2021 Postgraduate Research Symposium on Linguistics, Language, and Speech

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Introduction of the PRSLLS 2021

The Department of Chinese and Bilingual studies of the Hong Kong Polytechnic University was excited to organize the Postgraduate Research Symposium on Linguistics, Language, and Speech (PRSLLS), that was held on 18-19 June, 2021. The symposium was an online conference due to COVID-19 situations worldwide.

The symposium provided an inter-institutional forum for postgraduate research students from different disciplines to present and discuss their works, exchange ideas and share experiences. Scholars and experts of linguistics, speech and language development or acquisition, and communication disorders submitted abstracts.

The programme of the symposium included two workshops for postgraduate research students on research presentation skills and academic writing, as well as using different software for the statistical analyses of (computational) linguistics research.

There were several themes for PRSLLS 2021. The organizing committee brought these subjects in one place and encouraged sharing and discussion among the participants from all around the world. The themes included Language processing & acquisition, Bilingualism, Computational modelling, Neurolinguistics & psycholinguistics, Cognitive processes in translating & interpreting, Communication disorders, and Health communication and language.

Welcome from the Department of Chinese and Bilingual Studies at the Hong Kong Polytechnic University

Initiated by the Faculty of Humanities of the Hong Kong Polytechnic University (PolyU), *The Postgraduate Research Symposium on Linguistics, Language, and Speech (PRSLLS)* was organized by the Department of Chinese & Bilingual Studies (CBS) this year. The symposium has provided opportunities for research graduate students for sharing their newest discoveries and for exchanging ideas and networking. The symposium has a long tradition of international collaboration, with partners in China, Macau, and Europe. This year, colleagues from Australia joined us as our new partner. This year's PRSLLS is virtually linked with the 29th *Joint Workshop on Linguistics and Language Processing (JWLLP)* hosted by PolyU's English department and with shared keynotes for both events, https://www.polyu.edu.hk/engl/event/JWLLP2021/. Christian Burgers's (VU Amsterdam and University of Amsterdam) delivered his talk on the persuasive power of figurative language is both timely and insightful and highlights a crucial function of language and human behaviours that has not been fully understood yet. We gave our great gratitude to the three exciting keynotes by Prof. Christina Meng Ji (Sydney), Dr. Bodo Winter (Birmingham) and Prof. Alessandro Lenci.

PRSLLS provided an inter-institution forum for research students from different disciplines to present and discuss their works, exchange ideas and share their experiences in research. This year's version, like all other gatherings, was held virtually, with social events. We look forward to seeing you in person at our next workshop/symposium.

Partnership

The University of Sydney, University of Macau, Kyung Hee University

PRSLLS 2021 Organizing Committee

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Mr. Eddy CH WONG: Digital media (CBS)
Mr. Wenze LU: Publication (CBS)
Ms. Lavinia SALICCHI: Coordination (CBS)

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Proceedings of 2021 PRSLLS

Keynote presentation 1: *Smart parrots or baby humans? The knowledge of*
language in men and machines

Professor Alessandro LENCI

State-of-the-art natural language processing models have reached an unprecedented ability to "mimic" human linguistic skills, from machine translation to text generation. But how much of this success depends on their having really acquired human-like abilities to learn and use language? One key feature of human cognition, which grounds natural language too, is a particularly sophisticated ability to learn, from a relatively limited exposure to data, knowledge that is general enough to abstract from the input it has been learnt from and can be therefore applied to interpret unseen situations. Understanding to what extent current machines are able to match this human-specific feature lies at the core of the current debate in computational linguistics and AI. However, this entails not only exploring the nature of the generalizations in machines, but also having a clear view on the nature of linguistic generalizations in humans. The former still seem to be far less abstract than human ones, but on the other hand much evidence also suggests that human knowledge of language is less abstract than some theories claim to be. In turn, this raises the question whether we ask machines to master some idealized notion of language, or rather we want them to use language like humans do. This is an old issue that divides linguistic theories too, but it is crucial to understand what the successes and failures of machines can teach us about human language.

