattern. However, as shown in Figure 2.3, we still found a strong vowel type difference in the same direction (i.e. higher nasal gemination rate for lax vowels than for tense vowels). Only a weak duration effect is found. We propose that Mandarin speakers might have perceived the tense vowels as diphthongs (i.e., English /e/ to [ej], /o/ to [ow]) and inserting a nasal coda is illegal in this contexts (*CVGN). That is, the

preliminary findings suggest a stronger effect from phonotactics that overrides the perception of nasalization and duration.

Huang, Ho-Hsin & Yu-Hwei Lin. 2014. When Unnecessary Repairs Become Necessary: The Case of Nasal Insertion in Standard Mandarin Loanwords. In.

Learning to read Chinese in very young L2 Chinese learners in Hong Kong

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[1]Department of Early Childhood Education, The Education University of Hong Kong
[2]The Chinese University of Hong Kong

19 Oct
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16:00
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This research examined some of the key correlates of early Chinese reading in L2 ethnic minority Chinese speaking kindergarteners in Hong Kong. A total of 127 ethnic minority first or second year kindergarten children (mean age = 51.01 months; SD = 7.53 months) were recruited for this study. Their mother tongues included English, Urdu, Nepali, Punjabi, Tagalog, Hindi, Korean, Bahahsa Indonesia, Bengali, Dutch, Esan, Ewe, French, Kinyarwanda, Russian, and Tamil. We administered tests that tapped a range of early Chinese literacy related skills including Chinese word reading, Cantonese phonological processing skills, vocabulary knowledge, early orthographic skills and copying skills. A partial correlation analysis was performed after controlling grade and non-verbal intelligence. Similar to that for L1 Chinese speaking children, the results revealed Chinese phonological processing skills, vocabulary knowledge, early orthographic and copying skill were all significantly correlated with Chinese word reading skills. Regression analysis suggested that Chinese expressive vocabulary, phonological awareness, orthographic discrimination and pure copying made unique contributions in early Chinese word reading for L2 ethnic minority children in Hong Kong. The discussion is surrounded the suggestion for pedagogy for L2 Chinese acquisition in Hong Kong

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Same interpretation, different process? The case of verbal-le and You+VP in Taiwan Mandarin

Aymeric Collart

National Taiwan Normal University

19 Oct
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Basement A

The time representation of a sentence can be encoded with a great variety of linguistic tools. This can lead to different interpretation, such as the 'completed event' one. The aspectual perfective particle *le* has been analyzed as converting such a meaning (Smith 1997, Klein, Li & Hendricks 2000), like in (4a). Meanwhile, as the verb *you* 'to have' has been grammaticalized into an auxiliary in Taiwan Mandarin, it has also been analyzed by some scholars as a perfective marker, semantically equivalent to the particle *le* (Shi 2001; Tsai 2002). An example is given in (4b).

However, other analyses see *you* as a realis marker or factual marker, putting forward the different syntactic and semantic behaviors of the two markers (Wen 2002, Liu 2011). Under this view, the 'completed' interpretation conveyed by the auxiliary *you* would be due to different reasons, compared with the perfective *le*.

(4) a. *Ta   zuotian   / #mingtian   xi-le   yifu*
         3SG yesterday / #tomorrow wash-PERF clothes

     b. *Ta   zuotian   / #mingtian   you xi   yifu*
         3SG yesterday / #tomorrow YOU wash clothes

     'He washed the clothes yesterday / #tomorrow'

This paper aims to investigate whether these two markers are different or equivalent with a behavioral and an event-related potential (ERP) study. Both markers were placed with a past or future time adverb in a sentence, with temporal violation being created in the future time reference sentence (see elements marked with # in (4a) and (4b)).

Acceptability judgments in the behavioral study revealed a significant effect of the temporality of the sentence, of the marker, and an interaction of both factors. This implies that even if the two markers are highly related with past time reference, compared with *le, you* is less acceptable in past time sentences but more acceptable in future time sentences, supporting the idea that the two markers are not exactly the same, despite a similar interpretation. As for the ERP study, the incongruent *you* elicited a stronger late negativity (after 600 ms) and the verb after the incongruent *you* (*you* wash) elicited a stronger N400 than their congruent counterparts, while the incongruent le (wash-*le*) induced a stronger LAN-like component than the congruent *le*. This suggests that the underlying processes of the two markers are indeed different, the one of *you* being semantically driven, while the process of le being grammatically based. This is also in line with previous time-relational analyses of *le* and semantic analyses of *you*.

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The processing mechanisms of anaphoric resolution: A study of the processing of expletive pronouns in Chinese

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The two-stage model of anaphoric processing proposes two levels of anaphoric resolution: *antecedent bonding* and *referential resolution* (Sanford & Garrod 1989). The initial bonding stage is automatized by a matching process of the featural constraints (i.e., number / gender agreement) without necessarily forcing a referential commitment. In contrast, the resolution stage involves selection and inferential processes in determining a referential commitment.

This two-stage model has been challenged by some recent ERP studies investigating the role of gender information in pronoun resolutions (Callahan 2008), which reported ERP effects elicited by gender mis-match that tapped to the level of integrative processing (i.e., N400 and P600) rather than the processing of feature matching (i.e., anterior negativity typically associated with working memory load, Germany: Hammer et al. 2008, Schmitt, Lamers & Münte 2002).

We examined the two-stage model with a radically non-orthodoxical case of anaphoric processing: The expletive pronouns in Chinese (Mandarin) (e.g., 它個/他個, *ta(ge),* an inanimate 它 or animate 他 pro-form with a classifier 個 in sentence 5a.

(5) a. 我 吃　它/他個 五　碗　　面。
I　eat tage　　five bowl noodle

"I would like to eat heartedly five bowls of noodle"

  b. 李四　　　　　/王芳 叫　　　志明 吃 他 *(它)*/個 五　碗　　面　　　吧。
Lisi/WangFan ask　Zhiming eat　ta /ge　　　five bowl noodle ASP

"Lisi/WangFan ask Zhiming to eat heartedly five bowls of noodle"

The meaning of the expletive pronoun "它個" must be interpreted in a non-orthodoxical manner to the major referential functions of a pronoun. For one thing, the referential links must be built *cataphorically* rather than anaphorically (i.e., the pronoun 它個 must *precede* its target antecedent "五碗面" rather than follow after it). For another, while the antecedent referent of the expletives must indicate an *inanimate* and *plural* entity like "五碗面" rather than a single entity "一碗面 (one bowl of noodle)", the expletives per se must have a *singular* form regardless whether the pro-form is an animate "他" or inanimate "它". For these reasons, the expletive pronoun has been argued to rely on an "associative" processing to establish its referential link with the target cataphorical antecedent (Wu & Matthews 2010).

In eye-movement experiments, we examined how the expletives' "associative" processing differs from and interacts with the anaphoric processing of the two-stage model when Chinese readers read sentence 5b (as a prototypical sample) for comprehension. The NP1-NP2 sequence creates a gender ambiguous (李四-志明, both are male characters) and unambiguous (王芳-志明, 王芳 is a female character) conditions for the expletive when it is in an animate form "他" but not when it is in an inanimate form "它". Thus, resolving the expletives in reading gender-unambiguous-expletive(它個) sequences is predominantly associated with the "associate" processing while that in reading the gender-ambiguous-expletive (他個) sequence is likely to interact with the automatized "bonding" processing. Gaze duration at the expletives (它/他個) indicated the Gender-ambiguity main effect that also interacted with the pro-form (它 vs. 他). Gaze duration was greatly elevated in processing the gender-ambiguous NP1-NP2 when the expletive is in animate form (他) but not when it is in inanimate form (它). Furthermore, measures of integrative processing (i.e., regression path duration) reinforced this interactive pattern.

These results, by and large, support the two-stage model. For Chinese expletives that rely primarily on an associative and inference-based processing for resolution, an automatized bonding processing is inevitably triggered when the expletive pro-form matches with the potential antecedent in preceding context. Additional cost

is required to resolve competitions from bonding activity in establishing the cataphorical links with the target "五碗面". The results will be further discussed in the context of different theoretical frameworks of anaphoric processing and how these theories can be generalized across different languages.

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Modularity in view of spoken Chinese relative clause processing

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While it is generally agreed that working memory plays a fundamental role in sentence comprehension and processing, it is yet unclear how working memory works and what role it plays. Modularity represents the central issue. Long-standing controversies were raised as to (1) what is the nature of the capacity limits on the working memory resources used for language comprehension? And (2) whether language is specific or general? Does it draw on separate from or the same memory resources with the general cognitive processes? Just & Carpenter (1992) argued for the single-memory resource (**SR**) pool that is used for all verbal tasks, thus assuming the domain generality of language. By contrast, Caplan & Waters (1999) proposed the separate-sentence interpretation resource theory (**SSIR**) which involves a specialized working memory system, supporting the domain specificity of language. To investigate the competing accounts of **SR** and **SSIR** models, the current study examines the effects of the memory load interference on complex sentence processing. The rational is based on the assumption that a specific effect of memory load on sentence processing would map with the complexity of sentence: The processing syntactically more complex sentences would suffer more than processing syntactically simpler sentences under concurrent memory load. Two experiments, interpretation-*external* (i.e., digit-recall) and interpretation-*internal* (i.e., lexical decision) memory interferences, were conducted to explore to what extent they may influence the processing of spoken Chinese relative clauses. As interpretation- *external* process requires the more conscious controlled processing, compared to the interpretational-*internal* language processing, **SR** and **SSIR** have different predictions. **SR** account predicts that the *external*

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memory load will compete with the language comprehension as they share the same pool of memory resources, and that interpretation-*external* load will interact with sentence complexity. Moreover, the competition and interaction effect will be more evident for the interpretation-*external* memory load than the interpretation-*internal* load. Contrastively, **SSIR** account predicts that no interaction or competition effect will be observed under either the *external* or *internal* memory load conditions, if working memory processing and syntactic processing draw on different resource pools. In brief, **SR** account predicts that there is an interaction between the memory load and sentence complexity, while **SSIR** account does not. Our results showed that in both *external* (digit) and *internal* (lexical) interference experiments, no interactions were observed and therefore provided evidence that the working memory system used for sentence comprehension is separate from the general cognitive processes.

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Influence of emotion labeling on the judgment of emotion category of facial emotion

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According to the psychological construction theory of emotion, labeling an affect promotes the construction of the conceptual representation of facial expressions (Lindquist, MacCormack & Shablack, 2015). In the present study, we investigated the effect of emotion labels on the judgment of emotion category of facial emotion using a psychophysical method. We also tried to compare the conditions under which labels were read aloud or silently to see if the auditory feedback accompanying the utterance would increase the effect. During the experiment, one of three words ('Pleasure', 'Anger', and 'Mass') was presented and participants read aloud the word if it was underlined. Then, the target face, chosen from 6 gradually morphed faces from Happy to Angry, was presented for a two-alternative forced choice task ('Happy' or 'Angry'). Using a psychometric function, points of subjective equality (PSEs) of participants were estimated and statistically analyzed. Compared with the non-emotional word, reading an emotional word, 'Pleasure' or 'Anger', significantly changed the PSE. Moreover, when the word 'Pleasure' was read aloud, the PSE was further biased to Happy. By demonstrating emotion labels change the perceptual category boundary of facial emotion, the current results support the claims of Lindquist et al. (2015) that language has an important role in the process of constructing emotion.

The function of figurative expressions in emotions: Ortony's vividness hypothesis

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Metaphors help to capture the vivid aspect of emotional experience and make it describe in more detail (Ortony, 1975). From metaphoric expressions of emotions, we can imagine our emotion as vivid as a recent, intensive, and prominent emotional experience. In the current study, we hypothesize that figurative expressions would be more plausible with vivid facial expressions. We manipulated colors of emotional faces for the vividness of facial stimuli. According to Nakajima et al. (2017), facial colors affect perceptual processing of facial expressions. When a face is reddish, for example, people perceive it more angry than when it is neutral color. In the plausibility judgment task, fearful and angry faces were presented in three different colors (Facial Color: bluish/ reddish/ neutral) before a figurative expression describing fearful or angry experience. Participants were instructed to judge whether the linguistic expression is plausible to describe the preceded facial expression. Results show that people judged figurative expressions more plausible describing vivid facial stimuli. Figurative expressions for anger (e.g., *steamed up*) were more plausible with reddish-angry faces than bluish-angry faces and expressions for fear were more plausible with bluish-fear faces than reddish- and neutral-fear faces. Furthermore, reaction times faster in the bluish- fear face condition than others. These results suggest that figurative expressions describe quality of emotional experience including the vividness of emotion.

Semantic prosody in the processing of Mandarin-Chinese verbs: An ERP study

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The meaning of a word tends to express more than what is denoted down in a dictionary. As a matter of fact, it is usual to find words go hand in hand with each of their habitual close surrounds, and together they form a phrase-like constituent to imply a certain message. Such word patterning prompts the current study to approach the issue of word meaning through a phraseological analysis, which also leans towards the idiom principle. An evidence for this hypothesis is the notion of semantic prosody, which states a transfer of semantic features onto the meaning of a word from that word's habitual collocates, yielding an epistemic or pragmatic reading imposed on the word.

In the hope of discovering how such "co-occurring" tendency may affect our semantic processing of word and the online computation of "semantic prosody", this study adopted the event-related brain potentials (ERP) technique. We anchored on the emotion aspect of semantic prosody, using two-character Mandarin transitive verbs as our stimuli, and employed a 3 x 2 factorial design based on two main factors: (1) Valence of target verbs (Negative, Neutral, Positive), and (2) Polarization of emotion in target verbs' habitual nominal collocates (Highly emotion-polarized, Low emotion-polarized). A set of target verbs from all six experimental conditions

were: (a) 釀成 (negative-high), (b) 破壞 (negative-low), (c) 減輕 (neutral-high), (d) 配戴 (neutral-low), (e) 創造 (positive-high), and (f) 安撫 (positive-low).

Our results showed emotion effects in the N400 (300 450 ms) and the LPC (500 800 ms) time windows. Smaller N400 amplitudes for the positive verbs were found, demonstrating easier semantic processing for words of positivity. In addition, enhanced LPC effects for the emotional verbs were found, which may suggest vivid mental images were activated and that more active cognitive analysis was taxed when we read words with distinct emotions. As for the effects of semantic prosody, our experiment failed to find its online computation because no clear polarization effect (from the invisible collocates) on the processing of emotion was found. However, we did observe that the valence of the verbs may come from the valence of the high-frequency collocates. Thus, we argue that semantic prosody might have been gradually formed during the process when a speaker learns and uses the combination of the verb and its collocates, and is directly associated with the verb once it is consolidated. In sum, our experiment revealed that the emotive feature of a transitive verb may come from the valence of its high-frequency collocates. Just as the idiom principle puts it, meaning should arise from word patterns, not from word in insolation. Thus, we suggested that semantic prosody is a rather important section in our conception of a word.

Session IV

Sensorimotor adaptation of speech in L2 learners of Mandarin

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Background Pitch-shift paradigm in which a short and artificial change in pitch is fed back to speakers during vocalization has been used to investigate how sensory information affects the way we control our speech motor activities. The pitch-shift response (i.e., vocal responses to auditory perturbation) is a reflex-like auditory-vocal response elicited by artificial shifts in auditory feedback. Speakers typically respond to the pitch stimulus by shifting the fundamental frequency of their voice in a compensatory direction. The pitch-shift paradigm can be used to understand the stability of internal models for tone or pitch.

Previous pitch perturbation studies indicate that feedforward control of speech motion is not static but can be updated by changes in feedback. Instead of using constant pitch-shifts in auditory feedback during the entire experiment, adaptation studies use gradual but slight alterations in auditory feedback to modify speech output in adults. The results show that singers rather than nonsingers can continuously update the internal model (i.e., online recalibration) to accommodate the continuous changes in F0 and show clear aftereffect when the feedback was returned to normal. This sensorimotor adaptation and immediate aftereffect are also found in Mandarin speakers' production of tone 1 and tone 2. Whether second language learners of Mandarin would show sensorimotor adaptation and aftereffect has not been previously investigated. The current goal is test whether the online recalibration of internal models of pitch can appear in second language learners of Mandarin.

Methods Fourteen native Mandarin speakers and 14 second language learners of Mandarin (7 beginners and 7 advanced learners) produced the sustained vowel /a/, the Mandarin /ma1/ (a high level tone, meaning *mother*) or Mandarin /ma2/ (a rising tone, meaning *hemp*) while listening to their own vocalizations under headphones. The pitch of the participant's auditory feedback was increased (up-shift) or decreased (down-shift) by 2 cents for each successive utterance until the feedback received was one semitone (100 cents) above or below the participant's pitch. In the test phase, they produced 20 more utterances with normal auditory feedback.

Results The aftereffect, where the participants in the test phase responded as if they anticipated the altered feedback, was task sensitive (F(2, 162)=3.702, p<.05). When vocalizing a sustained vowel /a/ (see the top horizontal panel in Figure 1), native Mandarin speakers showed smaller aftereffect than L2 learners (F(2, 80)=3.286, p<.05). In Mandarin /ma1/ production, all speakers showed clear aftereffect in the downward shift condition, suggesting that the continuous downward perturbation makes the voice F0 considerably deviate from the intended high pitch for /ma1/ and thus triggers the online recalibration of the internal model for tone. In Mandarin /ma2/ production, the aftereffect was present in native Mandarin speakers' downward shift as in MA1, but in L2 learners' upward shift. This difference suggests that the internal model of the rising tone in L2 speakers was not the same as the one in native Mandarin speakers. L2 speakers' productions of /ma2/ in general did not rise clearly at the end.

Lexical nature of the phonological priming effect in Chinese naming

Hsin-Chin Chen

National Chung Cheng University

The phonological priming effect obtained in Chinese naming has attracted much interest for researchers developing word recognition models, e.g., the universal phonology principle (Perfetti and Zhang, 1996) and the strong phonology theory (Frost, 1998), because they provided the evidence for the early and automatized phonological processes when recognizing words in an opaque writing system. However, studies have demonstrated that the semantic priming effect, a lexical effect, could be obtained in Chinese character recognition even when the SOA between the prime and the target was set as short as 50ms (e.g., Chen and Shu, 2001; Chen et al., 2007), questioning whether the source of the phonological information resulting in the phonological priming effect around the SOA of 50ms obtained in Chinese processing should be early pre-lexical or late post-lexical. In the present study, two experiments were conducted to re-examine the phonological priming effect in Chinese naming by manipulating the character frequency of the phonological prime and the SOA between the prime and the target. We obtained the frequency effect, a lexical effect, of the phonological primes no matter the SOA was set shorter (50ms in Exp.1) or longer (100ms in Exp.2). The phonological primes with lower character frequency revealed a larger priming effect, comparing to those with higher character frequency. The finding of the lexical nature of the phonological priming effect in Chinese naming supported that the source of the phonological information applied in Chinese phonological priming effect could be actually post-lexical. As such, the effect of phonological priming effect should not be treated as the evidence for the early phonological processing in Chinese character processing.

Phonological interference in a primed picture naming task

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Across different paradigms of spoken word production, phonological overlap between a prime and a target can generate opposite effects on target word production (e.g., a facilitative effect in the picture-word interference paradigm, an inhibitory effect when the prime is also produced before target word production). It is unclear whether the modality of prime word presentation modulates the effect of phonological overlap. Hence, the current study directly compared the effects of perceiving versus producing a phonologically related prime on target picture naming. In Experiment 1, three picture sets were selected as stimuli, each consisting of three pictures whose names were disyllabic Cantonese words and shared the same first atonal syllable (e.g., 書包 /syu1baau1/ "schoolbag", 薯仔 /syu4zai2/ "potato", 樹葉 /syu6jip6/ "leaf"). The nine pictures in total were paired with each other to generate two conditions: phonologically related (sharing the first atonal syllable), or phonologically unrelated. During the experiment, these pictures were presented one at a time. Each two consecutive pictures implicitly formed a pair

of prime and target. Phonologically related pairs and unrelated pairs were mixed within blocks. The pictures were either presented alone or together with a gray frame. Cantonese-speaking participants were required to name aloud each picture with the predesignated name if the picture was presented alone but no response was required if it was accompanied by a gray frame together with an auditory presentation of the picture name. Participants named all the target pictures aloud. A naming response was required only for half of the prime pictures (where the picture was presented alone; i.e., active naming prime condition) and no response was required for the other half (where the picture name was auditorily presented together with the picture; i.e., passive listening prime condition). Prime-target relatedness (phonologically related vs. unrelated) and prime condition (active naming vs. passive listening) were manipulated factorially. Participants' naming latencies were significantly longer when the prime and the target shared the first atonal syllable relative to the unrelated condition, and this interference effect of phonological overlap was comparable across the two prime conditions. This pattern of results was replicated in Experiment 2 with a larger set of stimuli (i.e., fifteen pairs of pictures with disyllabic Cantonese names, each pair sharing the same first atonal syllable). The current finding is consistent with the interactive view of word form encoding during speech production, which assumes that in the word form level of representation the activated form nodes send feedback to the lexical level. The phonological interference observed on target picture naming might result from co-activation of other lexical entries with word form overlap including the pre-activated prime. Comparable effects were induced, no matter the prime was passively perceived or actively produced, suggesting that the same lexical network could be shared between the perception and the production systems and that perception of the prime could alter that network in a similar way as production of it.

Prosodic realization of Taiwan EFL learners

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Most EFL teachers in Taiwan often have the impression that their students tended to speak English in a choppy manner with frequent strong beats. However, how this impressionistic characteristic is manifested prosodically is rarely scrutinized. This study thus intends to investigate the prosodic features of Taiwan EFL learners in order to understand how various components of prosody contribute to this impression, including prosodic phrasing, accent assignment, and declination. For nonnative speakers, short read passages from 16 test-takers of the General English Proficiency Test spoken exam were used. Half of the speakers were awarded the highest score of 5 (the high-proficiency group, HL2 hereafter), while the other half were awarded a medium score of 3 (the low-proficiency group, LL2 hereafter). An additional control group of eight native speakers of American English was also recruited and recorded in a manner analogous to the test condition to serve as the control. Pitch accents and prosodic phrasing were labeled according to the ToBI convention (Beckman & Ayers Elam 1993). Declination was operationally defined by comparing F0 maxima of adjacent pitch accents with an H target.

Preliminary results showed that all liaison instances were contributed by native speakers and most disfluent tokens were found among nonnative speakers. Nonnative speakers segmented their speech flow into smaller chunks, resulting in more intonational phrases (IPs), and thus the choppy impression. They also placed more pitch accents within a given IP. In fact, accent density was negatively correlated with English proficiency. This probably contributed to the impression of frequent strong beats in their English production.

Placement of IP boundaries was both type- and group-dependent. For prosodic boundaries that also coincided with major syntactic boundaries, all three speaker groups were fairly unanimous. For prosodic boundaries that did not coincide with major syntactic boundaries, HL2 performed similarly as their native counterparts, while LL2 speakers did not place as many tonal boundaries. Boundary tone choices showed an across-group consensus only for prosodic boundaries that coincided with syntactic boundaries. All three groups preferred a falling contour. For boundaries that did not coincide, there was a native-nonnative divide. Native speakers still preferred a falling contour, while nonnative speakers tended to adopt a level tone instead.

Finally, there was a stronger correlation between the degree of declination and IP duration; the lower the proficiency, the stronger the correlation. One suspected this might be a transfer from the native language, as was proposed by Yuan & Liberman (2014). In addition, comparable declination levels between Mandarin and English production was only found for HL2 learners. More data would be collected and analyzed to further clarify this issue.

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Spatial prepositions *ti7*, *tiam3* and *tua3* in Taiwan Southern Min revisited: From a corpus-based approach

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This study investigates spatial prepositions *ti7*, *tiam3* and *tua3* in Taiwan Southern Min from a corpus-based approach. The three spatial prepositions have been treated interchangeable, but there are some minor differences (Lien 2003, Yang & Lu 2018). Lien (2013) contends that *ti7* shows a declarative mood while *tiam3*/*tua3* express an imperative mood. The three prepositions are more like in a continuum (Tiuⁿ 2009). When an event has existed, *ti7*, *tiam3* and *tua3* are interchangeable; when an event happens in the future, *tiam3* and *tua3* are interchangeable. Furthermore, Yang and Lu (2018) demonstrate that *ti7* differ from *tiam3* and *tua3* in semantic networks, where *tiam3* and *tua3* resemble in the network.

Synonymous as they are, *tiam3* and *tua3* can be distinguished as in the phrase *ti7*/*tiam3*/*tua3 toh4 ting2* 'on the table'. The most acceptable and natural use is *ti7 toh4 ting2*. *tiam3toh4 ting2* is less acceptable and sometimes unnatural when there

is no proper context. *tua3 toh4 ting2* is ungrammatical because *tua3* cannot function as a preposition. Instead, *tua3* is a verb 'to live', and *tua3 toh4 ting2* means 'to live on a table'.

To better account for the nuances between the three prepositions in Taiwan Southern Min, I adopt a corpus-based approach by extracting data from an on-line corpus, Taiwanese Concordancer (Iuⁿ & Lau 2007=). I pay specific attention to the distributions of the three spatial prepositions after two verbs *khng3* 'put' and *khia7* 'stand'. 936 entries of verb *khng3* 'put' are retrieved from the corpus. In total, the three prepositions are attested in 384 entries. The distribution is that 297 entries from khng3 *ti7* (77%), 74 entries from khng3 *tiam3* (19%) and 13 entries from khng3 *tua3* (3%). 1000 entries of verb *khia7* 'stand' are collected from the corpus, and the three prepositions are attested in 449 entries. The distribution is that 408 entries from *khia7 ti7* (91%), 28 entries from *khia7 tiam3* (6%), and 13 entries from *khia7 tua3* (3%).

All the three prepositions are attested in the corpus, making them become interchangeable in use, but the frequency in the corpus reveals that *ti7* is the most favored, as the distributions of the two verbs suggest that *ti7* significantly outnumbers *tiam3* and *tua3* in the corpus. The results can account for the ungrammaticality of preposition *tua3* in *tua3 toh4 ting2*, which cannot mean 'on the table'. Low frequency (< 5%) makes *tua3* least acceptable in the phrase.

The findings have two implications. First, although the three prepositions are interchangeable in use (Lien 2003, Tiuⁿ 2009), the skewed distributions suggest that they should be treated with different weight, *ti7 > tiam3 > tua3*. Second, the grammaticalization path of the three prepositions is that *ti7* is far more grammaticalized than *tiam3* and *tua3* are, and *tiam3* has undergone more grammaticalization than *tua3* does.