Professor Alessandro Lenci is a professor of the Department of Philology, Literature and Linguistics of the University of Pisa, Italy. He is an expert in Computational Linguistics, especially Distributional Semantics. He contributed to psycholinguistic phenomena modeling such as verb-argument selections, metonyms processing cost, and lexical complexity, as well as automatic detection of semantic relations like antonymy and hyponymy. Together with Marco Baroni, he created the Distributional Memory framework, a Distributional Semantic Model widely used in psycholinguistic modeling tasks.

Keynote presentation 2: Consumer-Adaptive Health Translation

Professor Christine Meng JI

Around the world, health research, knowledge and information is being translated, consumed across industries, societies, languages, cultures, communities. The way we receive, understand, appraise, apply translated health information has an important impact on the development of our health literacy, and everyday health behaviours. Health translation can help reduce widening social and health inequalities, improve the accessibility of health information, healthcare, and medical support to diverse populations, and help develop the health literacy of the global public as a most cost-effective approach to health risk management and disease management. The challenge of adapting these clinical principles from public health to health translation is the lack of theoretical frameworks to inform data-intensive studies of English and multilingual health information. Empirical Translation Studies represents a highly interdisciplinary paradigm in translation studies. ETS is known for the use of data and quantitative methods in the study of translation products and processes. Over the past few decades, much of the scholarly debates in ETS has focused on exploring theoretical hypotheses such as translational universals, norms, or laws. The generalising approach to ETS assumes that the use of translation methods and strategies is conditioned by high-level factors such as the imbalance between source and target cultures, or distinct cognitive patterns between source and target languages, and that these high-level factors can account for the highly diverse expectations of translation among target readers. My current work explores the complexity, diversity, variability of the abilities of the target readers to understand, appraise, utilise translated health materials within the framework of consumer-adaptive health translation (CAHT). The delivery of quality health translations, from nutrition guidelines, clinical instructions, to public health advice and health educational materials, requires the development of robust, reliable empirical research methods to examine, evaluate the usability of translated health resources and information. Clinical guidelines have identified key areas of health information usability which can be adapted for health translation research: information understandability, relevance of health materials to the intended readers, actionability, extensibility (ease to apply health materials in diverse, complex settings). We are working on the development of machine learning algorithms, quantitative models to explore the relations between the profiles/backgrounds of consumers and the types of health readings/materials of varying usability, as well as related research issues such as technology-mediated health translation.

Professor Christine Meng Ji is an associate professor in School of Languages and Cultures at the University of Sydney. She specialises in empirical translation studies, especially data-driven multilingual corpus analyses. She has published on environmental translation, healthcare translation, statistical translation stylistics/authorship attribution, and international multilingual education (statistical translation quality evaluation). Her research has been supported by the British Academy, Japanese Society for the Promotion of Sciences, the Australian Research Council, Economic and Social Research Council of the UK, etc.

Workshop 1: An introduction to statistical modelling and linear mixed effects models with R

Dr. Bodo WINTER

The language sciences are undergoing a quantitative revolution, away from significance tests and towards multifactorial statistical modelling. This two-hour tutorial provides a high-level introduction to statistical modelling with R, with the aim of giving a broad sweep overview of the generalized linear model framework all the way up to linear mixed effects models. This toolkit has wide applicability in a number of different subfields of linguistics: everything that can be done with significance tests can be done with statistical models, and more. I will also talk about reproducibility and how important it is to use R and data sharing websites for reproducible analysis work flows. Given the time constraints of this brief event, we won't be able to do a lot of hands-on work with R, but I will make scripts available that allow students already familiar with R to do further studies. Everybody is welcome, and no special mathematical knowledge or experience with programming is required.

Dr. Bodo Winter is a Senior Lecturer in Cognitive Linguistics at the Department of English Language and Linguistics at the University of Birmingham, as well as a UKRI Future Leaders Fellow and the Editor-in-Chief of the interdisciplinary journal Language & Cognition. Dr. Winter has received his PhD in Cognitive and Information Sciences from the University of California, Merced. His research focuses on the intersection of language and thought, particularly in the domain of metaphor, gesture, and numerical communication. Dr. Winter has written a textbook called "Statistics for Linguists: An introduction using R" and taught statistics workshops for linguists at more than a dozen institutions.

Workshop 2: Starting your Thesis Journey-Writing Effective Thesis Introductions via Personalization and Introspection

Dr. Marshall YIN

This workshop will focus on the introduction of your thesis. Your introduction need not be boring. Your research is a lifelong commitment and journey. By sharing the motivation of your research, why it is important to you, and what you hope to achieve for humanity, you can draw the readers' attention and make your entire thesis meaningful and insightful. Join me in opening your mind and perspectives on what your thesis introduction can become!

Dr. Marshall Yin is a language instructor at the English Language Centre of the Hong Kong Polytechnic University. He teaches postgraduate research students on academic writing and presentation skills. His research interests include intercultural communication, special needs, and social media.

Social event

The organizing committee believes that expanding the network is important to research students. We are pleased to invite all postgraduate research students to join our social event of this symposium, to talk, to drink, to know, to share, to speak, to listen, and most importantly, to make friends.
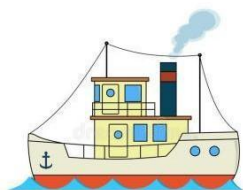
"We are on the same boat"

We are on the same boat

我們都坐同一條船

我们都坐同一条船

Siamo sulla stessa barca

......

Session Moderator

Thank you to the following committed and diligent individuals who took on the session moderator roles during this conference.

Applied Linguistics session

Max Diaz (The Hong Kong Polytechnic University)

Health Communication session

YanMeng LIU (The University of Sydney)

Neurolinguistics and Psycholinguistics session

Cai Cai Zhang (The Hong Kong Polytechnic University)

Language Education session

Hua Congchao (Shenzhen Technology University)

Language session 1

Stephen Politzer-Ahles (The Hong Kong Polytechnic University)

Language session 2

Yu-Yin Hsu (The Hong Kong Polytechnic University)

Corpus and Computational Linguistics session

Amelia Jing LI (The Hong Kong Polytechnic University)

Speech session

CHEN Si Sarah (The Hong Kong Polytechnic University)

Poster session

Elaine YL KWONG (The Hong Kong Polytechnic University)

Reviewers

We sincerely thank the following reviewers for their comments and insights on the submitted papers. Your work has been greatly appreciated.

Muhammad AFZAAL

Beth Yin ZHONG

Boren ZHANG

Brian Shaoxiong XU

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Chanyuan GU

Emmanuele CHERSONI

Cymie NG

Eddy CH WONG

Elaine KWONG

Eujin

Frank HUA

Jing CHEN

See Lok Jason KAN

Lavinia SALICCHI

Ludovica PANNITTO

Min Ney WONG

Raymond FONG

Rok SIM

Rui LIU

Siyu LEI

Tempo TANG

Yanru XIN

Xinyi CHEN

Xuejun YE

Yanmeng LIU

Yingying PENG

Limin YUAN

Ziqian WANG

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Best Poster Presentation

Miss QU Congyi, the Hong Kong Polytechnic University

Best Oral Presentation

Mr. LU Wenze, the Hong Kong Polytechnic University

Miss CHEN Siying, the Hong Kong Polytechnic University

Miss GUALDONI Eleonora, Universitat Pompeu Fabra

Best paper

Miss QU Congyi: *The Effect of a Pedagogical Deictic Gesture on L1 Chinese Learners' Acquisition of the L2 English Past Tense*

List of Audience and Presenter

Name	Organization
LIU Xi	University of Edinburgh
XIA Lei	The Hong Kong Polytechnic University
Annie Cheung	Polytechnic University of Hong Kong
Antoine Salome	Freie Universitat, Berlin
Au Hing Yee	Heep Hong Society
Beiting Molly	Temple University
Chan Ka Man	The Hong Kong Polytechnic University
CHAN Nok Chin Lydia	Stockholm University
Chan Pui Yu	The Hong Kong Polytechnic University
Chan Sze Yuen	The Hong Kong Polytechnic University
Chan Wai Tung	The Hong Kong Polytechnic University
CHAN Yin ling eva	CNCNS SPECIAL SCHOOL