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Reading Chinese four-character idiomatic expressions: knowing more about semi-fixed idioms from eye-movement measures

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Four-character idiomatic expressions are frequently used in Chinese. Although some of these idioms are known as lexically fixed, there is one type of them that is semi-fixed, not fully lexicalized and contains open slots for variants in actual use. These semi-fixed idioms, as called schematic expressions, are abundant and productive in Chinese idioms (Ching, 1964; Zhang, 2002). Open slots, such as not-A-not-B where A and B usually conform to certain structural and semantic constraints, enable creation of novel phrases. However, not much has been known about what

morphemes can be put into these slots, how people process these semi-fixed idioms when they contain semantically legitimate and illegitimate morphemes, and how people process the semi-fixed structure. This study uses eyetracking to investigate the features of the internal components of these semi-fixed idioms by comparing them with other four-character idioms and determiner phrases. The design contains two independent variables, a) type of four-character expression (semi-fixed idioms, non-fixed idioms, determiner phrases) and b) legitimacy of the morpheme at one of the four characters (legitimate, illegitimate). Twenty-four native mandarin participated in the eyetracking experiment. Participants read 48 experimental stimuli and 48 fillers at their pace, and answered a yes/no question after each trial. Various eye-movement measures are taken for the analysis, including first-fixation duration, first and second pass duration, fixation counts, regressive path duration. The results will tell more about the semantic and structural configurations of the semi-fixed idioms and how they are different from the non-fixed idioms. The results will also tell about the compositional view during idiomatic processing of these highly institutionalized four-character patterns (Nippold & Taylor, 2002).

Comparing the time-courses of lexical processes in L1 and L2 word recognition: A lexical decision eye tracking study with Japanese-English bilinguals

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In the course of visual word recognition, accumulated evidence suggests that a bilingual's two languages are activated in a non-selective manner, regardless of orthographic similarity between L1 and L2 (e.g., Dijkstra et al. 2010, Miwa et al. 2014. This tentative conclusion, however, comes largely from studies on L2 lexical processing; studies on L1 lexical processing are relatively scarce (but see Cop et al. 2017, Lemhöfer, Huestegge & Mulder 2018). The present study compared the patterns of non-selective cross-language activation in L1 and L2 word recognition. The aim of this study was twofold: (1) to examine when, in the course of L2 word recognition, the apparent processing delay relative to L1 arises and (2) to investigate whether the patterns of lexical processing in L1 and L2 are qualitatively different, with a special focus on cross-language phonological and semantic similarities, as well as L1 and L2 frequencies. Examining lexical processing in different-script bilinguals allows us to better understand the effects of cross-language phonological and semantic similarities uncontaminated by the rapid orthographic co-activation of two languages seen in same-script bilinguals.

In order to tap into the time-course of lexical processing, we used eye-tracking superimposed on lexical decision tasks. Thirty-two Japanese-English bilinguals responded to 500 words (250 words and 250 nonwords) in their L1 and L2. In both tasks, our study used the same items (i.e., translation equivalents in L1 and L2) and the same group of participants. This design allowed us to directly compare L1 and L2 processing devoid of item- and individual-level differences.

Using mixed-effects regression modeling (Baayen, Davidson & Bates 2008), response time data were analyzed alongside measures of early and late processing

(first fixation duration and later fixation duration, respectively). Overall, L2 word recognition was, as expected, slower than L1 word recognition. This processing delay was found to arise at late fixations, rather than at first fixations. Interestingly, although there were some commonalities between L1 and L2 processing, the patterns of lexical processing were not perfectly comparable. For example, main effects of L1 word frequency on response times were found in the L2 task while no effects of L2 frequency were found in the L1 task. Main effects of cross-language phonological similarity were found in L2 but not in L1 lexical decision, in which the phonological similarity effect depended on L1 frequency. On the other hand, the rapid appearance of word length and target word frequency effects as well as late contributions of cross-language semantic similarity point to the common processing architecture shared between L1 and L2 word recognition. The results will be discussed with respect to the BIA+ model, a model of bilingual visual word recognition (Dijkstra & van Heuven 2002).

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A processing perspective on Korean learners of English's interpretation of himself

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This is an experimental study investigating the interpretation of the English reflexive pronoun himself by Korean learners of English. The aims of this study are to understand the time-course processing per word in a self-paced reading experiment, and how this data aligns with traditional antecedent judgement data also collected. Importantly, this study theoretically assumes that Korean makes use of pragmatic binding strategies in dealing with its anaphora, while English makes use of syntactic ones (Huang 2000). Thus, through differing L1 and L2 binding strategies allows testing of the theoretical assumption through experimental means

(Felser & Cunnings 2012, Sperlich 2016). Moreover, a gap is filled in the literature as to date there are no processing studies using this type of population with this methodology.

In a self-paced reading experiment on Korean learners of English (N=77, age range 19-30, CEFR proficiency between B1-C1) interpreting the reflexive pronoun himself, participants read 40 tokens (with an equal amount of distracter items) divided equally into 'neutral' and 'biased' conditions. In the neutral condition, e.g. Peter said that John will shoot (pre-critical) himself (critical), everyone (post-critical) heard that, it is expected that learners will bind himself by John locally, following usual English syntactic patterns. In the biased condition however, The prisoner thinks that the policeman will shoot himself, everyone heard that, learners will respond to pragmatic bias (considering stereotypical relations between a prisoner and policeman) due to L1 influence and be bound long distantly by The prisoner (against English syntax, Reuland 2011). The main hypothesis is that the evaluation of the long-distant antecedent will cause a slowdown effect seen both in the critical and in the post-critical region, which will be stronger in the biased condition, due to L1 influence. Subjective cognitive data on the participants' confidence levels and knowledge source are also collected to help profile antecedent choices.

In brief, the grouped learners show a clear slowdown in processing in both conditions leading from the pre- to critical region (paired t-test, $p < .001$). However, there is no significant difference between the two conditions in the critical/post region (independent t-test $p > .05$). The judgement data shows that long-distance (LD) binding is high in the intermediate level (38%), and decreases in the upper-intermediate group (20%) to low levels (12%) at the advanced level ($2p < .001$) in the biased condition, where a similar decreasing pattern is found in the neutral condition (in line with the literature, e.g., Lee 2008). However, a comparison between the biased and neutral conditions show there are no differences ($2p > .05$). Thus, both conditions engender a slowdown in the critical region while LD binding occurs—why?

Importantly, by taking an in-depth look at the data we discover interesting interplays between how the antecedent was judged and how the sentence was processed (e.g., how slowdowns differ among those accepting/rejecting the LD antecedent, how cognitive measures shed light) among other important data points, that are missed when studying the data from a global level only. Overall, this shows that L1 pragmatic binding principles cause issues for the learners in their L2 as seen in the processing slowdowns and antecedent choices, suggesting that learners must exchange anaphoric systems as theorized by Sperlich (2017).

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Onomatopoeia used in product descriptions for Japanese commercial snacks − focus on terms related to food texture −

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The author, whose research themes center on food and language, especially texture terms, takes great interest in how such information including onomatopoeia for Japanese food is received and understood by non-native speakers. Therefore, in this research, we focused on commercial snacks that are popular as souvenirs for foreign tourists, then we conducted surveys and analysis to determine the actual usage of onomatopoeia and their forms of expression in product names and descriptions.

The method entailed collecting information through each company's website on product names and item descriptions for approximately 350 product brands from ten major confectionary and snack manufacturers in Japan. Target products included chocolate, biscuits, potato snacks, rice snacks, cereals, candies, gummies, chewing gums, puddings, jellies, yoghurt, ice creams, etc., each of which exhibited characteristic onomatopoeia vocabulary. In this report, we present mainly on chocolate and starch-based snacks.

In Japan, product names and packaging contain a mixture of Japanese letters (hiragana and katakana), Chinese characters (kanji) and alphabetical notation. In particular, new products in recent years have tended to include many different types of descriptions about taste, texture, method and ingredients on its packaging. A variety of forms of onomatopoeia (including mimetic words) are used in product names and item descriptions, such as *saku-saku, sakkuri, kari-kari, zakkuri, parit-to* to describe a crispy or crunchy texture for wheat flour-based products, rice snacks and potato snacks. On the packaging of many of the products was onomatopoeia intended to give a sense of sizzle, and we also found many examples of product names with sounds intended to be reminiscent of the texture of the product. It is possible to convey product characteristics in an easy-to-understand manner to Japanese native speakers who understand onomatopoeia, but difficult for non-native speakers to understand. However, in terms of Japanese language education, it is also possible to view such situations as opportunities for non-native speakers to learn and understand new Japanese onomatopoeia through interaction with a product.

All that glitters is not gold: Prototypical semantic change in shiny Literary Chinese ideophones

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Ideophones, cross-linguistically defined as "marked words that depict sensory imagery" (Dingemanse 2012), have been receiving renewed interest in the last two decades in Chinese and other Sinitic languages (Sun 1999, Mok 2001, Meng 2012, Wu 2014, Van Hoey 2015, Van Hoey & Lu 2016). However, most of these studies have focused on the synchronic formal aspects of these words, namely (partial) reduplication, or ABB-like schemas. It is rarely discussed on how these ideophones were used in terms of contexts. This innovative study explores the semantics of

Chinese ideophones from a diachronic perspective, aiming to reveal the relations between the contexts and ideophones, and to trace the semantic change of a particular group of ideophones, the shiny ideophones.

Using the Scripta Sinica corpus (Academia Sinica 中央研究院 2015) as our data source, we show that literary Chinese ideophones in the lexical field of LIGHT are highly dynamic in their polysemous semantic structure as they developed through time. Four case studies demonstrate that a levelled approach with attention to diachronic prototype semantics (Geeraerts 1997) reveal different aspects of the nature of ideophones and their meanings:

(6)   a. The meanings of the investigated ideophones tend to be concentrated in prototypical bundles with extensions to fuzzy edges.

      b. Different homophonous lexical items may influence each other in terms of their semantic preference.

      c. Type and token frequency effects influence the entrenchment of certain meanings.

      d. Prototypicality is shown to be transient, from the semasiological perspective as well as from the onomasiological perspective.

Furthermore, the four levels of Mental Spaces, Frames, ICMs or Domains, and Image Schemas - argued to be present in metaphor structure as well (Kövecses 2017) - are unifiable into one bigger framework that confirms the place of ideophones between culture and cognition. This study furthers a comprehensive understanding of the semantics of LIGHT ideophones that can be expanded to other semantic fields. It is only through the long history of Chinese literary works, that we can trace back, and find evidence for the symbolic nature of ideophonic lexicalization.

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The influence of language and its background culture on speakers in constructing L2 self

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The objective of this research is to investigate the assumption that speakers receive the influence from the languages they use and also from the languages' background cultures. It has been said that bilingual speakers of Japanese and English change the way they talk and show their emotions, or sometimes what they say depending on the language they use and therefore their L1 and L2 self-images sometimes differ entirely.

The author collected data through questionnaires on 241 bilingual speakers and in-depth interviews on 20 bilingual speakers with different language proficiency. The author also gathered data from the group of 14 college students that she led to US this summer as a part of Intensive Summer English Program.

The results indicate that the bilingual speakers and learners are influenced both consciously and unconsciously by the language they use as well as by the background culture values of each language. The speaker's language ability and the volume or the strength of the influence that the language gives on the speaker seemed to have no relation.

However, the difference between the female speakers and male speakers could be seen in point of comfortableness regarding how much and how easily they can show their thoughts and emotions with each language.

It has been claimed that the images of ideal L2 self could strongly motivate learners. The author hopes to make the best use of the phenomenon that speakers could change their images depending on the language they use in order to direct Japanese students of English to enjoy their studies from the viewpoint of constructing their preferable new selves in English.

Testing the long-before-short performance preference in Japanese with a Murakami novel

Hing-Yuet Fung and Stephen Matthews

The University of Hong Kong

The long-before-short preference of a head-final language is supported by on-line experiments (Yamashita & Chang 2001). The length-correlated scrambled order of subject, object, and indirect object supports Hawkins' prediction, which suggests that for a head-final language like Japanese, a longer constituent will be produced earlier than a shorter one, to minimize the constituent recognition domain between the first argument and the verb (Hawkins 1994, 2004; Hawkins 2014). This study differs from Yamashita & Chang's by investigating the relative length of the *wo*-suffixed NP and a non-argument constituent, the adverbial phrase. We address Kondo & Yamashita (2011) observation that the verb in Japanese serves more to summarise than to give a road map within the unfolding VP as in English, along their conclusion of a long-before-short performance preference in a spoken corpus of Japanese. The sentences below show the permutable word order of a *wo*-suffixed NP and an adverbial phrase.

Fig 1. Length Differential between 1st and 2nd Constituents
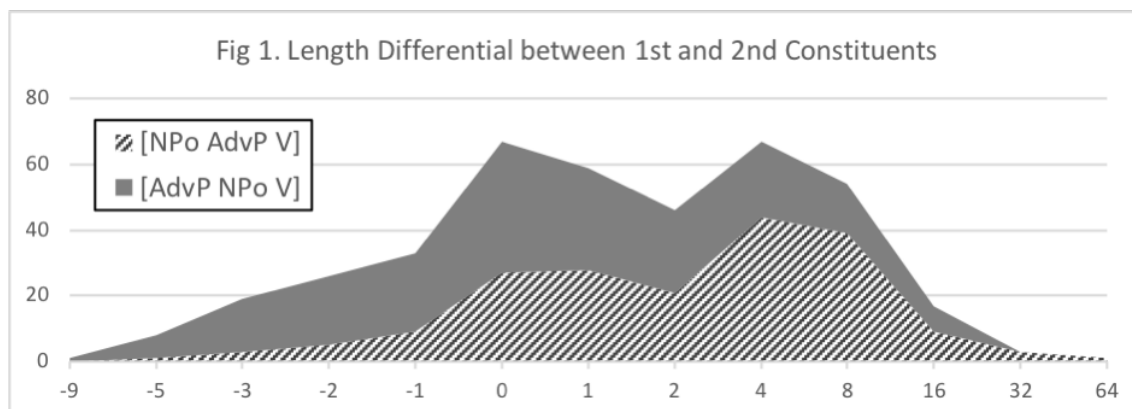
(7) a. その 部分-を　ひとしきり　読む
　　　this　part-wo　for.a.while　read

　　　"read this part for a while"

　　b. ひとしきり　世間話-を　　している
　　　for.a.while　gossip-wo　doing

　　　"gossiping for a while"

The freedom of ordering alternatives under study is confirmed in 401 sentences extracted from Haruki Murakami's novel *Norwegian Wood*, showing a frequency of fifty three percent for a *wo*-phrase-last arrangement, when no other constituents intertwine before the verb is presented. The adverb "for a while" allows either position as in (7). It is observable in our data that certain adverbial phrases are topical and resist scrambling, and they are excluded from our study. The ordering alternations demonstrate consistent volume in growing length differential on a logarithmic scale of base 2, and the two orders remain proportional (Fig 1). Only twenty two percent of the sentences present a short-before-long arrangement, and in these cases the length differential is limited to nine moras at most. A further seventeen percent have equal lengths. In the remaining sentences where the length differential is positive, i.e. the long constituent is presented before the short, the length differential soars as high as 34 moras. The results support Hawkins' prediction that the long-before-short preference is proportional to the differential in length between the two constituents.

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Words in Chanoyu: The lexical Communication in Japanese Tea Ceremony

20 Oct
IV-3
11:40
N100

Yoko Shirasu

Yokohama College of Commerce

Chanoyu, Japanese tea ceremony, is known as the sequence of silent and serene manners to serve tea, because of its respect for its creed 'the less is better.' But in fact more words are used in the communication and hospitality in the tea ceremony than people expected. In this paper, I mainly focus on the words in Chanoyu, and explore its influence on Japanese communication.

The host and guests exchange courtesies and proceed the tea ceremony smoothly. And in the middle of the ceremony they are talking about their utensils and decoration which are full of their hospitality and historical and artistic intelligence. In this presentation, first, I want to give a quick introduction of Chanoyu's history and unique characteristics as a synthetic art, referring to its procedure of a tea party. Secondly, I define what the communication is. And I present the words used in the ceremony to categorize these words into three divisions; the play with words which symbolizes the traditional art, an action of likening one thing to another which we call 'Mitate', and the words of kind consideration which is a key to understand what the Japanese are required to do in their society .

Session V

Relationship between reading acquisition and cognitive abilities in Chinese third-graders

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[2] Osaka Kyoiku University

This study aimed to investigate the relationship between Chinese children's reading acquisition and their cognitive abilities. A total of 140 Chinese third-grade children in Ningbo, Zhejiang, China were assessed for their abilities to read Chinese, as well as their cognitive abilities and nonverbal intelligence. A series of reading tests, including word and non-word reading tests, rapid word and non-word reading tests, as well as a rapid paragraph reading test, were conducted to evaluate the children's reading accuracy and fluency in Chinese. All stimuli were selected or made from textbooks that the participants had studied. Moreover, Rey-Osterrieth Complex Figure Test (ROCFT), Rapid Automatized Naming (RAN), and The Standardized Comprehension Test of Abstract Words (SCTAW) were conducted to examine children's visual cognition, naming speed and receptive vocabulary, respectively. Onset/rime deletion and non-words repetition tests were carried out to examine their phonological awareness. In addition, Raven's Coloured Progressive Matrices (RCPM) was administered to assess children's intellectual maturity.

The children whose RCPM scores were below -1.5 SD were excluded ($n = 7$) from the following analyses. For the exploratory factor analysis, Factor 1 consisted of ROCFT immediate recall (.83) and ROCFT delayed recall (.81), was labelled 'Visual memory'. Factor 2, consisted of ROCFT copy drawing (.60), ROCFT delayed recall (.51), and ROCFT immediate recall (.50), was labelled 'Visual perception'. Factor 3 consisted of onset deletion (.77) was labelled 'Phonological awareness.' Results of multiple regression analyses revealed that visual cognition (β=0.21, p<.05) and phonological awareness ($= 0.19, p < .05$) were significant predictors for word and non-word reading, respectively. Naming speed showed a significant contribution to the rapid reading of words ($= 0.44, p < .001$), non-words ($= 0.41, p < .001$), and paragraphs ($= 0.46, p < .001$).

Visual memory ability is supposed to be important for the acquisition of the visually complicated Chinese orthographies, since visual memory ability was a significant predictor of Chinese word reading. Similar to the finding of Ho and Bryant's study (Ho & Bryant 1997), which found that the performance of rhyme detection correlated with Chinese pseudo-character reading, our study found that phonological awareness affects the performance of Chinese non-word reading. In addition, we found that naming speed, as measured by the RAN test, is not a unique predictor of reading accuracy, whereas naming speed is a robust predictor of reading fluency of words, non-words, and paragraphs. In line with what has been found in alphabetic orthographies and Japanese (e.g., Savage & Frederickson 2005, Haruhara et al. 2011), RAN correlated more strongly with reading fluency than with reading accuracy in Chinese.

Haruhara, Noriko, Akira Uno, Minako Asahi, Masato Kaneko & Noriko Awaya. 2011. Development of reading fluency and cognitive abilities related to reading fluency for normal child development: Fundamental study to evaluate developmental dyslexia. *The Japanese Journal of Logopedics and Phoniatrics* 52(3). 263–270.

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Effects of orthographic N-size and familiarity of neighbors on Kanji-word reading in Japanese children with and without developmental dyslexia

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20 Oct
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13:20
N206

The aim of this study was to clarify reading processing for two-character Kanji compound words in Japanese children with developmental dyslexia. For this aim, we investigated effects of orthographic neighborhood size (hereafter N-size) and familiarity of neighbors on reading accuracies for two-character compound words.

Participants were 145 children without developmental dyslexia (hereafter the control group) and 8 children with developmental dyslexia (hereafter the dyslexia group). They performed two Kanji-word reading aloud tasks. One list of 40 words constituted a crossed 2×2 design in which the first factor was orthographic N-size (high N-size vs. low N-size) and consistency of character-to-sound correspondences (typical vs. atypical). Another list of 40 words constituted a crossed 2×2 design in which the first factor was familiarity of neighbors (high-familiarity neighbor present vs. absent) and consistency of character-to-sound correspondences (typical vs. atypical). In both lists, each condition consisted of 10 words.

Correct rates of the dyslexia group were significantly lower than the control group in all conditions of each reading list. The control group showed a significant N-size effect irrespective of consistency of character-to-sound correspondences, while the dyslexia group showed a significant N-size effect for atypical words but not typical words. There was a significant main effect of familiarity of neighbors in both groups. This effect was inhibitory: reading accuracies of both groups decreased if there was a neighbor whose familiarity was higher than a target word.

Our results differed from previous studies in regular orthographies (e.g., Marinus et al., 2010). Marinus et al. reported that orthographic N-size affects reading accuracy of the control group rather than the dyslexia group, and moreover revealed that frequency of neighbors affects reading accuracy of the dyslexia group rather than the control group, in Dutch. Following the lexical tuning hypothesis, they suggested that orthographic representations of the dyslexia group in Dutch are not (yet) sufficiently specified. We will discuss our results in terms of development of orthographic representations, taking the transparency of orthography into consideration.

Text content and dynamic patterns of 5th grade classroom discourse

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Dialogue plays a crucial role in children's cognitive development (Vygotsky 1978). Classroom discourse hence is important for understanding and leaning in school settings. Recent studies started to look into the patterns and quality of teacher-student and student-student discourse, in text reading context (Chinn, Anderson & Waggoner 2001) and in digital reading environment (Anderson et al. 2001, Shukor et al. 2014). However, the issue of whether and how text content affects classroom discourse has received little attention from researchers. We report a study comparing the patterns of classroom discourse after reading and discussing two types of text content: novel expository text versus common expository text. One decisive difference between these two is whether readers were equipped proper background knowledge to understand the text.

Two 5th grade classes each with 28 students were recruited. Two experienced teachers were trained to teach reading strategies and classroom discussions and they both taught two identical expository texts to their students. The common sense text deals with a dilemma whether one should lie to their parents or not once they receive poor grade from school. The novel text describes the pros and cons of land developing and preserving. Each text went through 2 class sessions with a mixture of whole class and small class discussions. To ensure students have proper knowledge to understand the texts, both classes spent one extra class session in computer lab searching for relevant information about the novel text using key words provided by the teachers.

All the class discourse were digitally recorded, transcribed and then coded by two raters following a scheme developed according our framework of interest. The inter-rater reliability was .81. Sequential analysis was applied to explore the dynamic of discourse patterns with a Z score of 1.96 as the critical value and hence $p < .05$. Some common and distinctive patterns were found for these two texts. In general, simple questions tend to trigger simple answers from others and questions begging explanations tend to elicit more complex responses with explanations. If teachers teach students steps on how to argue then students tend to initiate an argumentation act next and teachers tend to give instructions on how to rebut right after students rebut. More mutual arguments and rebuttal utterances among students for the common sense text assuming they can actively take advantage of their world knowledge. In contrast, teachers give more directions on how to argue and rebut, and explain for the novel text to shape their discussions probably students are struggling with the content knowledge. Theoretical and instructional implications will be discussed.

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Chinn, Clark A., Richard C. Anderson & Martha A. Waggoner. 2001. Patterns of discourse in two kinds of literature discussion. *Reading Research Quarterly* 36(4). 378–411.

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The role of working memory capacity in metaphor and metonymy comprehension in EFL learners' minds: An fMRI study

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The highlight of the current study is that it is the first investigation into analyzing metaphor and metonymy processing for English as a foreign language, EFL, learners. Substantial research has demonstrated neural evidence of left frontal network (e.g., regions of the left inferior frontal gyrus, IFG, middle and superior temporal gyri, MTG and STG) for metaphor processing. Some neuroimaging studies have also pinpointed the correlation between metaphor processing and working memory capacity for, mainly, English native speakers. Adopting event-related functional magnetic resonance imaging (fMRI), the present study examined not only metaphor, but also metonymy of different types (systematic and circumstantial) in contrast to the matched literals in order to characterize metaphorical and metonymic neural correlation as well as to explore their interplay with working memory capacity (WMC) and vocabulary size for English as a foreign language (EFL) learners. Seventeen EFL learners (5 males, 12 females; mean age = 27.11; SD = 4.56) participated in the fMRI experiment. Stimuli consisted of 63 English conversation sets, including one context sentence and one target sentence, created for three conditions: literal, metaphor, and metonymy. Imaging results indicated that circumstantial metonymies involve common regions for figurative language processing (STG and TPL), yet in homologue RH, with lower vocabulary learners. Cuneus was activated as higher span learners resorted to inhibitory control, filtering out irrelevant information. Moreover, in the light of its role in cognitive and behavioral–affective modulation (De Smet, Paquier, Verhoeven, Mariën, 2013), cerebellum may extend its association to figurative language processing. The degree to which bilateral strategies that individuals with larger vocabulary size or higher working memory span resort to or not resort to is differently modulated by subtypes of metonymies. Future implication lies in that learners may require perspective-taking ability and semantic reasoning for imagery mental network.

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L1 pragmatic transfer in L2 topic development: A qualitative approach to EFL context

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[2]Konan University

This study explores L1 pragmatic transfer in L2 topic development, comparing L1 and L2 multi-person discourses. Recent studies on L2 oral performance have been analyzing discourse features from qualitative and statistical approaches (Galaczi 2004, Nakatsuhara 2013). However, little has been known about pragmatic features in L2 discourse. Moreover, to bring the complexities of naturally occurring spoken language use, including L2 discourse, inside the scope of inquiry in Cognitive Linguistics, this study tries to elucidate the connection between the expressions in a discourse, and their information structures as described in Cognitive Grammar (Langacker 2001: 144).

We recorded two discussions, a Japanese debate and an English debate, among six Japanese students and six Taiwanese students (aged 20-30). The twelve participants were divided into two groups, pro and con teams, and the both discussions proceeded based on a debate style without any rehearsal.

The collected data was sorted utterance by utterance based on the classification done in Galaczi (2004); topic expansion of self/other-initiated topics, uptake and expansion of the prior speaker's contributions. As a result, we found out that the three Japanese students developed L2 arguments in the same way as they did during the L1 discussion (1. uptake and expansion of the prior speaker's contribution, 2. topic expansion of self-initiated topics), and that the rest of the three Japanese students failed to develop L2 arguments, even though they were able to elaborate arguments in the L1 discussion. Indeed, it might be natural that EFL students could not elaborate arguments well in L2 discourse. However, the three Japanese students developed L2 arguments in the same way as they did with L1 arguments.

This result suggests that the topic development in L2 context would be scaffolded on the conceptual understanding of argument and persuasiveness in L1 context (Greeno & van de Sande 2007; Nakano 2013). Thus, it could be safe to say that the intersubjective scope of awareness in utterance (Langacker 2014) would vary in context. But further comparative analysis would be necessary for more detailed discussions.

From *No, she does* to *Yes, she does*: On the conceptual changes in the processing of negative yes-no questions of Chinese-English bilinguals

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Negation in English and Mandarin Chinese exhibit a peculiar difference. In response to negative yes-no questions (e.g., *Doesn't she like cats?*), the typical English answers (->*Yes, she does/No, she doesn't*) substantially vary from those in Chinese (->*No, she does/Yes, she doesn't*) (Holmberg 2015). If L1 linguistic patterns influence L2 expression (von Stutterheim 2003), do they also change thinking that goes

beyond overt language use (Athanasopoulos & Chise 2008)? This question is addressed here with two innovative tests with focus on negation. The aim is to explore whether the way in which bilinguals process negative questions changes towards an L2-like pattern in a verbal and non-verbal context.

Chinese-English bilinguals and two monolingual control groups (N=40/group) were tested in a verbal experiment (2.4). The task was to answer positive/negative questions with *yes/no*, in which the critical items were 6 negative questions. Before the verbal experiment, 20 participants from each group were also tested with a nonverbal experiment (press ↑ for agree ↓ for disagree), in which they had to process positive/negative symbols '='/'≠' (2.5). Equation verification is deemed a useful comparable nonverbal context to negative question processing. The analogy between negative question processing and equation verification was achieved by converting a given statement and a corresponding question into two geometric shapes put in an equation, and the absence/presence of the negative particle *n't* is converted into the '='/'≠' symbols.
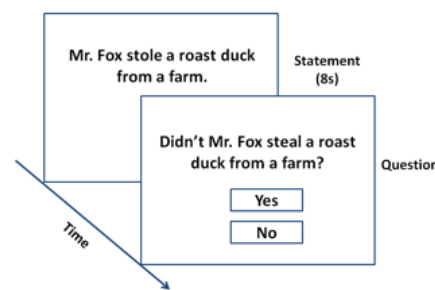
Figure 2.4: Procedure of the verbal experiment
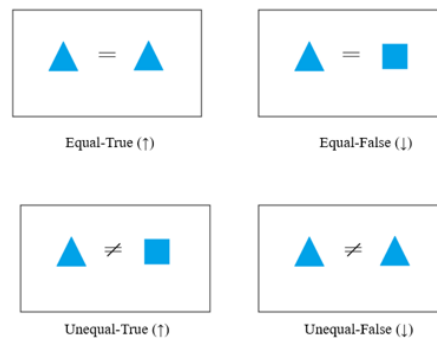
Figure 2.5: Example stimuli in the nonverbal experiment with the corresponding correct responses in the brackets

In the verbal experiment, bilinguals exhibited responses and slowdowns (i.e., reaction time difference between the critical negative questions and the control positive questions) that are in-between English and Chinese monolingual speakers. These results are interpreted as evidence for the approximation of bilinguals to the L2-like access routes to negative information when processing negative questions. In the nonverbal experiment, bilinguals resembled English monolingual speakers in shorter slowdowns compared to Chinese L1 controls, which signals that the way bilinguals answer negative questions in L2 changed their habitual processing of negation in a nonverbal context as well.

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Holmberg, Anders. 2015. *The syntax of yes and no*. Oxford: Oxford Univ. Press.

von Stutterheim, Christiane. 2003. Linguistic structure and information organisation: The case of very advanced learners. In *EUROSLA Yearbook*, vol. 3, 183–206. Amsterdam: John Benjamins.

The influence of cross-linguistic characteristics on reading proficiency for bilinguals

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The dual route cascaded model proposes that word-reading processes follow two pathways where engagement of each pathway depends on the regularity of the word (Coltheart et al. 2001). In English, regular word reading may engage the sub-lexical route where each grapheme is mapped onto a corresponding phoneme, while irregular word reading may rely on the lexical route where pronunciation of the whole word is retrieved from memory. Conversely, in opaque languages like Chinese, the pronunciation of a character is derived from a direct retrieval of phonological representation from memory (Tan et al. 2005), thereby involving more engagement of the lexical route. While many studies have examined how linguistic abilities of readers predict their reading proficiency within a language, less is known about how the language-specific features in one script influence the reading process of the other for bilingual readers. In the current study, we aimed to characterize the cross-language influences on reading proficiency of Chinese-English bilingual readers by investigating how various linguistic abilities in both English and Chinese predicted reading performance in each language. 46 Chinese-English bilinguals (aged 19-28, 36 females) underwent a series of linguistic measures and reading proficiency tasks in English and Chinese. English linguistic measures included general word reading ability, vocabulary, and phonological processing. The Castles and Coltheart Test-2, consisting of regular, irregular, and pseudo single words, was administered as a reading proficiency measure for English. Chinese linguistic measures included general character reading, vocabulary, morphological awareness, and pinyin proficiency. Chinese reading proficiency was measured by a lexical decision task consisting of real-regular (RR), real-irregular (RI), pseudo-regular (PR), and pseudo-irregular (PI) characters. Seven separate hierarchical multiple regression models were used to examine the influence of the various linguistic components on English regular, irregular, and pseudo word reading, as well as Chinese RR, RI, PR, and PI character reading. In each model, predictors were entered in three steps: first, demographic variables (age, nationality) were controlled; second, linguistic measures of the language of the dependent variable (i.e., reading proficiency); third, the linguistic measures of the other language.

In the English regular word model, the second step showed that general English word reading ability was a significant predictor, $R^2 = .70$, $F(2, 43) = 49.25$, $p <$

.001. In the third step, Chinese vocabulary proficiency contributed a significant R^2 change of .036, $R^2 = .73$, $F(3, 42) = 38.20$, $p < .001$, with $\beta = -.20$, $t = -2.36$, $p = .023$. For the English irregular and pseudo word models, only the English linguistic predictors were significant. In the Chinese RR characters model, the second step showed that general character reading proficiency was a significant predictor, $R^2 = .34$, $F(1, 44) = 22.52$, $p < .001$. In the third step, the rapid symbolic naming aspect in English phonological processing contributed a significant $R^2 change of .088$, $R^2 = .43$, $F(2, 43) = 15.96$, $p < .001$, with $\beta = .31$, $t = 2.56$, $p = .014$. For the Chinese RI characters model, only the Chinese linguistic predictors were significant, and neither PI nor PR character models were significant.

For bilingual readers, proficiency with English regular words and Chinese regular characters were each influenced by cross-linguistic abilities: lower proficiency in Chinese vocabulary predicted higher reading proficiency in English regular words; and higher proficiency in English phonological symbolic naming predicted higher reading proficiency in Chinese regular characters. Our results suggest that less familiarity with Chinese characters may result in less engagement of the lexical route, and consequently more engagement of the sub-lexical route that is utilized in English regular word reading. Likewise, better English phonological processing suggests higher proficiency in using the sub-lexical route, which may be beneficial for reading Chinese regular characters. The findings demonstrate cross-language influences, where linguistic abilities in one language modulate the reading process of the other for specific types of words in bilingual readers.

Coltheart, Max, Kathleen Rastle, Conrad Perry, Robyn Langdon & Johannes Ziegler. 2001. DRC: A dual route cascaded model of visual word recognition and reading aloud. *Psychological Review* 108(1). 204–256. https://doi.org/10.1037//0033-295X.108.1.204.

Tan, Li Hai, Angela R. Laird, Karl Li & Peter T. Fox. 2005. Neuroanatomical correlates of phonological processing of Chinese characters and alphabetic words: A meta-analysis. *Human Brain Mapping* 25(1). 83–91. https://doi.org/10.1002/hbm.20134.

Enhancing active reading experience for EFL learners

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[3] Ming Chuan University
[4] National Chiao Tung University

Active reading is a learner-centered learning process where students are actively involved in extensive reading, usually through out of curriculum sources such as online magazines, newspapers, or reports. Extensive reading has long been recognized as a way of enhancing students' reading comprehension. It not only links new vocabulary with learners' prior literacy experience but also enriches students' knowledge with diverse subject topics. Furthermore, online reading resources promote active learning and offer a setting where students can conduct learning at any time and at any place. Active reading is able to promote learners' achievement levels; however, it depends heavily on the quality and suitability of reading sources which are difficult to be judged by learners themselves. In the study, a customizable passage readability assessment system (CARAS) was designed

and developed. CARAS is trained and verified by using 351 reading passages of elementary, intermediate, and high-intermediate levels of GEPT (General English Proficiency Test) old exams from 2005 to 2016, and 80 passages and 72 passages from junior and senior high schools' English textbooks respectively. Next, a databank of 150 online English passages from BBC, National Geographic, and LearnEnglish websites were selected and classified to be equivalent to GEPT elementary, intermediate, and high-intermediate levels by CARAS, which then were verified and edited by 3 English teachers. Thirty students were recruited to judge if passages recommended by CARAS were adequate for their reading levels according to the i+1 hypothesis of Krashen's second language acquisition theory. Each student was given 6 passages, randomly selected by CARAS according to her proficiency level and subjects of interest. The first 3 passages were recommended according to her English proficiency level, whereas the last 3 articles were one level above her proficiency level. Each passage included 3 to 5 short comprehension questions to test a student's understanding of the content. Questionnaire exploring students' attitude toward CARAS was also performed. Results showed that students' average correct answering rate were 91% and 63% for the first 3 and last 3 passages' comprehension questions, respectively. Questionnaire results showed that students' attitudes toward using CARAS for online selection of reading passages were satisfactory.

Reading with pictures in first and second language

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Comics and picture books are often used as reading materials for students with weaker reading ability, such as second language learners, because the addition of visual information is thought to confer advantages in reading comprehension and information recall relative to plain texts. The amount of images and whether they form a connected narrative may influence how comprehension occurs. Additionally, the process of integrating pictorial information with textual information may interact with language status, i.e. first language (L1) or second language (L2). This study investigated the cognitive processes underlying the reading comprehension of short passages accompanied by no picture, disconnected pictures, or connected pictures by adult bilingual Chinese-English readers. Eighty-seven participants were randomly assigned to read three passages in either Chinese or English. The self-paced reading time of each page and short answer comprehension questions after each reading were measured. Data analyses were separately conducted for the two groups using mixed-effects modelling. For L1 reading, results showed that the total reading times for passages in different conditions were the same. For texts accompanied by continuous images, dwell time on texts was significantly shorter than for texts with disconnected or no images. For adults reading in L1 Chinese, there was no difference in accuracy or response time to comprehension questions across the three conditions. Participants reading in L2 English had equal dwell time on texts across conditions, but total reading time increased for texts with accompanying pictures. The accuracy for English texts' reading comprehension questions was higher for texts with continuous pictures compared to texts with disconnected or no pictures, but response time did not differ. Pictorial

information influenced reading in bilingual Chinese-English individuals, but the patterns were clearly different in L1 vs L2 reading. Connected pictures facilitated comprehension efficiency in L1 reading and improved comprehension in L2 reading. The facilitation effect was present in both groups only when pictures appeared in a continuous narrative, and were weaker when the images appeared only occasionally. Results from this study shed light on how texts and non-linguistic visual information are read and understood in bilingual readers, and suggest strategic inclusion of images in the pedagogy of both first and second language learning.

Session VI

Syntactic priming in interactions between a Japanese EFL learner and a native speaker of English

Miwa Morishita[1], Mayumi Kawamura[2] and Yasunari Harada[3]

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[3]Waseda University

The authors are engaged in research activities and educational practices of English language teaching at Japanese universities with several realistic agenda: (1) filling the gap between grammatical and lexical knowledge of English and mastery and performance in real-time interactional tasks on the part of the students, (2) promoting and prompting students to respond to questions and to ask questions appropriate in the context and situation, and (3) enhancing and enriching learner experiences so that students would engage in meaningful and intellectually challenging tasks.

Pickering & Garrod (2004) proposed *alignment theory*, where mutual understanding in communication depends on unconscious, automatic alignment. However, the question of what kinds of learning activities maximize such desirable effects of interactions for improving language proficiency is yet to be clarified and shared among English teachers in Japan. In psycholinguistic studies, syntactic priming (Bock 1986) is often used to investigate mechanisms of language processing. Since syntactic priming can be found as a tendency where listeners use the same structure as the one speaker produced (Levelt & Kelter 1982), it can also be used for learning sentence structures and/or accelerating sentence processing (McDonough 2006, Morishita 2013).

In this study, we report on interactions in English between Japanese EFL learners and a native speaker of English, focusing on what we consider as cases of syntactic priming, based on transcriptions of those oral interactions. We collected data of dialogues between a total of 31 Japanese EFL learners (university first and second year students) and an exchange student from University of Leeds. The Japanese students' average TOEIC score was 409.

A Japanese student and the exchange student sat face to face on sofas and the whole dialogue was recorded on a video camera and an IC recorder. The first author gave the following instruction to the Japanese student in Japanese before the conversation: "You will talk to each other through questions and answers in turn. Ms. X (the exchange student's name) will ask you a question, to which you will answer. Then you will ask her a question, which does not necessarily have to be related to Ms. X's previous question." Each dialogue lasted for approximately 15 to 20 minutes. Although 20 questions were prepared for the exchange student to ask, she was instructed to use them flexibly, considering each student's English proficiency and the flow of dialogue. Findings so far show that the Japanese students, regardless of their English proficiency, tended to use limited kinds of *wh*-questions, which made the interaction rather awkward, as use of the full range of *wh*-questions is indispensable in smooth and efficient interactions. We will further analyze the data in both qualitative and quantitative approaches and explain some more details of our findings in the presentation.

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Levelt, Willem J. M. & Stephanie Kelter. 1982. Surface form and memory in question answering. *Cognitive Psychology* 14. 78–106.

McDonough, Kim. 2006. Interaction and syntactic priming: English L2 speakers' production of dative constructions. *Studies in Second Language Acquisition* 28(2). 179–207.

Morishita, Miwa. 2013. The effects of interaction on syntactic priming: A psycholinguistic study using scripted interaction tasks. *Annual Review of English Language Education in Japan* 24. 141–156.

Pickering, Martin J. & Simon Garrod. 2004. Toward a mechanistic psychology of dialogue. *Behavioral and Brain Sciences* 27. 169–225.

How do L2 Learners interpret the unconventional expressions?: An experimental study of the construction-based processing

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Basement A

This study aims to investigate how we make use of construction schemas to interpret an unconventional expression focusing on the degree of entrenchment of them. In usage-based linguistics, it is widely acknowledged that construction schemas are exploited to comprehend a sentence as well as to produce. Taylor (1992, 2012) puts forward that when interpreting unconventional expressions, we set up analogies between the expression and already established uses. In other words, linguistic interpretation can be analyzed as finding construction schemas applicable to the expression we are trying to understand. In this paper, through a case study of the unconventional expression CUT THE X, we demonstrate how one makes use of conventional uses entrenched in his/her knowledge to interpret unconventional expressions.

We conducted two experiments. In these experiments, 10 conventional sentences and 7 unconventional sentences were used. Before the experiments, we checked each sentence was surely estimated as conventional or unconventional by 39 native speakers of English. In Experiment 1, 30 Japanese learners of English were asked to describe the situations represented by 10 conventional English sentences, and to indicate the certainty about their answers, because we would like to estimate how strongly each of the sentences is entrenched in the participants' knowledge. In Experiment 2, reading 7 unconventional sentences, the same participants were asked to choose, from the conventional sentences used in Experiment 1, what they felt to be the most similar to each unconventional sentence and to explain the reason.

The results show that when the participants interpret the unconventional expressions, they use not only higher-level construction schema but lower-level construction schema. There were some unconventional expressions judged to be similar to both weaker- and stronger-entrenched conventional expressions. When the participants chose weaker-entrenched conventional expressions (e.g., He cut the scene) as the similar expression to unconventional expressions (e.g., He cut the name), they should use the higher-level CUT THE X construction schema. From the reasons of the judgment they gave in the experiment, it can be said that they tried to understand the expression through the higher-level "shorten" construction schema which has already established.

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On the other hand, when the participants judged unconventional expressions were similar to stronger-entrenched conventional expressions, the process of analogy should be different. Participants tended to answer that an unconventional expression "He cut the name" was similar to the stronger-entrenched conventional expression "He cut his nails" because they thought the action of cutting something short was metaphorically close to meaning of cutting the name. In this case, they dynamically extend the conventional expression ad hoc to interpret a novel composition. Our study provides an empirical evidence to illustrate the comprehension-process model based on construction schemas. The method employed here is applicable to examine the specific details of our creative interpretation.

The degree of learners' exposure to the target language affects pre-verbal prediction in L2

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This study investigates whether Japanese learners of English make a pre-verbal prediction during the processing of relative clauses (RCs) and whether the degree of exposure to English affects their predictive processing mechanism. It is proposed that while reading English RCs, native speakers predict the RC verb would be transitive, which suggests that they predict verb transitivity before reading the actual verb (Omaki et al. 2015). However, it is unclear whether second language (L2) learners' processing mechanism also includes the same/similar pre-verbal prediction system, and whether the degree of exposure to the L2 affects such predictive processing or not.

We conducted a self-paced reading experiment on 12 Japanese learners of English in English-speaking country (High Exposure) and 17 in non-English-speaking country (Low Exposure) to address these issues. Their English proficiency of reading and grammatical skills were not statistically different ($p > .10$), but the High Exposure group stayed longer in English-speaking countries than the Low Exposure group (High Exposure: 2.87 yrs.; Low Exposure: 0.21 yrs.; $p < .0001$).

The experiment was designed to examine whether they predict verb transitivity (i.e., whether a verb takes direct object noun phrase (NP)) and/or argument structure (i.e., whether a verb takes a complement or not), since given that early theta-role assignment could motivate Japanese speakers' pre-verbal prediction in their first language (Aoshima, Phillips & Weinberg 2004), it is plausible that Japanese speakers predict argument structure of verbs, not transitivity. Experimental sentences were created by manipulating Verb Type (Trans, Intrans w/ Compl, Intrans w/o Compl) and Gap (Gap, Non-Gap) like (1).

(1) a. Intrans w/o Compl/Gap: The driver who the millionaire would <u>walk</u> with ____ …
    b. Intrans w/o Compl/Non-Gap: The driver of the millionaire would <u>walk</u> with …
    c. Intrans w/ Compl/Gap: The driver who the millionaire would <u>depend</u> on ____ …
    d. Intrans w/ Compl/Non-Gap: The driver of the millionaire would <u>depend</u> on …
    e. Trans/Gap: The driver who the millionaire would <u>bring</u> ____ …
    f. Trans/Non-Gap: The driver who the millionaire would <u>bring</u> …

RTs for the verbs were analyzed by using a linear mixed-effects model with Helmert Contrast coding; the first contrast compared Trans to Intrans w/ Compl

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(Transitivity) and the second compared the mean of Trans and Intrans w/ Compl to Intrans w/o Compl (Argument Structure). For the High Exposure group, an interaction of Argument Structure and Gap was significant ($\beta = -176.89$, $t = -2.058$), reflecting the larger RT difference in Intrans w/o Compl conditions than in the other conditions. The longer RTs for the verb in (1a) suggest that the participants predicted the verbs that take a complement and were surprised by the appearance of the verbs that do not take a complement. In contrast, for the Low Exposure group, an interaction of Transitivity and Gap was significant ($\beta = 337.16$, $t = 3.542$); RTs for transitive verbs were longer in Gap condition than in Non-Gap condition than those for the verbs in Intrans w/ Compl condition. This indicates that the participants in the Low Exposure group did not predict verb information and started gap-filling processing only after the verbs.

The results suggest that Japanese learners in English-speaking countries predict the argument structure of forthcoming verbs, but that those who in non-English-speaking countries do not predict verbs' information. L2 learners make a pre-verbal prediction, but the degree of exposure affects it.

Aoshima, Sachiko, Colin Phillips & Amy Weinberg. 2004. Processing filler-gap dependencies in a head-final language. *Journal of Memory and Language* 51(1). 23–54. `https://doi.org/10.1016/j.jml.2004.03.001`.
Omaki, Akira, Ellen F. Lau, Imogen Davidson White, Myles L. Dakan, Aaron Apple & Colin Phillips. 2015. Hyper-active gap filling. *Frontiers in Psychology* 06. `https://doi.org/10.3389/fpsyg.2015.00384`.

Syllable retrieval precedes sub-syllabic encoding in Cantonese spoken word production

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Two experiments were conducted to investigate the time course of syllabic and sub-syllabic encoding in Cantonese spoken word production by using the picture-word interference task. Cantonese-speaking participants were asked to name individually presented pictures aloud and ignore an auditory word distractor. The targets in Experiment 1 were consonant-vowel(CV)- structured mono-syllabic words or di-syllabic words beginning with a CV syllable. The targets and distractors were either phonologically related or unrelated. The phonologically related distractor was either a CV or a CVC (consonant-vowel-consonant) syllable that overlapped with the target two identical word-initial phonemes. The two types of phonologically related distractors had the same degree of segmental overlap with their target only that the CV- structured distractor also shared with the target the same atonal syllable (i.e., Full Syllable Overlap) but not for the CVC-structured distractor (i.e., Segmental Overlap Only). Relative to the unrelated control, Full Syllable Overlap distractors facilitated naming in all stimuli onset asynchronies (SOAs) (-175, 0, or +175 ms) whereas Segmental Overlap Only distractors exhibited facilitation only at 0-ms and +175-ms SOAs. Experiment 2 adopted a similar design, however, the target syllables were CVC-structured. The phonological distractor was either a CVC or CV syllable that shared two word-initial phonemes with the target. Comparable facilitation effects were observed in all SOAs irrespective of the syllabic-structure of

the distractor. These results indicated that an earlier priming effect was observed with full syllable overlap than sub-syllabic overlap when the degree of segmental overlap was held constant (Experiment 1). The earlier syllable priming observed in Experiment 1 could not be attributed to the effect of syllabic-structure (Experiment 2), thereby suggesting that the syllable unit is important in Cantonese and is retrieved earlier than sub-syllabic components during phonological encoding.

Linking L2 production and orthographic transcription

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Previous research on the second language (L2) acquisition of the Korean three-way stop contrast, jointly cued by VOT and f0, has shown wide acoustic variability across learners in production (Chang 2010, Holliday 2015). Particularly among native (L1) Mandarin speakers, it has been shown that some learners confuse the lax and aspirated stops, others confuse the lax and tense stops, while other learners confuse or distinguish all three. The aim of the current study was to link L2 learners' productions of Korean stops with their mental representations of the L2 categories via an orthographic transcription task, to ascertain whether the variability might stem from differences in L1-L2 phonological mappings.

The subjects were 13 novice (1 year) and 13 advanced (3+ years) L1 Mandarin college students majoring in Korean at a Chinese university. Subjects produced 64 stop-initial Korean words. After an intervening perception test, subjects were given a list of 45 Korean words in Korean orthography and asked to transcribe them in pinyin, including tone marks, to represent the Mandarin pronunciation that was as close as possible to the target Korean pronunciation. Confusion between categories in production was measured using linear discriminant analysis (LDA) in a two-dimensional VOT-f0 space. Orthographic transcription responses were coded according to the aspiration represented in pinyin: transcriptions using <b, d, g> were coded as unaspirated, and those using <p, t, k> as aspirated.

An LDA coefficient of 0.8 for a category pair (lax-tense, lax-aspirated, tense-aspirated) was chosen as the cutoff point below which the learner was interpreted as not robustly differentiating between the two categories in production. Every novice learner had exactly one pair whose LDA coefficient was below 0.8, indicating that all of the novice learners were able to differentiate between two of the Korean stops, but all of them failed to differentiate between all three. Novice learners' transcription results were highly predictive of confusion in production: if a novice learner transcribed Korean lax stops as unaspirated <b, d, g> in pinyin, the same learner would confuse lax and tense stops in production (producing both like Mandarin aspirated stops). Conversely, a learner who transcribed Korean lax stops as aspirated <p, t, k> confused lax and aspirated stops in production. The production errors of all novice learners could be predicted in this way, suggesting that novice learners' production errors, at least with respect to the three-way stop contrast in Korean, might be attributable to L1-L2 phonological mappings.

The results for the advanced learners were quite different. Only one advanced learner had an LDA coefficient less than 0.8, suggesting that the advanced learners were mostly able to robustly differentiate all three Korean stops in production. However, the advanced learners' orthographic transcriptions were by and large

not predictive of their productions. Seven of the advanced learners transcribed Korean lax stops almost exclusively as unaspirated <b, d g>, but only one these learners confused lax and tense stops in production. The remaining six advanced learners did not transcribe Korean lax stops categorically, showing that they did not think all Korean lax stops mapped onto a single Mandarin category.

While most research on the L2 acquisition of new phonological contrasts has focused on acoustic measures in both production and perception, the current study has demonstrated that simply asking about orthographic representation can shed light on novice (at least) L2 production errors.

Chang, C. B. 2010. The implementation of laryngeal contrast in Korean as a Second Language. In Susumu Kuno, Ik-Hwan Lee, John Whitman, Joan Maling, Young-Se Kang, Peter Sells, Hyang-Sook Sohn & Youngjun Jang (eds.), *Harvard Studies in Korean Linguistics XIII*, 91–104. Seoul: Hanshin.

Holliday, Jeffrey J. 2015. A longitudinal study of the second language acquisition of a three-way stop contrast. *Journal of Phonetics* 50. 1–14.

A preliminary study on the respiratory muscular and respiratory control of Chinese JFL, utilizing 4 RST and a respiratory mask

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[2] Tokyo University of Technology

This research aims to investigate the correlation between muscular movements and respiration (cf. Williams 1995, Saida 2017) when Chinese learners of Japanese as a Foreign Language (CJFL) read two types of Japanese short stories, compared to Japanese speakers (JL1). Chinese and Japanese are linguistically and typologically different. Japanese is a mora-timed and pitch-accented language while Chinese is a syllable-timed and tone language. Hence, we utilized four thin-wired respiratory strain-gauge transducers (4RST) to measure upper- and lower-chest and upper- and lower-abdominal respiratory muscle movements and a two-way bulb mask to measure inspiratory and expiratory control respectively, while they read these texts. Previous studies utilizing 2RST, e.g., Isei-Jaakkola (2011), Isei-Jaakkola & Hirose (2014), proved that different language speakers (L1) use different muscular control; Isei-Jaakkola, Nagano-Madsen & Ochi (2017) showed that the lung age of JL1 varied significantly while Isei-Jaakkola, Ochi & Hirose (2018) presented that posture, either sitting or standing, affect both respiratory control and muscular movements during both utterance and non-utterance.

For this test, two Chinese male and female university students (aged 21 years) who are majoring in Japanese (N1 level) uttered the stories five times in Japanese and Chinese in a sitting position. Thus, we acquired 40 dataset (2 subjects x 5 repetitions x 2 stories x 2 languages) for muscle movements and 40 respiratory data and compared their statistical analyses with those of JL1 (10 subjects). Results revealed that: (1) significant difference was found in CJFL, who utilize the lower abdomen more than JL1, implying that this is affected by CL1's speech; (2) CJFL appear to employ longer speech between pauses as a breath than JL1 and thus may reset respiratory and chest muscle control simultaneously. This may indicate that L2 has less regular control in respiration and accordingly respiratory muscles. Further investigation is required to confirm these results by adding more CJFL subjects.