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List of Audience and Presenter

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Chen Jieyu	Hong Kong Polytechnic University
CHEN Siying	The Hong Kong Polytechnic University
CHEN Zhuoan	The Hong Kong Polytechnic University
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Cheung Joyce	Hong Kong Polytechnic University
CHO Won Ik	Seoul National University
Chou Man Jun	Hong Kong Polytechnic University
Chow Wing Hei	The Hong Kong Polytechnic University
David Sure	University of Bangor
Dennis Tay	The Hong Kong Polytechnic University
Du Wen	Han Kou College
Eva Tse	Hong Kong Polytechnic University
FENG Yan	The Hong Kong Polytechnic University
Francis Lo	The Hong Kong Polytechnic University
Gao Fei	University of Macau
Gu Chanyuan	The Hong Kong Polytechnic University
GUALDONI Eleonora	Universitat Pompeu Fabra
HAMDANI Saboor	The Hong Kong Polytechnic University
Helen Wong	The Hong Kong Polytechnic University
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HUANG YINGSHI	/
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Leung Teresa	HKSYC&IA Chan Nam Chong Memorial School
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Li Kwan Yung	/
LI Sirui	Hong Kong Polytechnic University
Li Yingying	The university of macau

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Ng Nicole	Hong Kong Polytechnic University
Ng Wai Yee	/
Niki Yu	The Hong Kong Polytechnic University
PARTI Gabor	The Hong Kong Polytechnic University
PEDINOTTI Paolo	Università di Pisa
Peggy Chan	The Hong Kong Polytechnic University
PENG Yingying	The Hong Kong Polytechnic University
QIU Han	The Hong Kong Polytechnic University
QU Congyi	The Hong Kong Polytechnic University
Rachel Chan	Hong Kong Polytechnic University
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Snape Neal	Gunma Prefectural Women's University
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WONG Eddy CH	The Hong Kong Polytechnic University
Wong Enoch	The University of Hong Kong
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XIE Chenwei	The Hong Kong Polytechnic University
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YANG Yuqing	Xi'an Jiaotong University
Yau Ching man	TTMSSD
Ye Xinyi	Hong Kong Polytechnic University
Zhang Cuiji	University of Macau

Conference Proceedings (Accepted Abstracts)

Figurative language and persuasion: The effectiveness of metaphor and hyperbole in hotel advertisements

CHEN Zhuoan

Despite the widely accepted assumption that figurative devices are the critical persuasion instruments in advertisements, few, if any, studies have specifically examined the impact of figurative language in tourism discourse on customers' perceptions and opinions (Jaworska, 2017). Amid calls for more empirical evidence on the effectiveness of figurative language in tourism discourse, a survey-embedded experiment is undertaken to investigate the extent to which figurative language in hotel advertisements, especially metaphor and hyperbole, influences consumers' attitude and purchase intention. Attitude and purchase intention are frequently used in marketing research to reflect the persuasive power of promotional discourse (Wu et al., 2017).

This research includes norming studies and the main trial. To increases the external validity of findings (Hart, 2018), stimulus materials are selected based on real hotel websites in Hong Kong, Shanghai, and Taipei. I first conduct norming studies to ensure the stimuli used in the four conditions (metaphor: present, absent; hyperbole: present, absent) differed only in terms of metaphoricity or extremity and no other vital aspects (Tay, 2020). A total of 1260 participants are recruited from Amazon Mechanical Turk, an online survey platform, to rate the four stimuli in terms of metaphoricity, extremity, naturalness, appropriateness, extremity, imageability, understandability, and novelty. The Kruskal Wallis test shows that both the four stimuli are perceived as relatively natural, appropriate, imageable, and understandable. The statements that contain metaphorical expressions enjoy the highest level of metaphoricity, but the statements that contain hyperbolic expressions are not perceived as more exaggerated than other statements. Therefore, to be usable, stimuli are adapted based on the feedback participants provided.

Second, in the main experiment, 240 participants will be recruited and randomly assigned to one of the four conditions. After reading the stimulus text, participants will be asked to answer questions that measure the dependent variables: *Attitude* and *Purchase Intentions*. Both *Attitude* and *Purchase Intentions* will be measured on 7-point Likert-type scales (e.g., "What is your attitude towards this hotel?"; 1—unfavourable, 7—favourable). Participants will also be required to provide demographic questions about their gender, age, and native language.

The current research aims to investigate the extent to which different figurative devices (metaphor and hyperbole) have impacts on viewers' perceptions and opinions. It will offer practical implications for hotel practitioners and website designers who can apply the findings to improve the quality of hotel websites and attract more customers.

The interaction between metaphor use and psychological states: a mix-method
analysis of trauma talk in the Chinese context

QIU Han

Introduction

Metaphors occur at a substantial rate in the description of intense and complex
emotional feeling. A particularly interesting contexts is how people suffering from
psychological trauma use metaphors to describe their thoughts and feelings. While the
prevalence of metaphors in trauma talk has been widely acknowledged, the
relationships between the two were rarely explored from a quantitative perspective.
This study reports metaphor usage profiles of trauma victims as associations between
key metaphor variables and investigates how the speaker's overall degree of trauma
could be predicted using these variables.

Methods

46 interviews with people who had experienced the 2019 social unrest in Hong Kong
were analyzed. At the level of metaphor use, categorical data analysis was adopted to
examine potential interactions between the metaphor variables. At the subject level,
correlation analysis and multiple regression were performed to examine the
relationship between trauma and metaphor use.

Results

The results suggest that different target categories of metaphors show distinct
preferences toward novel and conventional metaphors and toward different emotional
valence. Negative metaphors, metaphors about the self, others, personal situation, and
those from the observer perspective were found to be relevant to the experience of
trauma.

Conclusion

The findings show how metaphor usage patterns that are invisible to qualitative
analyses could meaningfully inform the study of metaphors and the understanding of
trauma. The interpretation of quantitative patterns from a discourse analytic
perspective further promotes the translation of quantitative observations into practical
evaluation and the treatment of trauma. We also show how statistical methods with
different theoretical underpinnings may generate complementary insights into the
interplay between trauma and metaphor and lead to a deeper understanding of the
complex, dynamic nature of metaphor use.

A Comparison of Chinese and Hong Kong English Second Language Textbooks in Relation to Gender

LI Haiqing

Introduction

In recent years, with the emergence of women's movements, such as the #MeToo movement and the growth of activist feminism, there has been a progressive increase in awareness of the significance of gender education. One of the crucial and primary sources of gender education concerns education in schools, which is based on textbooks. This is echoed through Bandura's social cognitive theory, which states that people adapt behaviours, in addition to direct responses to acquired behaviours, as well as through learning from role models and by imitating behaviours. In this context, textbooks represent a significant model for the instruction of teachers and the adaptation of student learning. Students also obtain their gender-related knowledge, attitudes, and behaviours from the descriptions of gender presented in textbooks.

Methods

This paper considers a combination of qualitative and quantitative methods to explore gender education in textbooks. Through a quantitative analysis of the proportions of male and female characters, pronouns, adjectives, etc., a visual representation of the differences between men and women could be obtained. A qualitative study will be conducted based on a critical discourse analysis by selecting specific scenes for discussion, with a view to uncovering the ideologies, beliefs, and values hidden in the discourse and supplementing the inadequacy of quantitative analysis in probing the underlying causes.

Results

This study concludes that the issue on gender education in Hong Kong and Chinese textbooks (i.e. the stereotypical perceptions of male and female) have been reduced yet, not transformed intrinsically, with men remaining dominant and women being passive.

Conclusion

In response to these issues, the study attempts to recommend remedies that include raising awareness among textbook authors and a more balanced approach to teaching among teachers.