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Confidence through understanding: The effects of pronunciation training on EFL learners' motivation and aptitude

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A common problem that beginning learners of English have is that they do not understand what they are hearing in English even when they know all of the words. Often this is because they are listening at the word level and do not have enough exposure to or awareness of prosody. This is especially prevalent in Japan, as accurate articulation of English sounds is taught less and less after the junior high level in Japan. This lack of training affects the students' ability to understand what they hear and then communicate effectively. Typically, they rely on the few words they do hear and then fill in the gaps between with guesses.

This presentation will describe a two-year blended-learning curriculum for engineering majors at a Japanese university. Students entering the program are typically false beginners and often indicate negative attitudes toward learning English. As such, they struggle to communicate even at the word level in English and thus, remain silent in class. This curriculum focuses on opportunities exposing students to the target language though sound, with special attention to pronunciation and prosody. This helps bring students away from relying on "katakana" English, which most of them have come to rely on in their English study.

The course attempts to reach these goals through training the students to hear and articulate English in a natural manner. That said, the course does not attempt to force the students to adopt a native English accent. Rather, the course is designed to help students better understand and anticipate the sounds of English as it is naturally used by fluent native and non-native speakers, and then help them to use that knowledge to speak English with more confidence.

The present study will address the results of this approach through both quantitative and qualitative data. The quantitative data consists of CASEC test scores

taken before and after the course, read-aloud-tests, and other class activities. This data will be used to demonstrate the effectiveness of this approach in terms of language acquisition. The qualitative data, on the other hand, will focus mostly on the effect of this training on student motivation and attitudes.

Session VII

Null-subjects and bilingual first language acquisition

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Observing the development of functional categories (FCs) such as Determiner, Agreement, Tense and Complementizer helps language acquisition researchers understand cognitive development during early language acquisition. Children try to figure out which feature is 'on or off' for their respective languages. It does not predict the absence of features with respect to FCs. Two variants of the Continuity hypothesis (Pinker 1984) have tried to explain the acquisition of grammar in children with respect to FCs. According to the Strong Continuity Hypothesis (adopted by Hyams 1994), Universal Grammar (UG) is accessible to a child from the onset of acquisition. The grammatical representation in a child is identical to that of an adult grammar. The mistakes seen in child grammar represent the choices available in UG. Children are seen to produce null subject sentences in a non-null subject language, for example, in English. This is to be seen as one option available in UG –null subject languages (Hyams 1994). Processing limitations, gradual learning of vocabulary and exposure to real world are a few factors that account for the differences between child and adult language. The underlying assumption of the Structure Building Hypothesis is that FCs are not accessible during the onset of language acquisition and that they are subject to biological maturation. On the contrary, scholars like Pinker (1984), Poeppel & Wexler (1993), Hoekstra & Hyams (1996) are proponents of an alternative account, the Strong Continuity Hypothesis, due to the discontinuous nature of the two-tiered hypothesis. The basic principles of the Strong Continuity Hypothesis are that both the UG principles and FCs are fully available for children in their initial speech and that the early child grammar is not such that only the Lexical Categories (Nouns, Verbs, Adjectives and Prepositions/ Postpositions) are available in the beginning, and are later followed by FCs (Agreement, Tense or Determiner).

The occurrence of null subjects is explored using the spontaneous speech samples collected from a simultaneous bilingual infant, 'E', between the ages 1;10 and 2;11, speaking the languages English, an Indo-European language where subjects are mandatory and Malayalam, a topic-drop language, agglutinative in nature, and belonging to the Dravidian family of languages. Although Malayalam is a morphologically rich, agglutinative language, the verbs do not agree with person, number and gender. The phenomenon of topic-drop allow subjects to be dropped in a context, i.e., no phonological realization of a subject NP is required within a given situation. Null subjects are observed in E's speech samples from the very first recordings as in (i) and (ii). By 2;4, E's data is seen to have increased instances of overt subjects in Malayalam when compared to the data from earlier speech samples.

This work attempts to make use of the underspecification of I theory to explain how the phenomenon of null subjects situates within the context of a non-null subject and a topic-drop languages (English and Malayalam, respectively). Examples (8):

(8) a. *vara:mo?*   1;10.9, Malayalam)
         come-POT-Q

         'Can (you) come.'

    b. *laiŋgis   tipi   (1;11.10,   English)*
        like-PREP this-DET sleep-PRT

        '(She is) sleeping like this.'

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Early two-word utterances in Japanese child language

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Merge plays an important role in the evolution of humans as well as in the growth of language in child acquisition (Chomsky 2005). Recently MERGE is rephrased as the only operation defined by Universal Grammar (Chomsky, Gallego & Ott 2017), however, it is not clear whether children MERGE in their early utterances. This paper analyzes natural data in Japanese child language to argue whether the early two words are the result of MERGE. We also examine English child data and ASL by apes (Washoe in Gardner & Gardner 1969, Koko in Patterson & Cohn 1990).

As pointed out by Shirai, Shirai & Furuta (2000), Fujimoto (2008), etc. Japanese children start combining a word + a Sentence Final Particles (SFP) early, as in (9).

(9) *Ryo: nai-ne (non-exist(adj)-Tag)*

     '(the train is) not (in the book)' (Ryo:1;19.05)

However, SPFs are not part of MERGE: the operation MERGE is limited to the narrow syntactic derivation, and the informational functions are properties of configurations (Chomsky, Gallego & Ott 2017). The question is how children produce (9). Two explanations are possible in the literature: (9) is a full clause with null elements, since children are equipped with a full hierarchical structure (Poeppel & Wexler 1993); and the two words are "successive single-word utterances" (Bloom 1973). We propose that (1) is an instance of decomposition process, based on data in CHILDES (MacWhinney 2000). We analyzed three children's (Aki, Ryo, Nanami) data in Miyata (2004), and Miyata & Nishisawa (2009).

To understand two-word utterances, we review the analyses of one-word utterances. Some claim that one-word is holophrastic, and it is equivalent to one utterance (sentence) for adults in some sense (Dore 1975, Greenfield 1978, Barrett 1982,

etc.). All single words cannot be holophrastic, however. Nelson (1973) collected children's early 50 words and reported that 13% of the words are used to evoke an action, and 65%, referential, i.e., 65% of them can be non-holophrastic. Japanese children may also express action words as well as referential words. When a word is pronounced with a raising intonation, it can be an action word (request). Later, a request is expressed with two words, as in X+ka? and X+no?: children combine a word plus a SPF. We argue whether children add a SPF or they decompose a question into two. We assume that it is an instance of decomposition, i.e., a top-down influence on lower level. A top-down learning strategy may be available for infants. According to Emberson (2015), at 6 months the infants are capable of exhibiting rapid, flexible top-down influence on lower level sensory regions.

Back to Japanese children, the constructions of early 2 words utterances are: topic/subject +predicate, NP+top, NP/V+SPF, i.e., they express topic-focus constructions and the speaker-listener territory (cf. Kamio 1994), which are not the result of MERGE. Since Japanese lack overt Agreement and EPP, it is hard to determine when children start MERGE. We propose that recursions can be the key, and among those, we assume that CP recursion can be evidence of MERGE. Children's early utterances anchor to the speech time. When children produce embedded/subordinate clauses, they combine two events in one utterance, and they distinguish the speech time and the reference time. Gorillas may be able to describe events in the past (cf. https://www.koko.org), however, embedding would not be possible. CP recursion are observed in English and Japanese children, but not in Apes (who can combine signs). When children start producing embedding structures, it is a sign of MERGE which is only available for US, not for animals.

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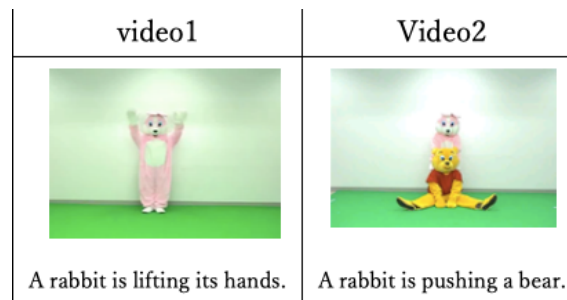
Figure 2.6: An example of videos

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How do Japanese Deaf and Hard-of-Hearing students infer novel verb meanings?

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Keio University umi

1. Introduction Japanese children can infer a new verb's meaning using the argument structure of a sentence and particles as a cue. However, a verb may have many meanings. Japanese sentences can be ambiguous between intransitive and transitive senses. Preceding study found that, if Japanese 3-year-olds heard a sentence which only contained a subject and a made-up verb (e.g. *Usagi-ga hekutteiru* 'A rabbit is *heku*-ing'), most of them matched the oral sentence with a picture in which a rabbit was acting alone, rather than choosing a picture of a rabbit interacting with a bear. On the other hand, the selection of either picture by 4-year-olds was at a chance level, which indicates that they were aware that the sentence can be used both situations.

Children with congenital Hard-of-Hearing(HH) children tend to have language difficulties. Particularly, Japanese children with these difficulties often fail to acquire case-marking particles. This study aims to investigate whether or not Japanese children with congenital hearing loss can infer the meaning of verbs based on the presence of case-marking particles and they can notice the ambiguous meaning of intransitive verb.

2. Method Subjects. Grade 1-6 HH students (N =72, age range = 6 to 12 years). Materials. There were 3 kind of sentences (total:12). Each of them contained a made-up verb and the arguments usagi 'rabbit' and/or kuma 'bear'. These arguments were marked with either a nominative marker ga (i.e. a subject) or an accusative marker o (i.e. an object) . Procedure. The experiment was conducted face to face with each subject. The subjects were given a sentence (Table 1) and were shown three video clips (Figure 1). The subjects were asked to match the sentence with a video clip that showed the "correct" action.

3. Result Although both video1 and 2 was correct answer at the ambiguous sentence, we code video1 as "correct" in this study. With regard to the transitive and intransitive sentences, there was a positive correspondence between the age of
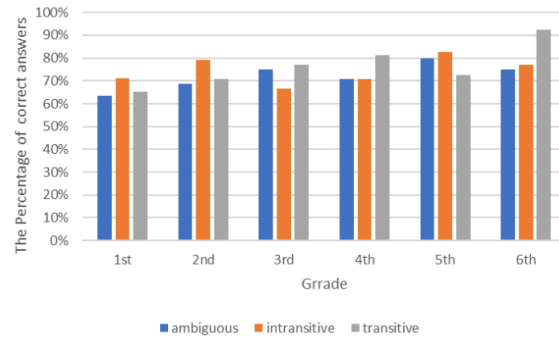
Figure 2.7: Percentage of correctly assigned sentences by category

Figure 2.8: Example sentences

	Sentence	Video1	Video2
Ambiguous sentence	Usagi(a rabbit) ga(particle) nekeru(novel verb)	A rabbit is lifting its hands.	A rabbit is pushing a bear.
Intransitive sentence	Usagi(a rabbit) ga(particle) nekeru(novel verb)	A rabbit is breathing deeply.	A bear is tapping a rabbit's shoulder.
Transitive sentence	Usagi(a rabbit) wo(particle) nekeru(novel verb)	A rabbit is jumping.	A bear is turning a rabbit.

students and the number of students who chose the appropriate video clip across all age groups. On the other hand, with regards to the ambiguous sentence, there was an increase in the number of students who chose a video clip which showed a rabbit doing the action alone, as age increased (Figure2).

4. Discussion The ability for Congenital HH students to infer the meaning of new verbs using particles increased with age. In contrast to their hearing peers, HH students did not trend toward selecting ambiguous sentences at chance level as grade increased. HH students may have inferred the meaning of new verbs by particles and argument structure of a sentence alone and did not consider the potential ambiguity of the intransitive sentence structure due to argument omission in Japanese, unlike their hearing counterparts.

Writing in character learning among Chinese children: from an embodied cognition perspective

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In the present study, 144 second-grade and 150 fourth-grade Chinese children were recruited. The influence of embodied cognition on Chinese character learning was investigated by examining the training effects of four conditions with different degrees of embodied cognition. The training conditions included 1) control (the whole character); 2) visual (children were presented with a video to show them how a given Chinese character is written); 3) air writing (children were asked to follow the video and write the Chinese character with their index finger in the air); 4) handwriting (i.e., real handwriting, children were asked to write the Chinese character with a pen on paper). The presenting time of these four conditions was equal, and children of group 2, 3, and 4 were presented with the same video. Participants were randomly arranged into four conditions by grade, after controlling their age, non-verbal intelligence, and performance of writing, working memory,

Chinese character reading, and visual processing. Each child was asked to learn ten Chinese characters with extremely low frequency, after two minutes distractors, they were asked to read out these ten characters. The results showed that generally, fourth graders learned more characters than second graders, children in the air writing and handwriting group have learned more characters than ones in the control and visual group, but there was no significant difference between the air writing and handwriting group, as well as the control and visual group. For second graders, the training effects of the air writing and handwriting were significantly better than the control group, whereas they were not different with the visual group. For fourth graders, the training effects of air writing and handwriting were significantly better than the control group and visual group. However, there was no significant difference between air writing and handwriting group, neither among second graders nor fourth graders. These results helped us better understand the underlying mechanism of the association between writing and character reading in Chinese.

Impact of short-term study abroad and internship programs on participants' multiple intelligence measures

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Despite their limited length, short-term study abroad programs, internships and externships during undergraduate years sometimes bring about noticeable changes within the participants' mind set, attitude and motivation for communication and interaction with others, or perception of the world around them. These are often more noticeable than changes in foreign language proficiency, achievements and performance of particular skill sets or expertise and academic understanding of particular subject matters.

The authors are interested in developing criteria and rubrics for measuring whether or to what extent a given study abroad, internship or externship program is successful in terms of those possible changes in the participants on the one hand and for measuring how successful such programs are relative to their objectives. In the meanwhile, we are also interested in finding out what existing tests, measures and metrics might help us examine the impact of the programs on the participants. In this presentation, we focus on one of our candidate measures and discuss pre- and post-test scores for measuring multiple intelligences (MI) regarding one particular study abroad program conducted at a university in Japan.

In the theory of multiple intelligences, proposed originally by Gardner (1983), human intelligence is conceived of as having eight facets: musical-rhythmic, visual-spatial, verbal-linguistic, logical-mathematical, bodily-kinesthetic, visual-spatial, interpersonal, intrapersonal, and naturalistic. 88 undergraduate students in the second author's university in Kansai area in Japan answered a questionnaire based on MI theory twice, before and after a study abroad program for a semester (4 to 5 months). The questionnaire consisted of 40 items related to the eight intelligences, each of which students responded on a scale of 1 to 4.

The results show that the students' scores were low in verbal-linguistic, logical-mathematical and naturalistic intelligences, mediocre in musical-rhythmic and visual-spatial intelligences and relatively high in bodily-kinesthetic, interpersonal and intrapersonal intelligences in both the pre- and the post-tests. Only the verbal-linguistic intelligence score marginally improved among them. We further investigated possible relationships between the above scores and the changes in the students' English proficiency. A delayed test should also be considered to examine if the changes coming out of the study abroad program are temporary or persistent.

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Discourse processing of the Frontier and Pastoral poetry with machine learning

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The poetry created in Tang Dynasty is praised as one of the most precious heritages of Chinese culture. The Tang poetry is rich in various factions, among which the Frontier poetry and the Pastoral poetry are two famous ones.

The Frontier poetry and the Pastoral poetry are frequently mentioned in the poetry research articles. The former is regarded as describing mainly the frontier scenery, while the latter is usually known for its rural scenery. In this study, however, we propose a model based on opening features, trying to illustrate different profiles of preferences beyond the level of word categories.

This study carries out a machine learning of relational patterning. For each feature, the language structure in every occurrence is annotated and matched for pattern reduction with the machine learning techniques developed in the IASL. The results of the comparisons of the pattern distribution between different works may help to present their unique styles, which are hardly perceived intuitively. It will have potential applications to stylistic researches of serially-presented creative works.

The effect of the request using honorifics on the hearer's acceptance and favorability to the speaker

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As the degree of imposition of requests increases, the speaker's verbal politeness increases. The purpose of this study was to examine the socio-emotional effects of the increase in politeness. A total of 160 utterances with different levels of request imposition (Request Imposition: low / high) were selected through a preliminary questionnaire, and were used as experimental stimuli. These request utterances contained a sentence-final ending which is respectful or less-respectful (Politeness: less polite / polite). The endings were manipulated by the Korean honorifics, *Hay-style* or *Hayyo-style.* In the experiment participants were instructed to

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decide whether they accept each request, which was presented on the screen with a speaker's picture. As a result, the acceptance rate for the polite requests was higher than for the less polite requests. Moreover, the effect of using the polite form was bigger when the imposition of the request was low. The affective reaction to the less polite requests was more negative than to the polite requests. In addition, favorability to the speaker using polite expressions increased. Results of the present experiment imply that the usage of Korean honorifics on the request is pragmatically effective and socio-emotionally beneficial such as making a nice impression on interlocutors.

Metaphorical framing in postcolonial Hong Kong political speeches (1997-2017): The role of mapping principles in corpus-based metaphor analysis

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Metaphorical frames can be used to shape public discourse by presenting and defining specific issues, as they contain both linguistic and conceptual content (Burgers, Konijn & Steen 2016). This paper adopts the Conceptual Mapping Model approach (Ahrens 2010) to analyse the mapping principles of metaphors with an attempt to find out the ways in which metaphors are used as framing strategies in political discourse. Four research questions are addressed:

(10) a. What are common source domains found in the corpus of postcolonial Hong Kong political speeches?

b. What do these common source domains map to in terms of target domains?

c. What are the mapping principles between these target and source domains?

d. How do the patterns of the mapping principles reflect the ways in which metaphors are used in the framing of different societal issues?

In order to examine these questions, we independently compiled an English corpus of political speeches ranging from 1 July 1997 to 1 July 2017 by Hong Kong senior officials (http://www.info.gov.hk/isd/speech/sensp.htm). The corpus contains 1,241 speeches by 11 politicians in the three highest principal official positions in Hong Kong: 496 speeches by the Chief Secretary for Administration, 427 speeches by the Financial Secretary and 318 speeches by the Secretary for Justice. A preliminary bottom-up analysis was conducted in 116 randomly selected speeches.

5,962 metaphorical instances were coded in total. Frequent source domains were found to be BUILDING, LIVING ORGANISM, JOURNEY, PHYSICAL OBJECT, BUSINESS, WAR and SPORT. In terms of the target domains associated with these source domains, SOCIAL ISSUES, ECONOMIC ISSUES and POLITICAL ISSUES are the most commonly found. Patterns of the frequent target and source domain mappings show that: 1) the target domain of SOCIAL ISSUES in Hong Kong is discussed in terms of BUSINESS and WAR source domains more frequently than expected by

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chance; 2) the target domain of ECONOMIC ISSUES is discussed in terms of LIVING ORGANISM, PHYSICAL OBJECT and SPORT source domains more frequently than expected by chance; 3) the target domain of POLITICAL ISSUES are discussed in terms of BUILDING and JOURNEY source domains more frequently than expected by chance.

We further examined the mapping principles between one same source domain (WAR) and different target domains (SOCIAL ISSUES, ECONOMIC ISSUES, and PO-LITICAL ISSUES). The results demonstrate that the source domain of WAR primar-ily maps the concepts of 'violence', 'offence' and 'victim' to the target domain of SOCIAL ISSUES; the source WAR primarily maps the concepts of 'strategy', 'fore-front' and 'turmoil' to the target domain of ECONOMIC ISSUES; the source WAR primarily maps the concepts of 'protecting', 'safeguarding' and 'defending' to the target domain of POLITICAL ISSUES. In addition, results from the evaluations on the metaphorical keywords indicate that overall social issues in Hong Kong are ad-dressed in more negative ways while economic and political issues are discussed in more positive ways. These results reveal that different aspects of the WAR source domain have been selected by Hong Kong politicians in the framing of social, eco-nomic and political issues.

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Reviewing cognitive theories of language as a descriptive framework for "Ecological Semantics"

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The field of Cognitive Linguistics has been directed toward so-called "the third-generation" of cognitive science, in which the human cognition is distributed and situated in the environment (Yamanashi 2000: 265-266). Some cognitive linguists, however, has been regarded linguistic meaning as the processing in inner thoughts or mental representation. Langacker, for example, claims that the meaning of lan-guage is ultimately "neurological activity" in our brain (Langacker 2008: 31). Such a point of view is summarized as "cognitivism" or "representationism" in linguistic studies. Conversely, some linguists have distinctively claimed that language is not a code (Kravchenko 2007, Steffensen 2011) and should be treated as one part of the interactive activities between an actor and the environment.

The basis for such an ecological research of language or "ecolinguistics" (Stef-fensen & Fill 2014) and to sublate cognitive and ecological view of language, the relationship between the perception of affordances (Gibson 1979) and linguistic expressions must be clarified, as well as confirming the precise sense of the claim that the central function of language lies in realizing values in the environment (cf.

Reed 1996). In this paper, we will look upon three important aspects: (i) As mentioned above, linguistic expressions do not represent nor convey speaker's mental/inner states or thoughts, but "highlight" (cf. Fillmore 1982, Langacker 2008) certain affordances between agents and objects or events. (ii) We perceive affordances (ecological meanings or values) with the assistance of "designing process". With the term designing process, we describe an organizing process of affordances which are hidden for manifesting to the user (agent). For example, thiols are used to make natural gas, which is odorless, detectable for humans. In that case, the attachment of thiol is a designing process and thiol itself is a "signifier" (Norman 2010) which makes natural gas detectable for humans. Language is a part of such various signifiers to detect affordances. Language does not convey the meaning or value, as Norman stressed the difference between a signifier and an affordance to which it indicates, but highlight one of them as a signifier. (iii) Meanings are designed socially and culturally to be realized independent to the existence of linguistic expressions. We can thus detect and realize them without linguistic expression, especially for skilled people. Linguistic expressions are exploited to facilitate communication among people with different levels of detecting skill.

From this view, descriptive theories in cognitive linguistics such as Frame Semantics (Fillmore 1976, 1982, 1985) can be interpreted ecologically and employed as descriptions of the relationship between signifier and the structure of (social) affordances. Semantic frames are directly perceived by both the speaker and hearer, as the frames exist ecologically, socially and culturally designed beforehand. In this case, the phrase is a design or a signifier realizing the affordance of GOODS and MONEY, which is normally invisible, to make it detectable. Thus, semantic research on cognitive linguistics, including cognitive grammar (Langacker 2008), can be exploited for linguistic studies on affordances and their designing process, but just an inner cognitive processing instead. Finally, as Steffensen & Alwin have emphasized (Steffensen & Fill 2014: 19), we will argue that this ecological view can offer a critical study on concerning empowerment of minority language communities, as we see language as a system of signifier which reside in the ecologically real world, between human and the environment (Nash & Mühlhäusler 2014).

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Yes! We want to survive: Our primary desire is the main force of embodied simulation

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In this study, we conducted two experiments with things associated with survival. Our participants' reaction time (RT) was measured and statistically tested. It shows they are much concerned with survival, attention to which is far stronger than the action-sentence compatibility effect (ACE) (Glenberg & Kaschak 2002).

Since the milestone work of Lakoff & Johnson (1980), we came to know metaphors are no longer peripheral but major elements to produce and process language and thought. Many researchers now work on metaphors and embodied cognition or simulation (Gibbs 2002, 2008, Bergen 2012 among many). Our experiences through all kinds of modalities help us understand more abstract things and affect our behavior (Gibbs 2013 and others). Of these experiences or actions, the ultimate driving force is species preservation –the instinct of surviving to pass DNA onto a next generation –by default.

In our study, all participants participated in two experiments. They were asked to read sentences and look at images which followed on a computer screen. Their task was to determine whether an image was introduced in the sentence and press a Yes or No button. All sentences were Japanese and they all were about ownership, either acquisition or loss, of a life-supporting or -threatening object, e.g., *I found water in the middle of a desert*; *Poison was removed from my body*. The Yes/No button was placed at either end of a keyboard, separate from the computer, and the keyboard was flipped after the first experiment was finished to counterbalance the participants' arm movement. Participants' RT was then tested by within-subject ANOVA's.

What we found was quite interesting. There was only a single case of ACE observed –participants' arm movement toward themselves was significantly ($p < 0.05$) faster with sentences containing the idea of acquisition than that of loss. On the other hand, there were many cases apparently concerning the principle of species preservation. Participants' RT was significantly ($p < 0.05$) faster when they moved their arms away from themselves when the objects involved were life-threatening rather than -supporting. However, when life-supporting objects are involved, their RT was significantly ($p < 0.05$) faster for acquisition than for loss. Thus, our primary desire as a creature is the fundamental force of embodied cognition. We will further argue, among those desires, concrete things are more basic than abstract, as we use conceptual metaphors.

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A cognitive approach to the multimodal metaphors in Chinese anti-corruption political cartoons

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Since the publication of *Multimodal Metaphor* (Forceville & Urios-Aparisi, 2009), multimodal metaphor has become a thriving research direction in the field of metaphor studies, and has been applied to a host of socio-cultural issues (c.f. Bounegru & Forceville, 2011; Lan & Zuo, 2016; Lin & Chiang, 2015;Yu, 2009, 2011). This study continues to beef up the multimodal metaphor application research, concerning Mainland China's anti-corruption campaign that has gained its full momentum after President Xi assumed office in 2013, with a particular focus on the way multimodal metaphors are employed to propagate the anti-corruption ideas.

347 multimodal metaphors, according to the multimodal metaphor detection criteria (Forceville, 2008, 2014), were extracted from 683 Chinese anti-corruption political cartoons which were downloaded from "Newscartoon", one of the biggest and most influential Chinese cartoons searching website in Mainland China.

It was observed that the 347 multimodal metaphors are respectively derived from three conceptual metaphors: HIGHER LEVEL THING/CONCEPT IS LOWER LEVEL THING, LOWER LEVEL THING/CONCEPT IS HIGHER LEVEL THING and ACTION IS EXERTION OF FORCE, which can be categorized into two metaphor systems: Great-Chain-of-Being metaphors (Kövecses, 2010; Lakoff & Turner, 1989) and Event Structure metaphors (Kövecses, 2010; Lakoff, 1993). The multimodal metaphors targeted seven major concepts: BRIBERY MONEY, CORRUPT OFFICIAL, CORRUPTION, REGULATION, CRACKING-DOWN, INCORRUPTNESS and INCORRUPT OFFICIAL. Grounded on the three conceptual metaphors, the multimodal metaphors mapped either negative or positive values unto the seven concepts, putting them into a "self-side versus other-side" dichotomic categorization. The multimodal metaphors were used to eulogize the self-side concepts such as INCORRUPT OFFICIAL, INCORRUPTNESS, REGULATION and CRACKING-DOWN, whereas to satirize other-side concepts like BRIBERY MONEY, CORRUPT OFFICIAL, and CORRUPTION, giving full expression to the strategy of self-legitimization and other-delegitimization (Charteris-Black, 2005; Chilton, 2004).

The study thus proposed the general way multimodal metaphors in anti-corruption political discourses are used to transmit anti-corruption ideas as follows: governed by the conceptual metaphors in thought, the multimodal metaphors in the semiotic level work to perform the strategy of self-legitimization and other-delegitimization, which, in turn, completes the promotion of the anti-corruption ideas.

The study represents as an attempt for a balanced consideration of the conceptual and the social dimensions of metaphor, as it took a multimodal metaphor

perspective that is based on cognitive metaphor approach, to probe a heatedly-discussed social event. In addition, the study aids to uncover the common metaphor practice exercised by Chinese anti-corruption publicity materials, political cartoons in the case of the present study, thus enabling the Chinese public to better access the ongoing anti-corruption movement, which is seemingly remote from their daily life.

Poster session 1

Production of Neutral Tone in Taiwan Mandarin

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Considering about the tonal features of Chinese, several studies have been contributed into this field. Chao (1956, 1968) demonstrated the four FULL TONES of Standard Chinese (SC) according to a five-point scale, and further noted them as HIGH TONE (first tone or T1, in citation form as "55:"), HIGH-RISING TONE (second tone or T2, as "35:"), LOW-DIPPING TONE (third tone or T3, as "214:"), and HIGH-FALLING TONE (fourth tone or T4, as "51:"). However, researchers found a different tonal representation in Taiwan Mandarin (TM): T1 as "44", T2 as "323", T3 as "312", and T4 as "42" (Fon & Chiang 1999); Deng, Shi & Lü (2008) also revealed a similar pattern that T1 as "44", T2 as "23", T3 as "21", and T4 as "51".

Distinction between the pitch of SC and TM led to pitch differences as followed by neutral tones in disyllabic words. Being regarded as toneless with no diacritic tonal mark (Lin 2007), neutral tone might vary according to the tone of preceding syllable (Chao 1956). In SC, researchers had generalized the pattern to be that (i) after high register tones (i.e. T1, T2 and T4), the pitch of neutral tone is low or falling; and (ii) after the low register T3, the pitch of neutral tone is high or rising (Cheng 1973:56, Yip 2002:182, Lin 2007:99). On the other hand, the pitch of neutral tone in TM was generally noted as mid-low in disyllabic words, and the pitch stayed low as it followed the low register tone, T3 (Huang 2012).

In current study, we aimed to observe whether there would be any difference between the pitch of neutral tone as it followed FULL TONES respectively in TM. To elicit the production of neutral tone, ten participants were asked to read through a list of sentences containing either of the three suffixes: adverbs[de], durative marker [zhe], and perfective marker [le], each preceded by four FULL TONE words respectively, and the four tokens of words composed a GROUP. The disyllabic tokens were extended to two GROUPS combining with four tones respectively, and were filled into a fixed sentence pattern to avoid word final weakening effect.

The results showed that the pitch differed significantly between neutral tone and FULL TONES except for the T3 condition- no significant difference was found between the preceding T3 words and the neutral ones. Besides, we found that the pitch of neutral tone would be highest after T2, second-high after T1, then the one followed T3, and the pitch appeared to be the lowest one after T4.

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Creative Metaphor in Chinese Video Ads

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Multimodal Metaphor Theory has motivated increasing studies on how conventional metaphors and Conceptual Metaphors (CM) structure the multi-elements and make an effort in reasoning the argumentation in video ads from a CL perspective (Forceville 2007, Sweetser 2017, Urios-Aparisi 2009, Yu 2011, Zhang & Xu 2018. However, the attention to the creative metaphor from a CL perspective is comparatively limited. The creative metaphor is a fundamental type of metaphor, which is the results of novel uses of conceptual resources (Lakoff & Turner 1989). Understanding creative metaphor in video ads, on the one hand, provides the complementary insights for the exploration of how CMs structure multimodal communication; on the other hand, is helpful in exploring how metaphor exerts an influence on viewers, as the creative metaphor is a potent advertising strategy. Although the roles that metaphor play in promoting the product have been summarized as a "structuring element" which carries the central claim of the ad and a "fleeting element" which is "used in support, or in addition, of claims made by other means" (Forceville 2008: 23), it remains underexplored that how the content of metaphor (i.e. the target and the source) relates to these roles. It is scant to only have a sketchy overview through analyses of individual ads.

This study specifies the uses of creative metaphor and explores the association between product types and different uses by analysing 279 creative metaphors from a CL perspective. These metaphors were identified from a corpus of 108 Chinese metaphorical video ads, which was built by stratified random sampling. The product type, including tangible products and intangible products, was considered in the strata. Results showed that there were three major uses of metaphor in video ads: (a) to build a central claim about the product; (b) to support the central claim by providing sub-mappings; (c) to build a scenario where the product is the solution or an approach. The three uses were labelled as central metaphors, supporting metaphors, and fleeting metaphors, respectively. Central metaphors usually involved the product as the target or the source, directly. The target and source of supporting metaphors were closely relevant to the target and source in the central metaphor. Fleeting metaphors, however, usually did not involve the product as the target or source, but appeared in a scenario of a practical problem to be resolved or a scenario of pleasurable benefits that attract viewers. At the end of the scenario, the product appeared to be the solution of the problem or the underlying approach to the benefits. The association between uses and product types was examined by Chi-Square Test of Independence. Statistical results indicated a significant relationship, $\chi^2 = (2, N = 279) = 17.33$, $p < .001$, Cramer's $V = .25$. The effect size revealed a moderate tendency (Cohen 1988). Specifically, fleeting metaphors were used proportionally more frequent than expected for intangible products but the opposite for tangible products. In contrast, central metaphors were distributed more frequent than expected for tangible products rather than intangible products. There was no strong tendency for the frequency of supporting metaphor regarding product type. The different tendencies of using metaphors for different types

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Language change across 3000 Years: A survey on Chinese *su* 素

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19 Oct
POSTER
SESSION 1
14:20
NO. 3

This paper presents the evolution of a Chinese word *su* 素 across 3000 years of history.

Previous studies on language change usually focus on a smaller or non-sequential time scale. Croft (2008), for example, looks at the colloquial data of different speakers and provides a three-phase language evolution model. Yet, this model applies only to the short-term tendency. Targeting written language, Molina (2005) studies semantic change of English SORE, and finds one major shift from emotional to bodily suffering since the time of old English. This finding, however, only discovers one major shift because of the relatively short history of the English language. Past studies of word meanings in Mandarin discuss mainly about word meanings in modern Chinese, with only a small portion in ancient Chinese. This is unfortunate, for Chinese has more than 3000 years of development. Therefore, more studies of the long-term diachronic shifts are required, and Mandarin could be one excellent subject of study.

A corpus-based analysis is applied. To explain language change in regards to historical contents, this research covers both word meanings and lexical structures in different times. In order to target different periods of Chinese history, four national corpora are used. The data, as a result, covers from the oldest poetry, *Shijing* 《詩經》, to modern Chinese.

There are three major conclusions of this study:

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(11)   a.   Evolution of word meanings, for Su 素, are largely determined by its several shifts of prototypical senses.

      b.   Syntactic Categories and Productive Compound Construction are two main indexes of Su's change in meaning.

      c.   Cultural and social factors of Su 素 determine the general trend of word sense change.

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Better than native: Tone language experience enhances second language English stress perception in Cantonese-English bilinguals

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Native-like performance in a second language (L2) is the ultimate goal of L2 learning. However, no study has reported that L2 learners perform better than natives on L2 speech perception. Here, we demonstrate that Cantonese-English bilinguals perform better than native English listeners on English lexical stress perception. In English, stressed syllables are louder, longer, and higher-pitched than unstressed syllables. Cantonese does not use lexical stress, but does have a complex lexical tone system, with pitch used to define the tones. In experiments that included manipulations of acoustic, phonotactic, and lexical cues, we tested Cantonese-English bilinguals and native English speakers on their abilities to discriminate English lexical stress. When the pitch cue to stress was present, Cantonese-English bilingual listeners outperformed native English listeners across all phonotactic/lexical conditions. The performance gap expanded when lexical information was included. The findings highlight the facilitative effect of Cantonese tone language experience on English stress perception.

Speech-gesture integration in semantic processing

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The study investigates how the brain processes self-adaptors, emblems, and iconic gestures along with speech. The three types of gestures give rise to a continuum of semantic distinctions in relation to the accompanying speech. The overall N400 component occurred between 500 and 800 msec after the simultaneous gesture and speech onsets. In comparison to the speech-only condition, the reduced N400 evidenced the facilitation effect of iconic gestures at the centro-parietal sites. The meaningful yet non-speech-related emblems elicited enhanced N400s at the left frontal-parietal sites; the meaningless self- adaptors produced the largest N400 effect over the scalp at the frontal-parietal sites. Self-adaptors had produced a larger negativity of N400 than emblems did at the centro-parietal regions. The results evidence the automatic integration of gesture and speech, and the diverse influence of gesture on processing. Only iconic gestures facilitate the semantic integration with speech. For a linguistic meaning to integrate with a semantically-unrelated emblem is less effortful than with a self-adaptor, suggesting that the processing of conventionalized meanings proceeds more readily than the processing of a meaningless gesture occurring at the same time with speech.

Polish swear words in context: Derivatives of "fuck"

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The main aim of this paper is to show how originally neutral word *pierdolić* – "to talk nonsense" in Polish - made its way to become extensively used swear word nowadays, meaning "to fuck" (in most contexts). It is especially interesting because by using its derivatives by simple affixation, an average Polish person can create verbs referring to nearly everything in our lives, such as drinking, falling, making mistakes, beating someone up, getting fired from work etc. It thus comes as no surprise that the word *pierdolić*, thanks to its universality, became so popular in contemporary Polish language. The first question is why *pierdolić* became vulgar from etymological point of view and in what contexts it is used. Second, is it not the case that Poles (especially young people) are overusing it. Probable answers to solve these issues may be found in National Corpus of Polish which seem to provide reliable data on *pierdolić* usage (context) and frequency.

Discrimination of note durations in musical Mmeter and phonological awareness in Chinese reading difficulties: A preliminary study

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Increasing evidence has demonstrated the relationship between musical rhythmic perception and reading in English-speaking children with and without reading difficulties (RD). Similar to processing of musical rhythm, phonological processing, which is a fundamental element to reading development, involves segmenting serial sound sequences into small units. With evidence showing the importance of phonological awareness in Chinese reading development and the similarity of syllable structure between Chinese and English, this study sets out to investigate whether sensitivity of musical meter could predict phonological awareness in Chinese-speaking children.

Three groups of participants with normal intelligence quotient (IQ) were recruited, including twenty-eight children with RD (mean age = 11), and twenty-eight age-matched [CA (mean age =11)] and reading-level-matched [RL (mean age = 9)] controls respectively. All 78 participants completed two phonological tasks (tone awareness and rhyme oddity test) and a musical meter task, assessing the perception sensitivity of musical meter with various note durations.

The results showed significant main effects of group on tone awareness, $F(2, 77) = 21.707$, $p < .001$, rhyme awareness, $F(2, 77) = 12.857$, $p < .001$. The post-hoc tests (Tukey), compared mean performance by group, showed that the RD group performed significantly more poorly than the CA controls in both phonological awareness tests. Also, the RD group performed significantly worse than the controls in the metric task ($t(1, 53) = 1.78$, $p = .04$, one-tailed). Partial correlations controlling for age and rhyme awareness was significantly correlated with musical metrical perception, suggesting a relationship between musical metrical sensitivity and phonological awareness, $r = .250$, $p = .034$.

This study has demonstrated that children with RD were poor at the discrimination of rhythmic patterns compounded by diverse note value durations. This perceptual problem was also reflected by their poor phonological awareness (an understanding of rhythm in speech). A potential account for the correlation reported in this study is that musical rhythmic processing and rhythm awareness in speech may share an underlying processing mechanism. Rhyming characteristic would keep the writing to be read in harmony, and a rhyme-organized structure could help the audience to predict the upcoming signal. As a result, we suggest that the inclusion of musical rhythm activity in remediation curricula for children with RD might be a good way to enhance their phonological skills and eventually may further improve their reading abilities.

Developmental changes of the semantic radical on lexical processing in third graders, sixth graders, and college students

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Previous studies on reading have shown the importance of the semantic radicals in understanding the cognitive mechanisms of lexical processing. However, it is still unclear about the cognitive accounts of developmental changes of the semantic radical on lexical processing, including the sublexical and the neighborhood size account. In the present study, we addressed this issue by recruiting participants from different ages, including third graders, sixth graders and college students. The participants were tested using the lexical decision task. They had to decide whether a visual symbol was a real Chinese character. Frequency (high, low) and radical combinability (high, low) were independently varied to study lexical processing. There were two main results. First, a significant frequency effect was found across three age groups during the lexical decision task, suggesting that lexical access was involved in the task for participants. Second, for the third graders, there was a significant effect on radical combinability effect, with better sensitivity performance on characters with high combinability. This finding suggests that third graders may rely more on the knowledge of the sub-lexical component (i.e., semantic radical) within a character to facilitate their lexical decision judgments. This result can be explained by the bi-directional activation model, using the interactive activation of sublexical and lexical information during lexical processing. In contrast, there was no significant effect on radical combinability in both the sixth graders and the college students. To conclude, this finding suggests developmental changes from a focus on radical components to a focus on whole characters during lexical processing.

The neural correlates of semantic processing in proficient Mandarin Chinese learners

Chia-Ho Lai, Shu-Kai Hsieh, Chia-Lin Lee, Lily I-Wen Su, Te-Hsin Liu, Chiarung Lu, I-Ni Tsai and Tai-Li Chou
National Taiwan University

Acquiring a second language can be difficult for an adult learner especially when the linguistic characteristics of the second language are extremely different from the first language. For alphabetic-based Indo-European language speakers, learning Mandarin Chinese as their second language may take more efforts on processing orthographic information in meaning comprehension. However, some adult learners can still have high proficiencies in reading and using Mandarin Chinese. The aim of the present study was to use functional magnetic resonance imaging (fMRI) to investigate the underlying neural correlates of semantic processing in these highly proficient Mandarin Chinese learners. Twenty-six Mandarin Chinese native speakers (L1 group, age = 24.6 years old, $SD = 3.1$) and 24 highly proficient Mandarin Chinese learners (L2 group, age = 25.5 years old, $SD = 3.7$) participated in the study. In the scanner, participants were asked to decide whether two written Chinese characters were related in meaning. Using orthographically

similar pairs as the control condition, semantic-related pairs produced greater activation in the left fusiform gyrus in the L2 group as compared to the L1 group, suggesting that the L2 group rely more on visual information processing. Also, using semantic-unrelated pairs as the control condition, semantic-related pairs had greater activation in the right hemisphere including the right supramarginal gyrus and right lingual gyrus, suggesting the integration of visual-spatial information to make judgments. In contrast, the L1 group showed greater activation in the left hemisphere including the superior temporal gyrus as compared to the L2 group, suggesting the use of semantic knowledge to make judgments. The present study demonstrated that, compared to the native speakers, the highly proficient Mandarin Chinese learners had more demands on visual-spatial integration to Chinese characters, which is related to greater engagement of the right hemisphere, during semantic processing.

Completely relevant: An examination of completive aspect marker =*anga* in Paiwan

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The clitic morpheme =*anga* in Paiwan, a Formosan language spoken in southern Taiwan, has only received brief attention from linguists to this date. Ferrell lists =*anga* as a "non-independent morpheme" and provides a definition of "certainly, truly doing" for =*anga* and one of "definitely (emphatic)" for its variant =*anga*ta (Ferrell 1982:13). Egli categorizes =*anga* as a particle that "nuances the sense/meaning of phrases and sentences" (Egli 1990:164) and provides examples that demonstrate different functions of emphasis and intention. Early & Whitehorn similarly list definitions of "certainty" or =*anga* and "emphatic certainty" for =*anga*ta, but classifies them as aspect suffixes, but still simply gloss all occurrences of =*anga*(ta) in their texts as "indeed" (Early & Whitehorn 2003:574).

The most recent reference grammar (Chang 2006:227) instead classifies =*anga* as a "completive aspect marker", effectively relocating it from an emphatic function to an aspectual function, without relating this meaning to the previously identified roles mentioned above. We are thus left with a gap in our knowledge and understanding of a highly frequent and salient term, and perhaps also of the wider notion of aspect in Paiwan as a whole.

Using a corpus-based approach, this paper shows that =*anga* not only marks the completion of events, achievements and states, but also stresses the relevance of prior discourse context —a function which distinguishes it from the marker *na=*, a clitic that seems to serve a similar purpose at first sight, but instead takes on a role as a perfective or past marker. The difference can be observed in examples (1-3), with (1-2) taken the 15th story in Early & Whitehorn's *One Hundred Paiwan Texts* (2003), and (3) from the 11th story.

(12) a. *qau tjuqtjuq-en tiamadju a   na=q<em>ereng   i-tjua   ɬiv*
           so   pound-PF   3PL.NOM LNK PAST-<AF>lie.down LOC-there cave

           nua qatsiɬay.
           GEN stone

           "Those who were lying in the rock cave were crushed."

b. *matsay=anga tiamadju a   ma-puɬat.*
AF.die=ANGA 3PL.NOM LNK NUM-all

"They all died."

c. *qau ma-ɬia=nga,   manu k<em>ɬang a   ma-ma-zangiɬ-an*
so   STAT-dawn=ANGA then <AF>know NOM STAT-STAT-chief-NMLZ

    tu   uzai a   na=matsay a   tsau tsau.
    OBL there NOM PAST-AF.die LNK RED being

"Next day the chief heard that someone had died." (Literally: "It became dawn, and the chief knew that there was a dead person")

In these brief examples (1-2), it can be seen that while *na=* denotes the perfectiveness of an action in the past, *=anga* functions to connect the event from the previous sentence and its resulting inchoative state. In (3), *=anga* invokes a change of state, but *na=* simply indicates the boundedness of an event. Entangling the functions of these two clitics is a not easy but nevertheless necessary step for a deeper understanding of the discourse-driven mechanics of these markers in Paiwan and other Formosan or Austronesian languages.

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Neural changes associated with semantic processing in aged schizophrenia

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It is long been known that individuals with schizophrenia are involved in deficits on language abilities. Accumulated studies have reported aberrant neural functions during semantic processing in individuals with schizophrenia. However, little is known about age-related changes in neural underpinnings of the semantic network in aged schizophrenia. Using functional magnetic resonance imaging (fMRI), we examined neural correlates of semantic processing in younger and older adults with schizophrenia as compared to matched healthy controls. The sample consisted of 28 younger adults with schizophrenia (aged 23-25, mean = 24.03, SD = 0.85, 13 females), 13 older adults with schizophrenia (aged 48-59, mean = 52.18, SD = 3.89, 4 females), 26 younger healthy controls (aged 22-25, mean = 24.05, SD = 0.86, 12 females), and 12 older healthy controls (aged 49-65, mean = 54.5, SD = 4.96, 6 females). Participants were scanned while doing a semantic judgement task that had two visual Chinese characters sequentially presented. They had to determine whether the two presented characters were related in meaning. First of all, we investigated the normal aging process by examining the differences between younger and older controls. Our results demonstrated that older controls showed

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greater activation in the left inferior frontal gyrus (LIFG) and reduced activation in the basal ganglia (BG) as compared to younger controls. Moreover, we examined the neural activity in aged schizophrenia by evaluating the differences between patients with schizophrenia and matched controls. Results showed that younger patients had reduced activation in the BG as compared to younger controls, and older patients showed reduced activation in the LIFG relative to older controls. Overall, in normal aging, we suggest an impaired initial subcortical processing for semantic judgments in the BG, which is responsible for cortical initiation of language, thereby leading to engage more in subsequent cortical processing in the LIFG to retrieve semantic knowledge. Also, older patients may have disrupted semantic retrieval in aging because they fail to rely on more LIFG activity as compared to healthy older controls. The findings imply not only different functional organizations but also different aging profiles of the semantic system between adults with schizophrenia and healthy adults.

Life Participation and Cognition: Perspectives of People with Residual Aphasia and their Care Partners in Taiwan

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As an increased awareness of patient-centered outcomes in health care, life participation of people with aphasia has become an important issue on quality of life. Life participation focuses on patient's re-engagement in life and achievements. People with residual aphasia (PWRA) recruited in this study are the individuals with a total average score 11.41 based on the Concise Chinese Aphasia Test (max average score per category =12). There is a lack of information on PWRA's self-report related to their life participation and cognition in Taiwan. The purpose of the study was to explore life participation and cognitive abilities in PWRA and examine the perspectives of PWRA and their care partners in regards to PWRA's life participation and cognitive abilities.

Six adults with residual aphasia and their care partners were recruited. Three measures were selected for the purpose of the study including the Assessment of Living with Aphasia-Revised (ALA-R) for self-reported life participation, the Behavioural Assessment of Dysexecutive Syndrome DEX Questionnaire (BADSDEX) for self-reported cognition, and the Concise Chinese Aphasia Test for aphasia severity. An exact agreement analysis between PWRA and their care partners (number of concordant responses divided by total number of ratings) and descriptive data analysis were employed.

The results showed that, despite of their minor language difficulties, PWRA's actual involvements in activities, life roles, and relationships in daily life were overall affected (self-rated average score of 3.02 on a five-point rating scale ranged from 0 to 4). Their cognitive abilities on inhibition, intentionality, executive memory and affect were affected (self-rated average score of 2.44 using the same scale). Particularly, the ability to create and maintain goal-related behavior (intentionality) had the lowest self-rated score among the four cognitive domains (M=2.03). Comparing the ratings of life participation and cognitive abilities between PWRA and care

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partners, the agreement on cognitive ability was lower (60.83%) than that on their life participation (81.25%). The agreement gap between PWRA and their care partners is likely to have an impact on the lives of both parties. A larger sample size is warranted for generalizability of these findings in the future.

A case study on the multi-faceted verb *tǎo* 討 in Mandarin Chinese

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The present study investigates the polysemous nature of the verb '*tǎo*' 討 in Mandarin Chinese, and provides an insight to the issue of polysemy. This study adopts a corpus-based, frame-related, constructional approach, which combines the framework of Prototype theory (Rosch 1975), Frame Semantics (Fillmore 1982) and Construction Grammar (Goldberg 1995), to probe into the syntactic and semantic nature of '*tǎo*' 討 in terms of the participant constructions of the verb. With a close corpus examination of the syntactic and collocation distribution, the semantic of '*tǎo*' 討 can be clearly defined.

Recent studies have shown the significance of frequency and collocation in the development of language structures. A lexical item may be polysemous in different contexts, and people are seldom aware of its related senses. This can be ascribed to its multiple and related meanings that have been entrenched to certain degree, and people take those different meanings for granted. Among these related senses, some are more prototypical than others, and some are in peripheral position. To explain the interrelation among these multiple meanings, we must take etymology into account. We will observe the ways *tǎo* 討 is used as a part of some constructions and give our detailed lexical analysis. This case study focuses on the collocations and constructions of the verb *tǎo* 討 whose prominent meaning blurs the distinction between its natural and established meaning, and demands reconsideration. Methodologically, the verbs '*tǎo*' 討 are analyzed according to the linguistic period of their formation. All the data comes from Sinica and CCL Corpus.

The problem surrounding the origin and early development of the verb '*tǎo*' 討 which as yet lacks any satisfactory explanation is solved in this study. The verb '*tǎo*' 討 brings us to a number of important questions: (1) What is the original meaning of the verb '*tǎo*' 討? In other words, when did the verb '*tǎo*' 討 come into being? Following on from this is another question: (2) What are the characteristics of the verb '*tǎo*' 討 in "討 X" construction? (3) What does the "討 X" construction imply according to the collected data? This study provides a comprehensive analysis for the word formation patterns of early stages of the verb '*tǎo*' 討 and its extensions.

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Cross-position semantic priming effect on reversible Chinese compound words

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The reversible Chinese compound word is a rather special case for researchers to examine the interactive lexical processes between two different semantic representations with the same orthographic characters. For example, whereas the reversible Chinese compound word "領帶" (necktie) and its transposed form "帶領" (lead) have quite different meanings, both of them share exactly the same two Chinese characters "領" and "帶". The two meanings for some reversible Chinese word pairs are synonymous (e.g., "適合" and "合適"), but they are quite different in some other cases (e.g., "領帶" and "帶領"). According to Taft et al. (1999), readers responded slower to reversible Chinese compound words than to non-reversible control words in the lexical decision task, suggesting the possible competition between the two semantic representations. However, no previous study has directly examined such competition between two possible semantic representations with semantic tasks of effects. The purpose of the present study thus was to examine Taft's competition hypothesis by investigating the cross-position semantic priming effect between two different meanings of the reversible Chinese compound words with the lexical decision task. For the target word "隊長" (captain), we obtained the semantic priming effect with the prime "領帶" (necktie), which has a reversibly paired word "帶領" (lead), supporting the competition account proposed by Taft et al. (1999). None of the current Chinese compound word recognition models could successfully account for the cross-position semantic priming effect between two different semantic representations of the reversible Chinese compound word pairs (e.g., "領帶" and "帶領") found in the present study. The positional coding of the two characters in a Chinese compound word was thus suggested for developing future Chinese compound word recognition models.

Developmental effects on transparency and consistency of semantic: Processing to Chinese characters in second to fifth graders

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Past research has shown that children tend to rely on sublexical processing during semantic processing to Chinese characters. As children grow older, they turn to count less on sublexical processing but more on lexical processing. However, little is known about the development trend toward lexical processing in proficient readers. Moreover, it is unknown about age-related differences in the relationship between sublexical and lexical processing during semantic judgments. This study thus addressed this issue by introducing two factors. One was semantic transparency (i.e. the extent of semantic relation between the semantic radical and the whole character) for sublexical processing. The other was semantic consistency (i.e. the extent to which a semantic radical reliably represented the meaning of a character) for lexical processing. The present study used a cross-sectional design to study 27 children. They were divided into two age groups: the younger group (10

second and third graders) and the older group (17 fourth, fifth and sixth graders). Semantic transparency (high, low) and semantic consistency (high, low) were orthogonally manipulated. The child participants were asked to fulfill the semantic categorization task, judging whether the target characters were a member of a semantic category. The results showed a significant transparency effect on sensitivity (d') both in the younger group and the older group. Moreover, there was a significant consistency effect on sensitivity (d') in the older group, but not in the younger group. Taken together, our findings suggest that the development of semantic processing is associated with age-related changes from a focus on sublexical processing to a focus on lexical processing.

Shame culture in Indonesian literature

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As a reflection of human experience, literature reflects the social and cultural values which the people hold. It presents the people and their interactions as well as the beliefs and norms which underlie the interactions. A study on the social and cultural values, therefore, can use the literary works which the people produce.