Health Communication session

Discoursal Conflicts: Reports on China's Handling of Covid-19 among Chinese and Western Media Representations

CHEN Chuanren

Western media are strongly and subjectively prejudiced when reporting China, and to a large extent Covid-19 has deepened such prejudice. By employing corpus software like Sketch Engine and AntConc, this paper attempts to quantitatively and qualitatively analyze Western and Chinese mainstream news outlets' reports on China's response to Covid-19 through online Coronavirus Corpus and self-designed Western mainstream media and Chinese mainstream media corpora covering NYT, FT, Xinhua News, China Daily, Global Times etc from January to December, 2020. Results reveal that English language media including mainstream news outlets in US and UK employs strong discriminatory dictions ideologically and frequently and they are different in report focus compared with Chinese media. And Chinese media maintain strong confidence in path and culture of socialism with Chinese characteristics. Such differences in news reports are highly related to the decisions, measures and effects of UK, US and Chinese governments' different ways of handling to Covid-19. The different results demonstrate the Chinese government's ultimate philosophy of "people-oriented, life first" in pandemic prevention and control, as well as its strong power in cohesion, decision-making, and execution.

Key words: media reports on Covid-19; discoursal conflicts; corpus linguistics

Effect of official social media communication on public engagement in different health crisis stages: an exploratory study on Chinese official COVID 19 communication

LU Wenze & NGAI Sing Bik Cindy

Introduction

Effective social media communication between governments and publics plays a crucial role in preventing citizens from panic during the COVID-19. While many studies have examined the use of social media during the pandemic crisis, a research gap exists in investigating government social media communication strategy and its effect on public engagement at specific pandemic crisis stages. This study aims at examining how the Chinese government communicates and engages with the public at different COVID-19 crisis stages on social media. To examine the health content theme and transparent message style of COVID-19 related posts on official social media, a combination with the Crisis and Emergency Risk Communication (CERC) model and health communication theories is applied to develop an integrated framework, determining the public engagement effects during three crisis stages (i.e. initial event/maintenance stage, resolution stage, evaluation stage).

Methods

As an exploratory study, quantitative content analysis was employed to scrutinize 900 COVID-19 posts on the government-owned social media platform - *People's Daily*'s Sina Weibo account at three crisis stages, and coding was performed on three two dimensions: health content theme (four sub-dimensions) and transparent style (three sub-dimensions). The coding was conducted by the first author, the primary coder, and a well-trained coder who possesses a postgraduate degree in communication. The measure of interrater reliability was based on the co-coding of 180 posts from the data pool. Public engagement was measured by the number of shares, comments, and likes. The percentage distribution calculation and one-way ANOVA followed by a post-hoc Tukey test were employed to generate the results.

Results

Our results revealed that a variety of content themes and transparent style was employed by the government to communicate about COVID-19 with the public on social media at the three crisis stages. Yet different levels of engagement were witnessed at different crisis stages. There is a strong need for disease prevention information at the initial event/maintenance stage while reassurance and government actions are highly valued at the resolution stage. Interactive features promote public engagement in key crisis stages.

Conclusion

Public engagement could reveal public's attitudes and perceptions. Given that public's trust on governments may be affected during crises, governments are advised to utilize different content themes and transparent strategies at different crisis stages. The insights can help governmental organizations understand publics' concerns and raise public's health awareness and persuade them to take actions to curb the spread of the disease at various crisis stages.

Neural mechanism of lexical tone perception in Mandarin-speaking older adults

FENG Yan

Introduction

Older adults suffer from hearing loss and cognitive decline, and are reported to have difficulty in speech perception. Previous studies about the aging effect on the perception of segments have observed increased neural excitability as a brain compensatory mechanism for the perceptual decline in older adults. However, the neural mechanism of the perception of suprasegment (e.g., lexical tone) in older adults remains unclear. Mandarin is a tonal language and tones varying in pitch height and slope could distinguish lexical meanings. In this study, we intend to investigate the neural mechanism of lexical tone perception in older adults speaking Mandarin.