This paper is a report on a corpus study on *shame culture* which Indonesian people have. It uses the website `www.corci.org` which provides 103 novels dated from early 1900s to 2010s and current short-stories to get the research data. A search with the word the word *malu* 'ashamed' or 'shy' as the key-word produced 979 sentences, and a search with the word *memalukan* 'disgraceful' or 'embarrassing' as the key-word produced 85 sentences in their contexts. The data were then systematically selected and analysed using the grounded approach.

The analysis of the data reveals that shame in Indonesia can be attributed to (i) a socially unacceptable action, (ii) poor performance or achievement, (iii) association to a lower group, and (iv) being in an improper condition. Furthermore, the degree of shame which the people experience is also affected by some social and cultural factors which regulate their interaction.

Neural correlates of association strength and categorical relatedness in youths with autism spectrum disorder

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Previous studies have demonstrated different neural patterns of association strength between youths with autism spectrum disorders (ASD) and typical development (TD) youths. However, the distinction between association strength and categorical relatedness is not clear. The present study was designed to address this issue to understand the organization of semantic knowledge. Functional magnetic resonance imaging (fMRI) was used to examine the neural correlates of association strength and categorical relatedness. Thirty-one male youths with ASD (mean age = 12.1 years, $SD = 1.5$) and thirty-six typically developing (TD) youths (mean age =

11.9 years, $SD = 1.0$) participated in this study. They were matched with age-, sex-, and handedness. Participants were asked to decide if two visually-presented Chinese characters were semantically related. For the semantically related pairs, the values of association strength and categorical relatedness were item-level parametric modulators. This modulation served as two continuous variables to determine if brain activation was systematically correlated with these two variables. For association strength, the ASD group showed greater activation in the left cuneus for weaker association strength, whereas the TD group showed greater activation in the left inferior frontal gyrus (IFG) and middle temporal gyrus (MTG) for weaker association strength. For categorical relatedness, the TD group showed greater activation in the left precuneus and occipito-temporal cortex (OTC) for higher categorical relatedness as compared to the ASD group. Moreover, for the ASD group, the correlation analyses showed that left cuneus activation for weaker association was positively correlated with the score of picture completion which is associated with visual perception, and left IFG activation for weaker association was positively correlated with the score of comprehension which is associated with language comprehension and practical judgement. For the TD group, left precuneus activation for higher categorical relatedness was positively correlated with the score of similarities which is associated with concept forming. Our findings imply differential neural mechanisms of semantic processing between these two groups. The ASD group may use lower-level visual processing for both association strength and categorical relatedness. The TD group showed higher-level controlled processes of more elaborate semantic representations for association strength and more elaborate features of categorical knowledge for integration.

The temporal order of tone and vowel processing during Cantonese spoken word identification: An ERP study

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A majority of world's languages rely on both segmental and suprasegmental information to distinguish word identity. While it is clear that they both play a role in spoken word recognition, no consensus has yet been reached on their temporal order of activation. The present study aimed to examine this issue in Cantonese with event-related potential (ERP) recording. Specifically, an auditory lexical decision experiment was adopted. Stimuli were real disyllabic words or pseudowords that contained a vowel, tone, or vowel-tone mismatch in the second syllables. The pseudowords would result in difficulty in word semantic integration and thus would generate larger N400s than real words. By comparing the latency of N400 across the different pseudoword conditions, it would be possible to clarify the temporal order of vowel and tone processing and deepen our understanding towards the time course of spoken word recognition.

Linking lateralized syntactic processing, inter-hemispheric communication, and language performance —An Event-Related potential study.

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Prior studies have found reliable structural-based syntactic processing (indexed by the P600 responses) in the left hemispheres (LH) in young right-handers without familial sinistrality (FS-) but bilaterally in FS+ young adults, leading to the hypothesis that the right hemisphere (RH) is capable of structural analysis. RH P600 responses are usually masked via inter-hemispheric suppression; however, little is known about factors modulating such suppression and whether the RH of left-lateralized individuals can still acquire P600 responses. To unravel the puzzles, we tested 32 young right-handed FS- Chinese speakers in two Event-Related Potential (ERP) sessions and a behavioral bilateral flanker task. In ERP session one, participants viewed and judged the grammaticality of Chinese phrases containing a centrally-presented one-word syntactic cue (adverb/classifier) followed by a laterally-presented verb or noun, matching or mismatching the syntactic expectancy. In ERP session two, participants learned a monaurally presented artificial language (AL) and judged the grammaticality of another set of strings after training. In the behavioral session, participants attended to and judged the direction of a horizontal arrow presented in a pre-specified visual field (VF), with another arrow or a square appeared simultaneously in the non-attended VF to form congruent / incongruent or neutral conditions. LH-on-RH inhibition was measured by subtracting the reaction times in baseline trials from those in incongruent trials in the attend-right VF condition. The results from native language processing showed a reliable P600 grammaticality effect only in the LH, replicating prior research. Further analysis supported the link between left-lateralized P600 and inter-hemispheric inhibition by revealing a correlation between the magnitude of RH P600 responses and LH-on-RH inhibition, with smaller RH P600 associated with more effective inhibition. Interestingly, data from AL processing showed bilateral P600 grammaticality effects. Greater degree of P600 left-lateralization was associated with more accurate grammaticality judgment, which in turn was associated with more effective LH-on-RH inhibition. A median-split based on the accuracy of grammaticality judgment in the AL session showed that P600 effects were lateralized to the LH in high performers but bilaterally present in low-performers while both groups showed a left-lateralized P600 effect during native grammar processing. Together, these findings suggest that language lateralization may be jointly determined by multiple modulating factors, including inter-hemispheric inhibition as measured by the flanker task and language proficiency.

Learning Mandarin Tones with Manual Directional Gestures

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Action and perception interact in complex ways to shape how we learn from our environment. For example, hand gestures can facilitate learning speech. However, the mechanisms by which the motor and visual information influence auditory learning are still unclear. We hypothesize that cross-modal learning benefits are based in the common representational format of features across motor, visual, and auditory domains. To test this hypothesis, we examined the role of directional pitch gestures in helping native English speakers learn Mandarin tones. Participants were randomly assigned to one of five training conditions in which the orientation of a manual gesture and its pairing with a tone was manipulated. In addition, participants either watched or performed gestures. Compared with a baseline training condition in which participants only listened to tones, watching or performing gestures that were fully congruent with pitch direction significantly enhanced tone category learning. However, when the gestures matched the direction of the pitch but not its orientation (e.g., in the horizontal plane an up gesture moving away and a down gesture moving toward the body), only performing but not watching gestures enhanced tone identification, suggesting motor performance is sufficient to create a mapping onto the auditory signal. In a control experiment, participants failed to learn the tones that were incongruent with performing gestures, indicating that general motor activity is not sufficient to promote learning. Our results suggest that a common representational mapping can be established between motor, visual and auditory modalities and can enhance perceptual learning.

Revisit Modern Chinese Construction "V-lai-V-qu" From a Cognitive Perspective

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This research focuses on the case study of Chinese four-character constructions: "V-lai (come)-V-qu (go)". Previous studies tell us that there are two different variants in this construction: "V1-lai-V1-qu" and "V2-lai-V2-qu" (Liu, 1999). See example (13a) and (13b):

(13)   a.   V1: Displacement

*Xiao-pengyou men jingchang zai menqian **pao-lai-pao-qu**.*
Children   PL   often   PREP doorway run.

"Children often run back and forth in the doorway." (cf. BLCU Chinese Corpus)

b. V2: Non-displacement

*Zhe dao ti   hen nan, wo **xiang-lai-xiang-qu** haishi meiyou*
This CL   question very hard 1SP think.   back   and

    nong-mingbai.
    forth

  "This question is very hard, I still can not make it clear even if I have thought back and forth." (cf. BLCU Chinese Corpus)

From V1 to V2, the meaning of V-element can be changed from displacement to non-displacement. (Zeng, 2008; Zhou, 2017) This phenomenon can be explained by *Conceptual Metaphor* (Lakoff & Johnson, 1980): "V1-lai-V1-qu" (space domain) can be mapped into "V2-lai-V2-qu" (time domain). However, they didn't explain the conceptual mapping in the construction "V1-lai-V1-qu" and "V2-lai-V2-qu", respectively.

In (13a) and (13b) the position of word "lai" and "qu" are interchangeable, so the meaning of "V-lai-V-qu" is the same as "V-qu-V-lai". However, the usage frequency of "V-lai-V-qu" (38.6%) is much higher than that of "V-qu-V-lai" (25.5%), based on Zhou (2017). So why do people tend to put "lai" before "qu" in the construction to express the same meaning? Previous studies didn't explain it clearly and systematically.

Our goals are to solve the two main research questions: (1) What is the conceptual mapping in "V1-lai-V1-qu" and "V2-lai-V2-qu"? (2) Why the construction "V1-lai-V1-qu" is more widely-used than that of "V1-qu-V1-lai"?

What we have found are: (1) Both two variants of this construction have the concept of *Quantity*. From the meaning, "V1-lai-V1-qu" can show numerous repetitions of V1 and "V2-lai-V2-qu" can show numerous repetitions of V2. Hence, the concept of space can be mapped into the concept of number in "V1-lai-V1-qu", and the concept of time can be mapped into the concept of number in "V2-lai-V2-qu". (2) The preference for "V-lai-V-qu" in usage can be explained by two viewpoints in social cognition, which can reflect the *Iconicity of Sequence*. The first is about self-centeredness, which means we visualize ourselves as the focus of attention. In this way, we prefer to use "lai (come)" because the meaning of "lai" is the action that sth. or sb. is toward us, and the word "qu (go)" is the action that sth. or sb. is away from us. The second is about empathy: we prefer good (things) rather than evil (things). So the word "lai" tends to be a preferential word in the usage of this construction because the metaphorical meaning of "lai" is to show getting something, the metaphorical meaning of "qu" is to show losing something.

In sum, the significance of this case study is to fill the research gaps by testing *Metaphor* in Chinese constructions, and this study can serve as a reference to explore cognitive mechanisms in other similar constructions, like "V-shang (up)-V-xia (down)" and "V-jin (enter)-V-chu (exit)", to broaden cognitive study in verbal reduplicative constructions.

The link between auditory temporal processing and phonetic system knowledge in Chinese reading

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Purpose Auditory temporal processing has been proved as an important foundation for various phonological processing skills and reading in the alphabetic language. Considering the highly visual features of the Chinese writing system, the importance of auditory temporal processing in reading Chinese may underestimate. One possible reason is the neglect of the role of the phonetic system which is the major way Mainland China and Taiwan children learn to read Chinese characters. Therefore, the goal of this study was to examine how concurrent phonetic system knowledge affects the influence of auditory temporal processing on Chinese character reading. Method Eighty typically developing Chinese children in first and second grades were recruited in Taiwan, and all the eligible participants completed several reading-related tests (i.e., phonetic system knowledge, auditory temporal processing, rapid naming, phonological awareness, and verbal short-term memory). Results A full mediation was found in the model examining the influence of phonetic system knowledge on the association between auditory temporal processing and Chinese character reading. While the total effect on Chinese character reading (i.e., without a mediator) was significant, this effect disappeared when the mediator of phonetic system knowledge was added to the model. Conclusions Our findings go one step further in that the influence of phonetic system is expanded to auditory temporal processing, which is regarded as an underlying mechanism, and it may explain the non-significant association between auditory temporal processing and Chinese character reading found in previous studies in Hong Kong and Macau where people learn Chinese without receiving phonetic system training.

How socioeconomic status (SES) affects Chinese word reading and spelling among Chinese kindergarten children in Hong Kong

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Aims: In Hong Kong, nearly 20% of children are living in poverty (Census and Statistics Department 2017). However, little is known about how different cognitive-linguistic skills mediate the relationship between SES and children's word reading and spelling. The present study aims to examine the direct effect of SES on children's concurrent Chinese literacy skills and how cognitive-linguistic skills mediate the longitudinal links among SES, word reading and spelling in Chinese.

Method: Participants were 109 Hong Kong Chinese children. These children were administered the measures of vocabulary knowledge (VK), phonological awareness (PA), morphological awareness (MA), executive functioning (EF), Chinese word reading (CWR), and Chinese word dictation (CWD) at both Kindergarten K2 (Time 1) and K3 (Time 2).

Results: SES at Time 1 had a direct effect on CWR at Time 1 with age and cognitive-linguistic skills controlled, and an indirect effect on CWD at Time 2 that was fully mediated by PA and VK at Time 1.

Conclusion: The results highlight that SES exerts an impact on children's early Chinese reading and spelling skills and suggest the utility of improving phonological awareness and vocabulary knowledge of low-SES children.

Census and Statistics Department. 2017. *Hong Kong poverty situation report 2016*. Hong Kong: Census and Statistics Department.

The realization of nuclear and prenuclear accents in Mandarin learners of English

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Although prosody is an important element in successful speech communication, its acquisition is an area that has received relatively little mention in language learning research. However, our previous studies have shown that even for very early Mandarin-English bilinguals, who had impressionistically reached a near-native level of competence, the realization of their prosody is still different from their native counterparts (Chen & Fon 2008). This study thus intends to investigate how advanced English learners, who are relatively fluent yet outright nonnative, realize English prosody. In particular, we are interested in their realization of nuclear and prenuclear accents, and how they compare with their near-native early-bilingual counterparts. Two groups of speakers were planned for this study. The first will include 22 advanced Mandarin learners of English (hereafter L2), while the second will include 22 native American English speakers as a control. All speakers will read 21 English monosyllabic stimuli embedded in a declarative carrier. Figure 1 shows the preliminary results of 43 speakers on their maximum F0 of nuclear and prenuclear accents using the ToBI labeling framework (Beckman & Ayers, 1997). Compared with the native speakers, the L2 learners seemed to have higher maximum F0 values for prenuclear accents, and possibly a wider pitch range for the whole IP. This might have to do with the preferred pitch range in their native language, as Mandarin Chinese has been found to have a wider pitch range than English in previous research (Chen, 2005; Eady, 1982; Keating & Kuo 2012). It might also have something to do with the L2 learning itself, as different pitch range is also found in other combinations of L2 learners (Busà & Urbani, 2011; Ullakonoja, 2007; Urbani, 2003; Zimmerer et al., 2014). This will await further analyses.

Mandarin-speaking children's comprehension of universal quantifiers and negation

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Mei ge nanhai dou meiyou qi daxiang. 'Every boy did not ride the elephant.' This sentence can mean either 'None of the boys rode the elephant' or 'Not all of the boys rode the elephant' to Mandarin-speaking children children. The interaction between universal quantifiers (i.e., every) and negations is referred as the 'scope phenomenon', which involves the integration of multiple linguistic representations: syntax, semantics and pragmatics4. Children's interpretation of sentences with both quantifiers and negations provides us a ground for investigating their developing knowledge of the scope phenomena4. Children's comprehension of universal quantification has been explored in a variety of languages. 123 However, few studies have investigated the interaction between universal quantifiers and negations, particularly in Mandarin speaking children. Our study focused on children comprehension of *dou>bu (every>not or all>not)* sentences. Two main questions are asked: (i) Are *dou>bu* sentences ambiguous to children? (ii) Are there developmental changes in their understanding of *dou>bu* sentences?

In a previous study, Zhou & Crain (2009) investigated universal quantifier and negation with Every>not sentence. They tested 20 Mandarin-speaking children between the ages of 3;4 and 5;11 (mean 4;3) with a Truth Value Judgement Task. Their findings revealed that like Mandarin-speaking adults, all children accepted the Every>not sentence in the 'none' scenario. However, 47% of the children also accepted the Every>not sentence in the 'some' scenario, despite that the 'some' scenario was rarely accepted by adults. In other words, children sometimes found the Every>not sentence ambiguous and accepted two different readings for it. When the children were further divided into younger (ages 3;4–4;3) and older (ages 4;5–5;11) groups, the younger children accepted the 'some' reading of Every>Not sentence 89% of the time, while the older children accepted it 10% of the time. However, the judgement task may have placed a high demand on children' memory and metalinguistic awareness. We aimed to address similar questions with a different experiment that required less memory, attention and metalinguistic skills.

We used a sentence-picture matching task. For example, when the child heard *Meiyizhi xiaozhu dou bu zai pa tizi.* 'Every pig is not climbing the ladder.', they saw two pictures simultaneously. One picture illustrated the 'none' scenario, and the other illustrated the 'some' scenario. We tested 137 Mandarin-speaking children between the ages 3;1 and 6;6 (mean 4;9). They fell into 4 groups: 3-year-olds (N=24, 3;1-3;11, M=3;7), 4-year-olds (N=52, 4;0-4;11, M=4;5), 5-year-olds (N=50, 5;0-5;11, M=5;5), and 6-year-olds (N=11, 6;0-6;11, M=6;1). Our results revealed that children accepted the 'some' reading 14% of the time. The acceptance rates were respectively 35% (3-year-olds), 12% (4-year-olds), 10% (5-year-olds), and 2% (6-year-olds). Our results are largely consistent with Zhou & Crain (2009) in that 1) young children found *dou>bu* sentence ambiguous, and 2) there was a clear decrease from 3-year-olds to 4-year-olds in the acceptance of the 'some' reading. The lower task demand of our experiment may have led to the lower acceptance rate of the 'some' reading by the current sample. One proposal45 for the developmental change is that Mandarin-speaking children are not aware of the focus-sensitive property of *dou*,

which is a distributive universal quantifier that binds expressions that precede it. Once they acquire the focus-sensitive property of this word, they will narrow down their interpretation to the 'none' reading only.

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A Corpus-based Study for Learning Saisiyat Case Markers

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Saisiyat is one of the endangered Austronesian languages spoken in Taiwan. In order to revitalize the language, the government officials have been developing Saisiyat learning materials. In order to facilitate the learning process, this paper conducts a preliminary corpus-based study, finding that the case markers have the highest frequency of occurrences in the on-line Saisiyat dictionary published by the Council of Indigenous Peoples (CIP). The result suggests that the case markers are essential in linguistic terms. Inspecting the current learning materials published by CIP, though the case markers have been specified, there might be slightly insufficient for the leaners to distinguish the functions of the case markers, which should be taught either implicitly or explicitly to facilitate the learning. As a result, this study provides the information about the case makers to compensate the lack of discussion of case markers in terms of the learning materials. The goal of this study is to provide a scheme of the Saisiyat case markers, thus to raise the learners' awareness of the functions of these case markers, starting from those frequently used in the on-line Saisiyat dictionary.

AOA Effect on L2 Sentence Processing of Relative Clauses in Korean-English Bilinguals: Evidence from Self-paced Reading

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Yongin University

Whether a critical period exists for acquiring languages and whether knowing two languages helps or hinders the processing of either language have led to one of the intensively pursued research questions. Korean-English bilinguals with variable age of arrival (AOA) constitute an ideal model to investigate this issue regarding the ambiguous relative clause (RC) structure[1].

The objectives were twofold: to investigate whether AOA plays a role in L2 grammatical processing between early and late bilingual groups, and to examine whether these bilinguals display similar or different processing strategies from English monolinguals. It was hypothesized that paring strategies could be changed over time as the bilinguals gain L2 experience with decreased forward transfer and

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[1] Experimental materials are disambiguated for either NP1 or NP2 site in the online task by changing the number of one of the two nouns so that it would agree with the number of the verb in the RC.

increased native-like processing. Also, early and late bilinguals were predicted to show different processing patterns to some extent from one another.

Self-paced reading task was used to examine the effects of AOA on L2 sentence processing in 20 Korean-English bilinguals who arrived at an English spoken environment at different ages (7 vs. 16 years old of AOA). Several tests, such as cloze tests and a language background questionnaire, were conducted to evaluate bilinguals' L1 and L2 fluency. Reading times in a critical region as well as each segment were measured for data analysis.
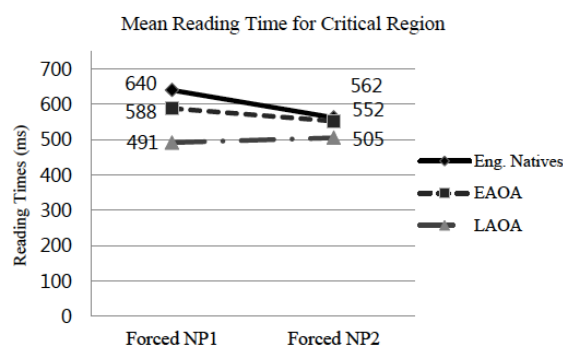
Figure 2.9: Mean reading time at the critical region in NP1 and NP2 regions

Overall, early bilinguals behaved in a parallel way with English monolinguals whereas late bilinguals did not show similar routines with English monolinguals and early bilinguals. The results suggest that the AOA mainly affects the sentence processing to a greater extent between two different bilingual groups even though their L2 is highly comparable. Then, why the early and late bilinguals exhibit different parsing routines? More feasible possibility is that there is an AOA effect in processing ambiguous English RCs. As study from Wartenburger et al. (2003) demonstrates that bilinguals' different AOA influences the RC processing routines, our findings that early and late bilinguals showed different attachment patterns in L2 grammatical processing with RC containing genitive construction can be attributed to bilinguals' different AOA to L2 environment.

In sum, these findings support the view that the AOA affects the bilingual's L2 sentence processing, adding another piece of evidence that there is an existence of a critical period for grammatical processing (Flege, Yeni-Komshian & Liu 1999).

Furthermore, this study showed that bilingual's different degrees of dominance of the two languages affect a parsing strategy between early and late bilinguals. Early bilinguals reported their dominant language is English (82%) and English is superior to Korean whereas it is Korean (89%) rather than English (11%) for late bilinguals. Performance on L2 grammatical processing in early bilingual group seems to be similar in speed, automaticity or accuracy to that of English monolinguals. In the case of the late bilingual group, since Korean is dominant and actively used, they did not pattern with English grammatical processing (Birdsong 2006). Thus, the linguistic set they use when processing linguistic input is the one associated with their dominant language. Dominant language might be another factor that determines the parsing strategy in English grammatical processing.

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Registers of internet language and e-grammar

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Internet language is a phenomenon accelerated by the rapid advancement of technology where language is no longer bounded by simple mediums of speaking and writing (Crystal 2001). Instead, speaking and writing should be viewed as a continuum with registers leaning toward either side of the scale (Herring 2012). Similar to the registers Halliday (1989) proposed, the acceptability of variables is reflected by the register the person chooses to adopt. Variables such as typos and misspelling in messages, the lack of punctuations, ungrammatical verb inflections, fragmented sentences, etc., would all be unacceptable in traditional writing yet the internet tolerates these variables. Martin Joos in his book "The Five Clocks" divided registers into five levels based on formality. People switch between registers of formality subconsciously and naturally depending on the place and person they are talking to. However, little research has been done to explore specific registers of internet language and how each register differs from one another. This paper aims to discuss the registers of internet language and how the five levels of formality proposed by Martin Joos (1961) could be modified to better fit the current language users.

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Herring, Susan C. 2012. Grammar and electronic communication. In Carol A. Chapelle (ed.), *The Encyclopedia of Applied Linguistics*. Oxford, UK: Blackwell Publishing Ltd. `http://doi.wiley.com/10.1002/9781405198431.wbeal0466` (5 October, 2018).

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Poster session 2

Sex differences in adults with attention-deficit/hyperactivity disorder: a counting Stroop functional MRI study

Shu-Hui Lee[1], Seng Chia[2], Tai-Li Chou[3], Li-Kuang Yang[4] and Susan Shur-Fen Gau[4]

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Objective: Executive functioning (EF) is critical for flexible behavior, enabling the setting and maintaining of our goals, the inhibition of inappropriate responses, and the selection of target-relevant responses (Lee et al. 2017). Emerging evidence in individuals with attention-deficit/hyperactivity disorder (ADHD) has reported EF dysfunctions in regions including anterior cingulate cortex (ACC), caudate, inferior frontal gyrus (IFG) and precuneus (Dickstein et al. 2006, Cortese et al. 2012). However, most functional studies recruited male participants only (Dickstein et al. 2006). To date, the EF abnormalities in women with ADHD are less clear. Thus, we used functional magnetic resonance imaging (fMRI) to examine the EF deficits in affected men and women in ADHD in a counting Stroop task that prompts semantic incongruency between the number and meaning of the Chinese characters.

Method: The sample consisted of 53 adults with ADHD (27 men) and 52 age- and IQ matched healthy comparisons (HC, 26 men). They were scanned while performing a counting Stroop task that consisted of congruent (CON), incongruent (INC), and control conditions. In the task, participants were asked to judge the number of words (one to four) by pressing a button, regardless of the word meaning. Focused attention and vigilance were assessed outside the scanner by using the Conner's Continuous Performance Test (CCPT). Two series of analysis were conducted in the present study. First, for the contrasts between the ADHD and HC groups of each sex, we examine the neural correlates for the contrast of [INC vs. CON] at a voxel-wise corrected threshold (FWE $p < .05$, family-wise error). Second, we conducted correlations between the signal intensity from peak voxels of ROIs from the contrast of [INC vs. CON] and the behavioral performance on the counting Stroop task/CCPT.

Results: First, compared to HC women, women with ADHD showed lower activations in right IFG, precuneus, ACC, and left middle temporal gyrus (MTG). Second, activations in precuneus and MTG were correlated with focus attention for both female ADHD and HC participants, whereas the correlations of the ACC and right IFG activations with behavioral performance of interference ability and focus attention were found only in female HC participants. Third, men with ADHD demonstrated lower activation in the bilateral caudate nuclei. Increased activation in bilateral caudate nuclei correlated with an elevated level of vigilance was found in HC men but not in men with ADHD.

Conclusions: The semantic incongruency between the number and the meaning in the contrast of [INC versus CON] requires greater engagement of EF control during the stages of semantic retrieval and/or semantic selection for appropriate responses (Chen et al. 2013, van Veen & Carter 2005). In our study, women with ADHD show deficits in detecting and resolving semantic incongruency, resulting in lower activation in right IFG, precuneus, ACC, and left MTG. In contrast, men with ADHD show sex-specific hypoactivation in bilateral caudate nuclei, demonstrating

their failure in inhibition of inappropriate responses during semantic incongruency. In conclusion, this study clearly revealed the distinctive neural activities between women and men with and without ADHD.

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More than flirt: A conceptual metaphor study in *kabe-don*

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20 Oct
POSTER
SESSION 2
14:20
NO. 2

This study aims to explore the conceptual metaphors and the manifestation of power in *kabe-don*. *Kabe-don* was fist mentioned in 2008 and become a hit in 2014 as top 1 the most popular thing among girls in high schools (女子中高生の間で流行ったもの). As the quick spread of *kabe-don* happens, *Kabe-don* is used as an element to communicate with the current society via dramas, animation, advertisement or any campaign. *Kabe-don* is a combination derived from kabe and don which means wall and the sound of slap in Japanese individually. It's an act that a man gets a woman cornered and pins her to a wall. *Kabe-don* behaves as a nonverbal language and shows certain metafunctions in the culture, such as interpersonal and textual functions. This paper tries to analyze *kabe-don* and discuss a deep mechanism of metaphor beyond the literal meaning of *kabe-don*. From a perspective of interpersonal distance and orientational metaphor, the manifestation of power will be uncovered through the *kabe-don*. In addition, *kabe-don* can be mapped to the concept of occupation which can also be connected to the concept of power. That is to say, people may use *kabe-don* to present power and dominance on the target person through breaking the interpersonal distance based on the perception of proximity. Moreover, the effects of *kabe-don* can result from the conceptual metaphor working behind the act of *kabe-don*. The mapping of *Kabe-don* is Occupation is explored under the five hidden elements in the scene of *kabe-don*, which are interpersonal distance, hand, "don", closeness and *kabe-don*er respectively.

Through dialogic syntax to verbal conflicts

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This study aims to use dialogic syntax (Du Bois 2014) to explore the construction of verbal conflicts in three situations including family, classroom, and workplace. Besides, examining the power relation and investigating the authority possession are also the purposes in this paper. These verbal conflicts are derived from YouTube and are based on face-to-face conversations.

Previous analysis about family conflicts is focused much on couples (Tannen, 1990; Babcock Conflicts et al. 1993; Gottman 1993), mothers and children (Dunn & Munn, 1985), and the whole family (Vuchinich 1987). As for verbal conflicts in the classroom, previous research pays much attention on the differences between classmates and teachers (Burbules & Rice 1991) and how to reach consensus (Trimbur 1989). Finally, peace-reaching is focused more than verbal conflicts in previous analysis about business (Hayashi 1996; Nielsen 2009). As a result, little research, to the best of my mind, focusing on verbal conflicts with dialogic syntax (Du Bois 2014).

Therefore, some problems need to be resolved due to the deficiencies in previous analysis. These problems includes: (1) what is the dialogic syntax in verbal conflicts? (2) Why people can infer the meanings from interlocutors and give the corresponding responses? and (3) How power and authority relate to verbal conflicts?

The results find out elements in dialogic syntax such as parallelism, resonance, diagraph, reproduction, selection are existed in these three verbal conflicts. This finding indicates that people from all over the ages understand the meanings from interlocutors and give the corresponding responses. Besides, people who have more power are the authority in the conversation and control the whole process. However, people who have less power would challenge the authority when they are getting older. Finally, only analogy is contained in the classroom verbal conflicts and contrast is not covered in family verbal conflicts. This is understandable because teacher would use some terms to compare with their students. Besides, parents desire to receive excuses rather than debate in the verbal conflicts. The value of this paper lies in investigating the verbal conflicts between fathers and sons, teachers and students, and bosses and employees based on dialogic syntax (Du Bois 2014).

The effect of temporal concept on the automatic activation of spatial representation: From axis to plane

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Temporal concepts could be represented horizontally(X-axis) or vertically (Y-axis). However, whether the spatial representation of time exists in the whole plane remains unclear. In this study, we investigated whether processing temporal concepts would automatically activate spatial representations in a whole plane without any guidance or cue. Participants first indicated whether a word was past-related or future-related, then, they identified a target in different visual fields. In Experiment 1, the results demonstrated that past time mapped onto the left and top in a plane or axis, while future time mapped onto the right and bottom, with the horizontal effect being stronger than the vertical effect. In Experiment 2, an index of eye movement showed a similar data pattern. Thinking about temporal concepts activates spatial schema automatically without guidance or cue, and the time-space metaphor is represented not only as an axis but also as a whole plane. The results were discussed in terms of the possible cultural differences that made the Chinese participants tend to be more flexible in spatial representation of time because of their comprehensive thinking.

Differences in age-related neural connectivity of semantic processing in youths with autism and typically developing youths

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Previous studies have shown the differences in neural networks between healthy adults and adults with autism spectrum disorders (ASD) in meaning processing. Adults with ASD have shown aberrant connectivity between the occipital and parietal brain regions suggesting a perception-based neural mechanism to process meaning as compared to healthy adults. However, little is known about developmental differences in neural substrates of semantic processing between typically developing (TD) youths and youths with ASD. This issue is important because ASD is known as a neuro-developmental disorder. The present study thus aimed to explore age-dependent functional connectivity of semantic processing in TD and ASD youths. The participants were divided into the ASD and TD groups, with each group divided into two age subgroups (child, adolescent). They were asked to judge whether written word pairs were related in meaning within an MRI scanner. The psychophysiological interaction (PPI) analysis was conducted to explore functional connectivity that examined dynamic interaction between brain regions. There were three significant findings. First, for children with ASD, two significant connections were found between the inferior frontal gyrus (IFG) and right inferior parietal lobule (IPL) and between the cuneus and right IPL, which suggests visual-based processing during semantic judgments. Second, for the TD children, a significant connection was found between the cuneus and middle temple gyrus (MTG), which suggests a direct mapping between orthography and semantic representations during semantic judgments. Third, for TD adolescents, a significant connection was found between

the IFG and MTG, suggesting more elaborate semantic representations that require the greater engagement of selection processes in TD adolescents. In conclusion, our results imply different patterns of functional connectivity during semantic processing between ASD and TD youths. The ASD children may rely on visual/perceptual processing to meet the demands of the semantic task. The TD children may rely on bottom-up visual information to access semantic knowledge, whereas the TD adolescents may use a top-down controlled process to retrieve semantic knowledge.

Dis-continuous flash suppression: A novel interocular suppression reveals temporal integration of subliminal linguistic information

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Whether high-level linguistic information can be processed unconsciously has been controversial. Specifically, integration over several words is considered as a form of complex multi-step rule processing that requires consciousness. We directly addressed this question and asked whether it is possible that high-order information processing requires stronger subliminal signals that cannot be easily achieved with conventional masking/suppression paradigms. Here we report a novel form of interocular visual suppression (continuous flash suppression): dis-continuous flash suppression (dCFS). In continuous flash suppression (CFS), a series of dynamic and randomly moving noise pattern is continuously presented to one eye, while the target stimulus to the other eye. With strong suppression power to eliminate the visibility of a target stimulus, CFS has been used extensively to study subliminal processing. In dCFS, on other the other hand, both the stimulus and the dynamic noise pattern are presented discontinuously (in a repeated on-and-off manner) to achieve stronger suppression power. In Experiment 1, we found that dCFS exhibited stronger suppression power over CFS reflected by longer target stimulus suppression time and less breaking rates. In Experiment 2, we further utilized dCFS to examine whether temporal integration of linguistic information occurs while the stimuli were suppressed and remained unconscious. Our results showed that after an invisible 2-word sentence context, the response time of the lexical decision to the following syntactically incongruent word was significantly faster than that to a congruent word. This finding suggested that the sentential context has been processed unconsciously and further influenced how participants responded to a target word. Taken together, we report a novel form of interocular suppression named dis-continuous flash suppression (dCFS), which allows longer subliminal presentation and/or higher stimulus contrast and may help researchers to optimize subliminal signals in future studies. Furthermore, we show that under dCFS, temporal integration of subliminal linguistic information can be achieved.

Developmental changes during semantic judgments to Chinese characters: A longitudinal study of effective connectivity

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Previous cross-sectional studies have investigated neural correlates of semantic processing. However, it is little known whether the patterns of effective connectivity with semantic processing change developmentally in a longitudinal study. Thirty-five typically developing children (7- to 14-year-olds) were recruited in a functional magnetic resonance imaging (fMRI) study to examine the developmental changes of semantic processing over a two-year interval. Character pairs were arranged in a continuous variable according to association strength (i.e. strong versus weak), and participants were asked to indicate if character pairs were related in meaning during semantic judgments. Dynamic causal modelling (DCM) was used to investigate the effective connectivity over time. We set up a model with four cortical regions (left inferior frontal gyrus (IFG), left middle temporal gyrus (MTG), left inferior parietal lobule (IPL), and left fusiform gyrus (FG)) to evaluate dynamic interaction during semantic judgments. Our connectivity results showed that greater developmental changes (from time 1 to time 2) of the bottom-up effects from FG to other regions (IFG, MTG, and IPL) were stronger than other effects for strong association pairs. Taken together, the connectivity findings suggest developmental changes in bottom-up influences with a direct mapping from orthography to semantics, including access to semantic representations as well as links to working memory and cognitive control for processing Chinese characters.

A study on the English translation of *ba* constructions in Taipei people

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The unique character *ba* in Mandarin Chinese has been intriguing to linguists. However, the *ba*-constructions were treated differently depending on distinct perspectives. The character *ba* was regarded as a verb (Hashimito, 1971; Yang, 1995), as a coverb (Li & Thompson 1981), as a preposition (Huang, 1982; Li & Thompson, 1976), as a case marker for objects (Huang, 1992; Huang, 1991), and as a secondary topic marker (Tsao, 1987). Despite the difference in functions, one thing is clear in that it has unique grammatical features in Chinese. How would it be treated in English translation? In order to investigate this topic, this paper explored eight Ba-constructions of five short stories in Pai Hsien-yung's *Taipei People* (translated into English by Pai himself and Patia Yasin, 2000). First, all the 129 sentences were classified based on Wang (1943). Then each pair, English and Chinese, was further analyzed from the contextual perspectives (Tsao 1987). Finally, the variation of decoding in English for the corresponding Ba-construction was re-examined, with a view to investigating (a) whether there is a fixed English translation for the same type of Ba-construction, and (b) between Wang (1943) or Tsao (1987), which model can account for the difference in English translation. The findings indicate *ba* constructions are indeed translated into different patterns in English, mostly relying

on context. Discourse with the character *ba* always carries strong intentions and implies causes and effects. Ultimately, context determines the usage and translation of *ba* constructions.

Semantic processing as an endophenotype in youths with autism spectrum disorder

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Autism spectrum disorder (ASD) is characterized as a highly heritable neurodevelopmental disorder. Aberrant semantic processing is one of the common features in individuals with ASD. Unaffected siblings of individuals with ASD usually have similar genetic backgrounds and early-life environments with individuals with ASD, with a higher risk of developing the same disorder. However, little is known about genetic contributions to neural mechanisms of semantic processing in unaffected ASD siblings. Therefore, this study aimed to adopt an endophenotype approach to investigate the differences in underlying neural mechanisms of semantic processing in youths with ASD, their unaffected siblings, and typically developing (TD) youths. Endophenotypes for ASD are defined as similarly heritable traits that are associated with ASD. This study recruited 39 ASD youths (mean age = 14.83 years, age range= 8-25), their unaffected siblings (mean age = 15.70 years, age range= 8-29), and 40 TD youths (mean age = 14.59 years, age range= 8-26). Participants of these three groups were matched with IQ, age, and handedness. Participants were instructed to judge whether two Chinese characters were related in meaning in an MRI scanner. The neuroimaging results showed that genetic components of ASD might affect different aspects of brain regions as revealed by the unaffected siblings. The unaffected ASD siblings showed commonly greater cuneus activation with ASD youths as compared to TD youths. Also, the ASD siblings showed intermediate inferior frontal gyrus (IFG) activation between TD and ASD youths during semantic judgments. In other words, the ASD siblings had greater IFG activation relative to the ASD youths and had less IFG activation relative to the TD youths. The greater cuneus activation may be associated with using perception-based strategies to access semantic knowledge. Also, the weaker IFG activation may be related to poor retrieval of semantic knowledge. Our findings indicate that greater cuneus activation and weaker IFG activation may be candidate trait markers for semantic processing in ASD.

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Language non-selective access in cross-script bilinguals: a masked phonological and semantic priming event-related potentials (ERP) study

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The Bilingual Interactive Activation Model Plus (BIA+; Dijkstra & van Heuven 2002) and the Revised Hierarchical Model (RHM; Kroll & Stewart 1994), differ in claims regarding bilingual lexical non-selectivity. The BIA+ model argues that lexical and meaning entries of L1 and L2 are integrated in one lexicon to have automatic and parallel access when similar phonemes or pronunciations are presented. The RHM claims for separate L1 and L2 lexicons, and the input of one language would not automatically activate the lexical entries of another language.

The current event-related potential (ERP) study investigated how lexical representations of two different-script languages are organized in the bilingual lexicon. A lexical decision task was used to test whether phonological and semantic cues from L1 non-selectively activate L2 representations prior lexical access. Different phonological and semantic prime-target language relationships were used to compare Korean-English bilinguals with English monolinguals.

Comparison of bilinguals and monolinguals found that phonologically similar prime-target pairs were more prone to errors and evoked a greater positivity at the early central-right P2 component, but reduced negativity at the lexical N400 than phonologically dissimilar pairs in bilinguals. Words with semantically similar primes also led to more accurate and faster response, with an earlier peak latency and reduced activation at the late central N400 in bilinguals. Thus, shared phonology and meaning between Korean and English facilitate the ease of lexical-semantic retrieval and post-lexical processing during L2 word recognition. On the other hand, the interaction of L1 and L2 phonology is inhibitory at the sub-lexical level and becomes facilitatory as competition is resolved at the lexical level.

The automatic and non-selective activation of phonological and semantic representations from two scripts with distinct visual forms give support to the BIA+ model. However, sub-lexical phonological interference effects and how orthographically distinct scripts are processed are not clearly explained in the current BIA+ model. Hence, accommodation of additional links to the language membership nodes from sub-lexical representations and including the degree of overlap in orthography and phonology are proposed.

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Exploring nonlinguistic cognitive ability in adults with aphasia

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Aphasia is a communication disorder caused by damage to one or more of the language areas of the brain, with cerebrovascular accident (or stroke) being one of the most common causes. Previous research on post-stroke aphasia has largely focused on language-related abilities or symptoms; relatively little attention has been given to non-linguistic cognitive abilities of these individuals. There has been some evidence showing that deficits in nonlinguistic cognitive functions such as attention and short-term memory might co-exist with language deficits in post-stroke aphasic patients, even after excluding concurrent conditions or disorders that might affect the patients' general cognitive skills. To gain further understanding of possible associations between language and non-verbal cognitive functions, in the current study we examined visual selective attention, visual alternating attention, and visual working memory abilities in 20 post-stroke aphasic patients and 20 normal adults matched for age and education level. A visual recognition task was also administered to gain baseline information about the participants' ability to match visual shapes or patterns. The two groups performed equally well in the baseline measure of visual recognition. However, the aphasic group showed significantly lower mean scores than the unaffected group both in the visual selective attention task (mean accuracy: aphasic group = 52%; control group = 83%) and the visual alternating attention task (mean accuracy: aphasic group = 56%; control group =84%). Group differences in the visual short-term memory task were also observed, with the aphasic group (mean span= 4.74, SD = 1.42) showing an overall shorter visual memory span than the control group (mean span= 6.35, SD= 1.46). In addition, the aphasic patients as a group exhibited larger performance variations than the control group in all three experimental tasks. Possible associations between cognitive impairment and severity of language impairment will be discussed.

Qualitative evaluation of EFL pre-service teachers' reading prosody

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Yamashita & Ichikawa (2010) found that phrasing affected oral reading fluency for participants of different proficiency levels. Furthermore, since teachers' modeling can provide extensive input to facilitate L2 learners' reading fluency and a critical component of reading fluency is the ability to read with prosody; that is,

with appropriate expression/intonation coupled with phrasing that allows for the maintenance of meaning (Kuhn et al., 2010), this study, differing from most previous studies, evaluates EFL pre-service teachers' performance in reading paragraphs with longer sentences. Participants are 52 freshman English majors with TOEIC scores ranging from 540 to 945. With a cut-off score of 750, they were divided into an advanced and an intermediate proficiency level subgroup (t =12.03, p < .0001). A passage discussing the top 3 vacation spots to learn English retrieved from the English.com.tw website was modified to suit the research need and was verified to be a familiar topic for the participants.

The finalized passage is 399 words in length with an average of 28 words per sentence. The longer sentences allow the researchers to probe into the factors of pausing and phrasing on learners' reading fluency. The readability of the passage was 13.1, determined using the Flesch-Kincaid Grade Level Test. The difficulty level was thus assumed to be appropriate for the participants. A multidimensional fluency scale including dimensions of expression/volume, phrasing, smoothness, and pace (Rasinski & Padak, 2008) was used as the evaluation criteria. The inter-rater agreement between two raters was 0.944. With prosodic scores of 10.92 for the advanced group and 8.63 for the intermediate group (maximum score = 16), t-test analyses showed that the advanced group outperformed the intermediate group in all dimensions of fluency. Stepwise regression analysis revealed that expression/volume and smoothness are the two major factors accounting for 88.7% of the advanced group participants' reading prosody performance, whereas smoothness and pace are main factors accounting for 92.3% of the intermediate group participants' performance. These indicated that the significant difference lies in the expression/volume dimension and the higher levels of reading prosody are learnable. Pedagogical suggestions for improving intermediate learners' reading expression will be provided.

The reshaping of English from an East Asian lexical perspective: Fixed expressions

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With globalization, English in some variety or another has become one of the languages spoken in most countries, and so it is with East Asian countries. As today's second and third language speakers of English reshape what is considered linguistically acceptable within their own countries, their cultural influences become part and parcel of their cognition in English—both how they process this international language and how they use it. With lexical range and fluency being the primary feature of communicative competence, the identification of novel lexical combinations in East Asians' English use provides a framework for determining which East Asian English varieties have, in fact, become standardized or are in the process of standardizing. Some of these combinations of words, which may not be considered to combine naturally in the older world Englishes, such as American or British English, are undeniably in regular use in the new communities of English users. This paper focuses on fixed expressions identified as standardized or standardizing in one East Asian variety of English. Fixed expressions can be considered

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as those collocations, that is, word combinations, that have become a standard way of expressing an idea in certain situations.

Across world Englishes, no rules exist for word combinations. Certain combinations, simply put, just sound either correct or incorrect. Given the growing acceptance and documentation of new world Englishes, what sounds correct—and more importantly, what is consistently used across a range of users—is what is de facto acceptable to that community. The research question for this study is this: Are there regularly occurring fixed expressions used by East Asian speakers of English that can be considered as different—but stable—from the British and American standards? The methodology is qualitative, using content analysis of ex post facto student and public data. Thus far, eight expressions, from a sample of over 300 collected, are posited as having veracity as fixed expressions in the East Asian community under study. Moreover, this study is part of current research ongoing into establishing the veracity of, initially, this East Asian variety of English as a legitimate world English. At a regional level, the implication is that documentation of these word combinations, or their variations, will form a valid lexical corpus that can be distinctly identified as East Asian English. Providing such documentation has classroom implications of encouraging East Asian educators and students to assume ownership of their regional variety of English, thus serving as a motivational tool towards increasing the efficacy of English learning across East Asia.

Orthographic neighborhood token frequency effect in Chinese character recognition

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Previous studies have found the orthographic neighborhood density effect in Chinese character processing (Bi et al., 2006; Bi & Weng, 2008; Li et al., 2011; Zhao et al., 2012). However, the neighborhood density is confounded with the neighborhood token frequency due to the high correlation between these two variables. That is, Chinese characters with more orthographic neighbors also tend to have higher orthographic neighborhood token frequency, which is defined by the accumulated frequency of all Chinese characters sharing the same phonetic radical. Few studies have taken into account the effect of the orthographic neighborhood token frequency when examining the effect of the orthographic neighborhood density effect. Wu and Fu (2005), one of rare attempts examining the effect of the orthographic neighborhood token frequency effect, fail to obtain the reliable effect of the orthographic neighborhood token frequency.

The present study re-examined whether the effect of the orthographic neighborhood token frequency could be obtained when carefully controlled the variable of the orthographic neighborhood density in Chinese character recognition. Two experiments applying lexical decision tasks were conducted. Whereas only Chinese characters with many phonetic radical neighbors were selected when examining the effect of the orthographic neighborhood token frequency in Exp.1, only those with low orthographic neighborhood density were chosen in Exp.2. All stimuli were also controlled for the mean character frequency and the number of strokes. In both experiments, the reliable orthographic neighborhood token frequency effects were obtained no matter the orthographic neighborhood density was high

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(Exp. 1) or low (Exp. 2), suggesting the inhibitory connections among lexical representations of orthographic neighbors. The present finding also suggested that the results of the orthographic neighborhood density effects in previous studies may be confounded by the effect of the orthographic neighborhood token frequency.

Gender semantic priming effects on the lexical meaning of Korean EFL learners : Sociocultural factor

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Regarding the role of automatic processes in human thoughts and behavior in social psychology, a number of studies have demonstrated that automatic priming effects of 'gender' can occur even when the primary meaning for the words does not include the direct gender-related meaning(Banaji & Greenwald, 1995; Blair & Banaji, 1996; Devine, 1989; Macra, Milne, & Bodenhausen, 1994). The purpose of this research has three aspects: (1) to examine whether automatic priming effects on the 'male' and 'female' social categories will occur with Korean EFL students, (2) to find out if there are any differences of the priming effects between gender stereotype words and gender suffix words, and (3) to investigate how Korean EFL learners show the rating of the gender typicality of the prime words.

Forty eight students participated in this study. Their English proficiency is intermediate level. Test items were selected from Lemm, Dabady, & Banaji (2005) implemented. Three types of prime stimuli (gender stereotype, gender suffix, and neutral) were presented, which were job related words such as gender stereotype (e.g. doctor, hunter/ballerina, nurse), gender suffix (e.g. businessman/businesswoman and salesman/salesgirl), and neutral (e.g. businessperson and firefighter). After showing the prime stimuli with 2000ms duration, with '+' gap for 50 ms, target stimuli related with English gender names (John / Jenny) were presented for 1000ms. The participants decided whether the target words were masculine or feminine. It was supposed that the reaction time were facilitated when the prime and target are gender matched. As a result, the significant priming effects were observed on the 'gender' social category, which were more salient with the suffix type than the stereotype primes. Also, the rating of the gender typicality showed some attributes related to the sociocultural factors.

Neural correlates of morphological complexity processing: An fMRI study between noun versus verb and adjectives in morphologically complex Korean word

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In this study, we investigated the neural correlates between simple structural form and complex structural form in Korean morphologically complex word, Eojeol which consists of content word and grammatical morpheme. Word class is one of the universal language unit which is shared in worldwide language. There are, however, many neuroimaging studies that show contradictory results for each word class, particularly cortical activations of noun and verb. Some researchers argue that noun and verb are processed in a shared brain area while others do not. Those whom claim apportion of brain area insist that the noun and verb are processed in temporal brain area and frontal brain area, respectively. Research results' inconsistency seems like depend on the linguistic characteristics of noun and verb and differences among language nationality. Therefore, we divided the condition by the structural complexities which were simple change(noun) and complex change (verb and adjective) in Eojeol. 17 participants were taking a lexical decision task while scanning fMRI images with rapid-event related design. Each 30 stimuli were used for experimental conditions (simple and complex) and 60 pseudo-nonwords were included as filler stimuli. Behavioral result showed that the reaction time of complex condition were significantly slower than the simple conditions. Neuroimaging results for individual contrast of each condition showed shared activation of several regions in occipital lobe, temporal lobe and frontal lobes. But the direct contrast of complex and simple showed activations at left cerebellum, left fusiform gyrus, left lingual gyrus, and bilateral inferior frontal gyrus, only in complex minus simple contrast. Results indicated that the complex structured word classes caused more mental effort for lexical access and showed more neurological activation in related brain area mentioned above.

Hemispheric differences and complexity of syntactic structure

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Hemispheric Differences and Complexity of Syntactic Structure As one special characteristic of human language, syntactic processing is strongly lateralized to the left hemisphere (LH). LH-equivalent syntactic analysis has also been observed in the right hemisphere (RH), but usually in individuals with lower sensitivity to syntactic structures or lower proficiency of the tested language. It is therefore not clear whether the RH involvement in syntactic processing creates interference or provides scaffolds to a not (yet) fully effective language processing system. In view of that, the present study conducted two artificial language (AL) learning experiments to clarify the role of RH involvement in syntactic analysis in young right-handers without familial sinistrality background. Experiment 1 (N=32) compared the degree of lateralization between successful and less successful learners when syntactic regularities are more salient and therefore are easier to detect and learn.

Experiment 2 (N=19) focused on successful learners only and compared their responses to salient (i.e., easier to learn) versus less salient (i.e., harder to learn) syntactic regularities. Event-related potentials (ERPs) were recorded while participants learned an AL by listening monaurally to a set of 3-element strings generated according to pre-determined rules unbeknownst to them and judged the grammaticality of monaurally presented strings after training. The results of experiment 1 showed striking differences in the ERP patterns between successful and less successful learners, with the former (hit and false-alarm rate differences (H-F) = 0.91, N=17) showing a reliable P600 grammaticality effect with right-ear (left-hemisphere biased) presentation only, and the latter (H-F = 0.06, N=15) showing bilaterally present P600 effects. These results replicated prior findings linking RH P600 with lower language proficiency. Experiment 2 was similar to Experiment 1, except that materials were presented in interleaved training and testing blocks so that data analyses could focus on blocks when participants had attained high accuracy. Results from Experiment 2 showed that successful learners (salient: H-F over the last 2 blocks= 0.95, N=11; less salient: H-F over the last 2 blocks = 0.94, N=8) exhibited left-lateralized P600s in the salient condition but bilateral P600 effects in the less salient condition, disfavoring the interference account. Together, our results showed that RH P600 responses would appear in cases when syntactic processing is challenging (Exp. 2) or when the level of proficiency is low (Exp. 1). The RH P600 responses in syntactic processing therefore might reflect extra resources being devoted into learning when the task is challenging.

Culturally tinged spatial metaphor in human relations: A case study of *biǎo* 'outer' in Mandarin Chinese

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This paper aims to explore the cultural sense of spatial metaphors in Mandarin Chinese, by investigating the semantic development of a spatial term biǎo 'outer'. The original meaning of 表 biǎo is 'outer, outside, or surface'. However, when used as 表子 biǎozi, an opposite to 內子 nèizǐ 'legitimate wife', it is extended to refer to the concubines or secret lovers via a metaphorical link in Yuan dynasty (Hu 2016), illustrated by (14a) below. It further developed a sense of prostitute with a female radical 婊 biǎo, and also served as a swear word to females. In the modern era, the result of our study shows that 婊 biǎo has undergone a semantic change from noun to verb, and carried a variety of meanings highly depending on the contexts. These newly emerging meanings have not yet been recorded in the dictionaries, but are frequently used among young generations. When used as a verb, it means 'to criticize' or 'to mock at oneself', as examples (14b) and (14c) show. The semantic prosody of biǎo used to be negative; however, it slightly changes into a neutral term due to the effect of humor. This paper is an empirical corpus-based study. Our data is retrieved from the Scripta Sinica database and PTT corpus. This case study clearly illustrates how spatial metaphors evoke cultural meanings, not only reflecting the worldview of Chinese people in terms of human relations but also indicating the possible mechanisms of semantic change.