Methods

Twenty young adults aged 22-30 years (10 males) with normal hearing level and cognitive ability, and 21 older adults aged 61-82 years (12 males) with mild hearing loss and normal cognitive ability were recruited. All participants were strongly right-handed and spoke Mandarin fluently. None of them showed a history of psychiatric illness or experience of formal musical training. Lexical tone continuum with nine stimuli only differing in fundamental frequency was generated from /i/ with high-level tone ("衣", clothes) to /i/ with mid-rising tone ("姨", aunt). An oddball paradigm was used, and standard stimuli, within-category deviant stimuli, and between-category deviant stimuli were chosen individual-dependently according to the category boundary of tone identification. During electroencephalography recording, participants were asked to press a mouse using left and right thumbs simultaneously when they heard a different sound stimulus. Response accuracy of three stimuli, scalp distribution, amplitude, and peak latency of N1 (80-150 ms), P2 (150-250 ms), and P300 (390-550 ms) were contrasted between the two groups.

Results

Consistent with previous studies, compared with young adults, a significantly larger N1 and P2 was found in older adults. Older adults also showed a shorter peak latency of P2, and a posterior-to-anterior shift of P2 in scalp distribution. Besides, older adults showed a longer peak latency of P300 for between-category deviant than young adults, although no significantly different response accuracy was observed.

Conclusion

Aging was associated with the increased neural excitability and neural reorganization in early auditory and phonological processing of lexical tone. For later phonological processing, the prolonged neural excitability compensated for the potential perceptual decline of between-category lexical tones, thus older adults showed intact between-category discrimination in behavioral performance.

Neurolinguistics and Psycholinguistics session

Visual features predict human agreement on object naming, and graded category membership: insights from a language & vision analysis

GUALDONI Eleonora

Introduction

Research on how humans *conceptualize* objects originated in psychology, inspiring an interpretation of naming variation in terms of taxonomic shifts, and suggesting a *typicality* effect (Rosch et al., 1976; Jolicoeur et al., 1984). Typicality also explained *agreement* on naming choices (Snodgrass and Vanderwart,1980). However, data collections were limited, and the employed stimuli simplistic drawings. ManyNames (Silberer et al., 2020) is a large-scale dataset containing 36 naming annotations for 25K real-world images, overcoming previous corpora's limitations. Analyses (Silberer et al., 2020) showed that there is *consistent variation* in the names chosen for objects. Moreover, a taxonomic view cannot explain a good portion of data: *cross-classification* is often attested, meaning that names pointing to alternative aspects of an object can be chosen for the same image (e.g. *woman* or *skier*). We test whether visual features, such as typicality, can predict naming agreement. Moreover, we use those features to predict the multiple categories whose images are graded members.

Methods

With the features produced by a CNN (Anderson et al.,2018), able to recognize high-level visual properties (Krizhevsky et al., 2012), we compute a *prototype* for all the categories in MN (where all the images' preferred names constitute a category). We test if agreement on an image's name can be predicted from its typicality for that category (approximated as *cosine similarity* to the prototype), through a logistic regression. Moreover, for the images labeled with multiple names, given the information about their typicality for all the categories in our *conceptual space*, we output the candidate names through a probabilistic model.

Results

Typicality is predictive of agreement: the more typical the visual representation of an object is of its category, the more humans agree on the object's name. This confirms our expectations. Moreover, with this feature alone, we can predict first names with 82%, second names with 47%, and third names with 25% of accuracy (chance=1.4%).

Conclusion

We enrich past views of object naming, providing details about the nuances of the phenomenon, through the analysis of the to-date largest scale dataset of human

annotated real-world images. Typicality is predictive of naming variation: depending on their visual features, referents are graded members of multiple categories. Therefore, our computational models of referring expressions generation, currently outputting mutually exclusive labels, must be improved to reach human flexibility in categorization.

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The delivery of Chinese language teaching within the framework of Curriculum for Excellence in Scotland

LIU Xi

Introduction

This article discusses and analyses the delivery of Chinese language teaching within Curriculum for Excellence (CfE), the national curriculum programme in Scotland. It aims to understand the adaptation of Confucian model behind Chinese language education in the Scottish inclusive model. First, the article analysed the requirements, expectations and potential challenges of modern language teaching and learning in the policy discourse of CfE. Second, it looks at the lesson plans designed by Chinese teachers with Confucian-heritage educational background to understand the suitability in the context of CfE.