Examples: (provided with free translation only)

(14) a. 表子 biǎozi, 'the concubines or secret lovers':

當下　　傳上　　　　押司 張文遠　　　　來，　見說　　　閻婆　告
dāngxià chuánshàng yāsī Zhāngwényuǎn lái, jiànshuō Yánpó gào
宋江　　　殺　了 他 女兒，　正是　　　他 表子。
Sòngjiāng shā le tā nǚér, zhèngshì tā biǎozi。

"The magistrate immediately calls the official, Zhāngwényuǎn, to come. Zhāng explains that Yánpó accuses Sòngjiāng of murdering her daughter, who is his concubine." (Shui Hu Zhuan, Chapter 21)

b. 婊人 biǎo rén, 'to criticize others':

……趁　　當事人　　　不在場　　　時 提出來　婊　　人。
……chèn dāngshìrén bùzàichǎng shí tíchūlái biǎo rén。

"…and criticize the person concerned when he's absent." (PTT Corpus)

c. 自婊 zìbiǎo, 'to mock at oneself':

每到　　夜深人靜　　　　的 此時 正是　　　每個　公主　　　嗷嗷待哺
měidào yèshēnrénjìng de cǐshí zhèngshì měige gōngzhǔ áoáodàibǔ
的 時候　　(自婊無誤)。
de shíhòu (zìbiǎo

"Every night in this moment, every princess is waiting for someone to buy late-night supper for them. (I'm just teasing at myself)" (PTT Corpus)

The English article usage of EFL college students in Southern Taiwan: An English-Chinese contrastive analysis

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Recently TOEIC in Taiwan increases the questions of text completion, and replaces double reading passages with multiple passages. That is, cohesion between sentences and coherence in a passage or across passages gains increasing weight. Besides, students nowadays are required to express or elaborate on thoughts on a variety of occasions, so it is necessary to develop and strengthen students' notion and usage of cohesive devices. 'Article' is one of them. However, the English article system is considered one of the most bewildering structural elements despite its early initiation of learning and frequent occurrence, especially for learners whose first language (e.g. Chinese) lacks articles (Wang 2010). Lee (2007) claimed that 'even highly advanced language users make English article mistakes for various reasons.' Indeed, I notice that the EFL learners in Taiwan encounter this learning difficulty, and that their teachers also feel helpless about how to assist them in tackling it. This study, through English-Chinese contrastive analysis, concentrates on the role of learners' first language in foreign language acquisition. More specifically, this study, in company with a cloze test of English article background

knowledge, which includes 13 contrasting sentential pairs with minimal deference in structure and function, qualitatively analyzes the English article usage in 182 compositions of EFL college students in Southern Taiwan by classifying the participants' article errors into three types (i.e. (1) 'overuse,' (2) 'underuse,' and (3) 'confusion')(Hasbún Hasbún 2009, Ionin, Ko & Wexler 2004, Wang 2010), explores whether Chinese determiners (*zhe(xie)* or *na(xie)*) and word sequence influence the students' English article usage in terms of countability and semantic features (definiteness and specificity)(Huang 1999, Li & Thompson 1981), and hopes to provide thoughts for English article instruction in Taiwan.

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Reading comprehension of multimodal text in children vs adults

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Multimodal texts that integrate words and pictures, such as comics and picture books, are increasingly used in education. However, how readers make use of the additional visual information to support their reading comprehension and whether how this ability change across age groups is not well understood. This study investigated how children and adults read text passages presented with different amount of visual information. Participants were 21 children (mean age = 10.2) and 42 young adults (mean age = 24.6) who were native Chinese readers. In the reading phase, participants read three 8-page short passages in Chinese in three picture conditions: (1) plain text (no-picture), (2) text with accompanying pictures on half of the pages (half-picture), and (3) text with accompanying pictures on each page (all-picture) in a self-paced reading paradigm. A Tobii Pro X3-120 eye-tracker was used during the reading phase to track participants' eye movements. After each reading, participants rated the passage on interest level, ease, and familiarity. Then they completed six short open-ended comprehension questions while the entire text was presented on the screen without pictures.

We measured three aspects of the reading, namely ratings, reading time, and comprehension performance. Data analyses using mixed-effects modelling were conducted for children and adults separately. In terms of reading ratings, children rated the all-picture condition as significantly easier relative to the half-picture

and the no-picture conditions. Relative to plain texts, adults perceived the half-picture and all-picture readings as significantly more interesting. In terms of reading times, the children group showed no significant effect of picture condition, suggesting that children focused on the texts regardless of the presence of pictures. In contrast, adults spent significantly longer time on pages with pictures relative to plain texts. In the halfpicture condition, adults spent significantly more time reading the words in the picture-less pages compared to the words on the pictured pages. These suggested that under some conditions, adults would preferentially take in the picture information instead of texts. In terms of comprehension questions, presence of pictures produced no significant effect on either accuracy or reaction time in children. For adults, when the questions have picture cues, accuracy rates were higher and response times to correct answers were faster. Critically, response times were slower for questions that had no picture cues in the pictured conditions relative to questions in the nopicture condition, suggesting that picture cues facilitated information encoding and retrieval, but at the expense of uncued information.

In sum, the study revealed interesting differences in how pictures affected reading performance in children versus adults. Contrary to some previous findings, it was found that children in upper primary school were text-oriented in reading comprehension, while adults were more picture-oriented. Although children reported that texts with pictures were easier, reading time and reading comprehension performance was unaffected. Adults reported that pictures increased the interest level of the passage and indeed their reading performance reflected additional attention to pictures. Adults were subject to the attention directing and cuing effects of pictures during reading, while children were relatively impervious.

A study on expectations of international students in Japan

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Yokohama College of Commerce was established in 1968. The Commerce Department has three courses: Commerce, Tourism Management, and Management Information. There are about 1,200 students, 80% of which are males and 20% are females, with about 100 faculty members including part-time instructors.

English is a compulsory subject for first-year, second-year, and third-year students. Students must take two English classes per week. They are placed in classes according to the results of an English placement test.

Partly because the college has ties with Beijing International Studies University for a student exchange program, it currently has 90 international students, including 66 Chinese and 14 Vietnamese students. These international students have some unique characteristics. They must be fluent enough in Japanese to understand lectures, and their future outlook is often different from their Japanese counterparts.

However, it is our impression that our international students are generally better than Japanese students in terms of English education. The advanced classes usually have a comparatively larger number of international students. We decided to find out the reason and future expectations and outlook of the international students in order to find ways to assist them in satisfying their hopes and requirements. First, we prepared an online questionnaire for international students to fill

in, and 22 students completed it. Concurrently, we conducted two interviews with three Chinese and one Mongolian students we randomly selected to collect further information.

This poster presentation will show our survey results, especially focusing on how our international students view English education at our college and their targets and hopes during college life. In turn, we, as their instructors, examined how we can help them realize their expectations, partly inspired by the results of the interviews.

The contribution of phonology or orthography in the lexical boost in priming

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[3]

We investigated the contribution of phonology or orthography in the lexical boost in priming. Bernolet et al (2014) and Santesteban et al (2010) found phonological relationships at the lexical level affect syntactic encoding during sentence production on the basis of the homonyms as the materials sharing the same orthography and phonology. Here we report two experiments investigating the existence of single phonological or orthographical level of representation would affect the way syntactic structures are selected and processed. When describing a dative verb which have different senses- e.g."打" in Chinese is the'fetch'sense in to "打了一碗水给某人 in the Chinese sentence " but the other 'knit' sense is in to ' 打了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人了一件毛衣给某人 in the Chinese sentence'— and these kinds of dative verbs we chose have the same phonology and orthography, Experiment 1 showed the homonym boost to dative priming. Experiment 2 revealed that, the only phonological information overlap between the head verbs of prime and target sentences still cause a boost to dative priming, based on the homophones sharing the phonology. Finally, the combinational analysis of Experiment 1 and 2 revealed that orthographical level do not enhance syntactic priming. Therefore，in the other words, for the homonym boost in the Experiment 1, actually it is only homophone rather than orthography that did work in the enhancement of the syntactic priming. We interpreted these results in terms of theories of syntactic encoding.

On the poly-functionality of *hao-bu-hao* in Mandarin Chinese: A usage-based approach

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Formally speaking, the expression *hao-bu-hao* falls under the well-recognized category of A-not-A question, a special interrogative device among the world's languages. However, scrutiny of daily conversation reveals that it differs from other A-not-As in that it displays various usages, some of which do not necessarily convey interrogativity. In Hu's corpus, for example, *hao-bu-hao* is said to (i) request the addressee's evaluation/consent, (ii) mark directives/prohibitions, and (iii) express refutation to the addressee's statement/presupposition when it acts as a 'question tag" Hu 2002. Later researchers, most of whom focus on the issue of grammaticalization, also observe cases in which *hao-bu-hao* has little or nothing to do with question-posing. For Peng & Fu (2008) and Zheng & Shao (2008), *hao-bu-hao* has developed a new usage associated with negation marking or strengthening. According to Gao (2009), *hao-bu-hao* following an assertion not only signals the speaker's stance/attitude on/towards what he himself utters but also reveals coherence between the assertion and the immediate interactional context. Pan (2009) argues that when there is a mismatch between the speaker's and the hearer's epistemic status, *hao-bu-hao* can be employed to correct the addressee's opinion or behavior. According to Wang (2011), when the routinized *hao-bu-hao* follows a non-imperative clause, it is felt emotion-charged and is intended to end a turn, much like the poly-functional exclamatory word ok in English. While Yu & Yao (2009) prefer to treat different variants of *hao-bu-hao* as the consequence of synchronic pragmatic construal, they do address uses which are not interrogative in nature. Finally, Tan (2010) points out that there is loss and gain in the history of *hao-bu-hao*, the latest use being as a tone-strengthening particle. Given the seemingly chaotic, miscellaneous functions of *hao-bu-hao* and conclusions that do not appear to converge, this paper is intended to provide a reasonable model of semantic network, based on written data in PTT corpus and oral data in Youtube videos. The framework adopted is 'Principled Polysemy" (Tyler & Evans 2003), an attempt to strike a balance between online pragmatic/contextual considerations and long-term semantic/mental representation. The underlying assumption is the "polysemy commitment", the idea that novel usages of a certain form result from the fact that speakers perceive such new usages as being somehow related to previous meanings already associated with the very form (Tyler & Evans 2003). With ample confidence, it is believed that the current study can be applied to other lexical units that share structural/semantic affinities to hau-bu-hao and hence be helpful for better understanding other ostensible interrogatives in Mandarin Chinese.

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ERP evidence for hemispheric equipotentiality from 8-10 year old children

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Lenneberg's critical period hypothesis proposed that both hemispheres of the brain are involved in children's language development. This theory is corroborated by findings showing a shift from bilateral brain activity pattern to left-hemisphere (LH) dominance pattern that occurs gradually from childhood to adolescence. This shift has been thought to reflect the consequence of brain maturation. However, little is known about the transformation of brain responses in the right hemisphere during the lateralization process in relation to children's language ability. To take a first step toward understanding the nature and consequences of leftward later-alization in language development, the present study utilized the event-related po-tential (ERP) and divided visual field presentation (DVF) techniques to investigate children's brain responses to syntactic information, with particular foci on the nature of RH activity and the relation between lateralization and reading compre-hension ability. We targeted children aged 8 to 10 years, as this age range is an im-portant phase wherein reading comprehension performance varies widely even though basic vocabulary and syntactic knowledge are already in place. 26 right-handed children were tested; all were native speakers of Taiwan Mandarin. Par-ticipants viewed and judged the grammaticality of 216 two-word Chinese phrases. Each phrase contained a centrally presented one-word syntactic cue (adverb / clas-sifier) followed by a laterally presented verb or noun, matching or mismatching the syntactic expectancy. ERPs from correctly judged trials revealed left-lateralized N400 and P600 grammaticality effects with right visual-field presentation only. To examine the relation between brain responses and language ability, participants were divided into two groups based on a median split of their on-line grammati-cality judgment performance. These two subgroups were comparable in age and numbers of males and females, but the higher-score group performed reliably bet-ter in the offline comprehension test than did the lower-score group. The subgroup results showed, for the higher-score group, a left-lateralized N400 effect but no re-liable P600 effect, and for the lower-score group, bilateral N400 and P600 effects. These results were consistent with prior findings from adults linking bilateral- or

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RH- P600 with more challenging language processing. Overall, these results also suggest a transition from bilateral to more lateralized language processing from children with poorer reading ability to better reading ability.

Effectiveness of chants vs. reader's theater on young EFL learners' oral reading fluency

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Reading as a complex process, in which the stage of oral reading fluency (ORF) being defined as including the components of word decoding accuracy and reading rate (LaBerge & Samuels, 1974), has been regarded as an important bridge connecting decoding and reading comprehension (Rasinski, 2010). This study compared effectiveness of chant versus Reader's Theater (RT) instruction on oral reading fluency between two groups of Taiwanese EFL third graders. Two intact classes were randomly assigned to receive either the chant or RT instruction. The instructional period lasted for nine weeks, including a two-week period for the pre-/post-test, and for the participants to fill in the respective version of questionnaire. A 162-word test passage My Pet Cat, adapted from Read Naturally reading program (Ihnot, 2001), was used as the pre-/post-test. Each group respectively received a 60-minute lesson per week. Three picture-books stories were transformed into the respective the chants and RT scripts, targeting 5 short vowels and 3 long vowels a, e, and o.

Results of learners' decoding accuracy analysis showed that the chant instruction was more effective than the RT instruction likely due to the reason that the strong beat and rhythm in chants help the participants analogize from the familiar vowel patterns to decode the unfamiliar words (Forster, 2006; Omari, 2001). Regarding learners' reading rate performance, the results revealed that the mean gain scores of the RT group was slightly higher than those of the chant group possibly due to the fact that the reading activities implemented and the emotional expressions trained to be produced in RT instruction provided strong intrinsic motivation for students to read the scripts repeatedly (Tian & Wu, 2012). Furthermore, the independent samples t-test results were in line with Rasinski, et al. (2016), which showed that both the chant and RT instruction were equally effective in enhancing students' oral reading fluency. Further analyses of the respective group's questionnaire responses revealed no significant difference between the two group concerning their learning motivation. However, the participants of the chant group were found to hold more positive attitudes toward the effectiveness of the instruction on promoting their word decoding accuracy and oral reading fluency compared to the participants of the RT group. It was likely that the rhythmic activities the participants of the chant group received could draw their attention to decoding of words and reading itself. Several educational implications and suggestions for future research are provided based on results of this study.

Mobilize your audience: Linguistic patterns of cognitive perspective-taking in storytelling

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Effective communication is highly emphasized and pursued in recent decades; storytelling, regardless of its form or media, has been a widely-adopted linguistic strategy fulfilling the magic of persuasion. Persuasion has been proven not limited to being agreed or disagreed towards the information provided; instead, strength of persuasion can be leveled, and a high level is the mobilization of information receivers (Craig & Blankenship, 2011). Mechanisms of persuasion like receivers' emotional engagement and cognitive empathy have been intensively researched (de Graaf et al. 2012), and the linguistic devices can create the tendency of sharing emotions. The linguistic devices are not only expressions (metadiscourse markers like logical markers and topicalisers) that aim to negotiate or influence the receivers' opinions and even beliefs (Dafouz-Milne 2008), but also perspective-taking altering devices, that is, the option of shift between the grammatical first person and third person (Igartua, Wojcieszak & Kim 2018). Consideration of options as such is to take into account the story-tellers' cognitive process.

Storytelling with the option of perspective-taking, as an art fulfilling various levels of persuasion (mobilization as a high level), has been explored in the field of business, political science and communication. Some studies adopted texts of a single perspective, however leading to inconsistent outcomes of perspective-taking applied to persuasion: zero effects, first-person over third-person, conditional effects mainly due to text genres (Kim & Lee 2018). Therefore, the present research proposes perspective-taking be altered in a single text, adopting the change of grammatical first-person and third-person with the consideration of clusivity (inclusive "we" and exclusive "we"), following the arc of "story of self", "story of us" and "story of now" (Ganz, 2011). Secondly, instead of only investigating what the receivers perceived when describing the persuasion level (Bal 1997, Christy 2017), the research focuses more on story-tellers' choice of perspective-taking and adopts the receivers' perception as a supplementary explanation. It remains inconclusive whether perspective shift may lead to mobilization (of one's action). The research indicates this linguistic strategy constructs the tendency of a higher level of persuasion.

The results showed that story-tellers shifted perspective-taking due to different intentions: encouraging self-reflection, intensifying tension, and creating an immediate change. In addition, the option of perspective-taking was influenced by story-tellers' evaluation of the audience's original perception upon issues to be delivered. The research concludes that proper arrangement of perspective-taking and more comprehensive understanding of storytellers' cognitive process could improve the tendency of mobilizing audience through storytelling.

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Individual differences in brain electrophysiological responses to nouns that denote emotions

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The ability to recognize and communicate emotions in the self and others is essential to our psychological well-being. For example, alexithymia, a personality construct, is characterized by difficulty in identifying and describing emotions in the self, as well as lack of awareness and understanding of others' emotions. It is therefore important to understand the representation and processing of emotion concepts. The word, alexithymia, itself literally means no words for feelings. However, research that focuses exclusively on words that denote emotion concepts has been limited. This study aimed to investigate processing differences of emotion concepts versus other concepts. More importantly, it also explored how gender and level of alexithymia might relate to these processing differences.

With the ERP approach, an experiment examined brain electrophysiological responses to two-character Chinese nouns that denote emotions (e.g., 喜悦 and 内疚) in comparison to nouns with emotional connotations, which either denote abstract emotion-laden entities (e.g., 胜利 and 过失) or concrete emotion-laden entities (e.g., 香槟 and 棺材). That is, level of emotionality was controlled across word categories. Emotionality had been shown in the past to facilitate semantic processing, leading to attenuated N400 evident over the frontal region. By controlling and partialling out the emotionality effect on word processing, we were able to look into representational distinctions across the three word categories. Twenty-five healthy participants (12 women) completed a lexical decision task. Their brain electrophysiological responses were recorded during the process. At the end of the experiment, they filled out the Toronto Alexithymia Scale. ERP data showed that emotion nouns were associated with less pronounced N400 relative to abstract and concrete nouns. The N400 amplitude differences between emotion and concrete nouns were evident in both hemispheres, whereas the differences between emotion and abstract nouns were more evident in the left hemisphere, indicating representational distinctions of emotion concepts versus other concepts possibly in both the verbal and the imagery systems. With regard to individual differences, the aforementioned differences appeared more pronounced among women relative to men, which may suggest that women, relative to men, tend to make clearer distinctions between conceptual categories. Further, for men, higher alexithymia scores were significantly associated with greater frontal N400 of emotion nouns.

That is, men with lower alexithymia scores appeared to have shown a greater ease in processing emotion nouns. There was, however, no evidence for such association among women. These findings demonstrated the moderating effect of gender on the processing of emotion concepts whereby men＇s self-assessments of alexithymia level appeared associated with their brain electrophysiological responses to emotion nouns.

The word length effect in the processing of Sino-Korean compounds

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The word length effect in visual word recognition generally refers to the phenomenon that longer words have a recognition disadvantage compared with shorter words. This inhibitory length effect was considered to appear as a consequence of sequential processing of sublexical units, contrasted with the null effect predicted from the parallel processing of letters or characters. However, based on the ELP database, New et al. (2006) reported a new phenomenon in which lexical decision was made faster for longer words. This facilitative word length effect was found only for words of 3-5 letters, with the null effect for words of 5-8 letters and the inhibitory effect for words of 8-13 letters.

While the word length effects has often been reported in English and other European languages, there was not much evidence for the effects in Chinese, Japanese, and Korean. The present authors have found different effects of word length in visual recognition of Hangul words, based on a series of behavioural experiments (see Bae et al. 2016) and a megastudy (Yi 2017) conducted with 30,000+ words. The results of the behavioral experiments, focusing monosyllabic and bi-syllabic Sino-Korean words written in Hangul, showed the facilitative effect of word length: Mono-syllabic words had more of a disadvantage in the lexical decision task. In addition, the megastudy including Hangul words of 1-5 syllables showed both the facilitative and inhibitory effects of word length. Word length showed the facilitative effect for words of 1-3 syllables and the inhibitory effect for words of 3-5 syllables. Tri-syllabic words were found to be the most advantageous in visual word recognition. The U-shape curve of word length effect found in Korean was similar to that of New et al. (2006).

The facilitative word length effect reported in New et al. (2006) and Yi et al. (2017) is hard to explain with the parallel vs sequential processing paradigm. We tried a new explanation, in which two factors matter. One factor is related to the amount of available information. For longer words, more information is available to understand the meaning of a word. On top of that, longer words have less neighbors to compete for recognition. So, longer words have an advantage for fast recognition. However this process has a limitation with too long words. The cost to extract and integrate too much information would exceed the benefits longer words provide. As a compromise an ideal word length would emerge for each language and script. It is three syllables in Korean and 5-8 letters in English.

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Mandarin-English bilingual children's code switching in chess teaching and playing

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Code switching (CS) is defined as "The alternate use of two or more languages in the same utterance or conversation" (Gumperz 1973). From a sociolinguistic perspective, code switching is used when individuals master both language skills (Poplack 1980). Based on the results of Reyes (2010) study, she proposes that there is a positive relationship exists between bilingual code switching and language proficiency. She also indicates that children may use code switching for achieving more complicated purposes to be better communicators. For a bilingual child to be a successful communicator, they should have good communicative competence, which entails the ability to adapt one's language use on-line in accordance with relevant characteristics of the situation (Genesee 2002). The present paper is going to investigate two questions on the theoretical basis of Reyes's (2002). The first question is when and why did the child code switching between Mandarin and English during teaching the rule of chess and playing chess. The second question is that what characteristic will show in the child's code switching performance when the child tries to explain rules of chess. The results show that during a 24-minute tapping, the target participant produced three kinds of code switching strategies and used code switching as different functions to keep the conversation going, which support the characteristics of a good communicator with communicative competence. The implication of helping bilingual children doing code switching during communication at home and in school are also discussed.

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The neural mechanisms of mentalizing during social interaction in autistic adults

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Mentalization is the ability to infer another person's mental state, which is necessary to communicate with others in a socially accepted way. The deficit of mentalizing during social interaction is commonly found in individuals with autism spectrum disorder (ASD). We aimed to clarify the neural mechanisms of these mentalizing processes between ASD adults and healthy controls by using the social animation task on fMRI. The social animation task featured two triangles moving either interactively with social intentions or randomly. Participants were instructed to response if social interaction was engaged between two triangles on fMRI by pressing button. Their parents were interviewed to report the Social responsiveness scale (SRS) and the Chinese version of Autism Diagnostic Interview, Revised (ADI-R), respectively. Both the ASD and control groups produced common brain activation in the bilateral temporo-parietal junctions (TPJ), bilateral middle temporal gyri (MTG), and left inferior frontal gyrus (IFG). The ASD group produced additional brain activation in the left precuneus, left inferior parietal lobule (IPL), right middle frontal gyrus, and right superior frontal gyrus as compared to controls. Further correlations were conducted to explore brain-behavior relationships between brain activation and interview scores (ADIR and SRS). There were marginally significant negative correlations between the right middle frontal/left precuneus activation and the Social Awareness of the SRS in the control group. This result indicates that the greater activation in these two regions may be associated with better functions of social awareness. Also, greater IPL activation was positively correlated with the ADIR Qualitative Communication Abnormalities in the ASD group, suggesting that greater activation in this region may be related to poor communication skills. In conclusion, the findings suggest that adults with ASD might spend a great deal of effort on mentalizing during social interaction. Moreover, adults with ASD might have deficits on the ability to understand another person's mental states revealed by the social animation task.

The role of entrenchment in bilingual production of motion construction: Evidence from structural priming

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Entrenchment plays a crucial role in language acquisition in that with repeated exposure to linguistic forms, concrete exemplar-based constructions may gradually develop into abstract schemas (Blumenthal-Dramé 2012). Prior studies suggest that highly entrenched constructions lead to more rapid processing (Siyanova-Chanturia, Conklin & van Heuven 2011, Wolter & Gyllstad 2013). However, for L2 learners, unbalanced language input between L1 and L2 probably leads to asymmetric degree of entrenchment with the two language representations (Chan 2010). It still remains unclear whether entrenchment affects L2 learning to the same extent, and whether structure entrenchment is modulated by bilinguals' relative level

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with both languages. The present study, using structural priming paradigm, investigated the effect of canonicality and language dominance on L1 and L2 syntactic choice of motion constructions (e.g., "The man drove into the cave" (canonical and more entrenched in both L1 and L2) vs. "The man in the car entered the cave" (non-canonical and less entrenched in both L1 and L2)). One hundred and twenty-four late Chinese–English bilinguals (mean age = 20, SD = 0.8; mean length of formal English learning =11, SD = 2) participated in four structural priming experiments respectively, two within-language experiments (L2-L2 & L1-L1) and two cross-linguistic experiments (L2-L1 & L1-L2). In all four experiments, they first read a prime sentence of either a canonical or non-canonical structure in either L1 (Chinese) or L2 (English), and then described an animated cartoon in either the same language as the prime sentence or the other language. The results demonstrated the effect of canonicality on both within-language (when both primes and targets were in Chinese) and cross-linguistic structural priming (when primes were in Chinese and targets in English, but only for canonical target responses). In addition, we found that structural priming effects were affected by language dominance. Specifically, the effect of canonicality was observed only in the tasks with Chinese primes (primes in the participants' dominant language). We discussed these findings in terms of representation entrenchment under the usage-based account (Bybee 2006) and the model of bilingual representations of lexical and syntactic information (Hartsuiker, Pickering & Veltkamp 2004).

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The time course of activation of morpheme, semantic and orthographic information in Korean derivational suffixed word

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The purpose of this study is to investigate the activation patterns of morphological, semantic and orthographic factors of Korean derivational suffixed word using ERPs(event related potentials). The stimulus consists of a pair of prime and target, and is composed of a pair of Kmorphologically related(e.g. 'dancer'-'drinker'), semantically related(e.g. 'yawn'-'sleepiness'), orthographically related(e.g. 'catalyst'-'eye') and unrelated('a music book'-'woodcutter') condition. The experiment was carried out using masked priming task with 57ms SOA(Stimulus Onset Asynchrony). In the behavioral result, positive priming effect of morphologically related condition and semantically related condition but not in orthographically related condition. The ERP data showed N2(about 160-380ms) component which morphologically related condition produced less negative amplitude and semantically related condition have significant statistical tendency with decreasing negative amplitude compared to unrelated condition. On the other hand, orthographically related condition tends to increase positive amplitude compared to the other three conditions. Furthermore, positivity going wave in early LPC(about 380-550ms) elicited by semantic relation was larger than unrelated condition. Subsequently, morphologically related condition elicit the larger negative going wave contrast to unrelated condition in late LPC(about 550-750ms). Only morphological priming effect is observed in pre-lexical processing which indicates that it supports the decomposition model. Also, there are two different time courses between semantic and morphological component in post-lexical processing. It confirmed that morphological, semantic, and orthographic component are treated at different time courses in the Korean derivational suffixed word.

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