Methods

The article conducts a qualitative case study mainly through document analysis.

- Thematic coding - Based on the OECD Learning Framework 2030, core texts in CfE discourse were categorised and coded into three domains: knowledge, skills, and attitudes and views.
- Content analysis - Three complete lesson plans were discussed in terms of teaching-learning objectives, practice and activities, and teaching models.

Results

- There is a focus on knowledge and particularly on skills in the policy discourse, however, by contrast, attitudes and values are given little emphasis. The codes obtained are also linked to the four capabilities of modern languages in CfE. It further implies the vagueness and ambiguity of the policy discourse which may challenge Chinese language teaching in Scotland.
- The two models coexist in the lesson plans which have fitted into the requirements of CfE to some extent but still with some features of the Confucian model. More conscious adjustments to the context are needed but the 'unadjusted' aspects also have potential advantages.

Conclusion

The overall findings reveal that there is currently a coexistence of the inclusive model and the Confucian model in the teaching of native speaker teachers from China, however, the vagueness of CfE fails to help these teachers form a clear idea of the language teaching and further adapt to the curriculum. It is suggested that while more adaptability to the Scottish context is required, there is also a need to seek the positive integration of the two models.

Language Education session

Translanguaging as a Pedagogical Practice in a Chinese EFL classroom

XIA Lei

Translanguaging, in an attempt to challenge the deep-rooted monolingualism by focusing on the new multilingual reality of the twenty-first century, has exerted a strong influence on education, especially language education. This study thus intends to contribute to the body of translanguaging study by investigating a hitherto under-explored context, namely, an English classroom in a Chinese secondary school. By choosing such a context, this study also aims to throw some light on the status quo of English language education in mainland China by looking into it from a translanguaging perspective. Specifically, current research replicates the methods invented by Tai and Li (2020a, 2020b, 2020c). All the data was collected through classroom observation (video-recorded) and semi-structured interviews (audio-recorded), and was then analyzed through a combination of MCA (Multimodal Conversation Analysis) and IPA (Interpretative Phenomenological Analysis). Examples of translanguaging for instruction were identified and were classified into four kinds: transcending boundaries between named languages, co-learning process, employment of Chinese knowledge, employment of multimodal resources. This paper concluded that translanguaging as a common in-class approach is able to help the teacher to achieve her pedagogical goals. The conflict that the teacher encountered between monolingual ideology and multilingual reality is also uncovered.

Phonetic compound characters in L2 Chinese Writing: A corpus-based Error Analysis

LUO Xiao Peter

Introduction

Phonetic compound characters (形聲字) refer to the Chinese characters consisting of a semantic radical (形旁) signaling semantic categories and a phonetic radical (聲旁) in part or in whole suggesting pronunciations. Additionally, "consistency" indicates the degree to which a phonetic compound character agrees or disagrees with the pronunciations of its orthographic neighbors (i.e., characters sharing the same phonetic radical, e.g., "枝" and "肢, 吱, 伎, 技, 歧, 岐, and 豉"). Studies on visual character recognition using naming and lexical decision tasks suggested facilitative consistency effects among learners of Chinese as a second language (L2). However, the consistency effect in writing characters by L2 Chinese learners remains unstudied.

Methods

Two research questions are proposed: (1) What are the major types of error in writing phonetic compound characters by L2 Chinese[1] learners? (2) How consistency and other factors contribute to their errors? A total of 60 writing compositions were sampled from the *HSK Dynamic Composition Corpus* (HSK 动态作文语料库), including two nationality groups: Korean (n = 30) and Japanese (n = 30). Each group comprises two writing proficiency levels: intermediate and advanced (n = 15 respectively). Wrongly written phonetic compound characters in each writing composition will be coded based on the following error types: (1) written as the phonetic radical (e.g., "技术" is written as "支术"); (2) written as an orthographic neighbor with the consistent pronunciation (e.g., " 伎　术　"), (3) written as an orthographic neighbor with the inconsistent pronunciation (e.g., " 枝　术　") and (4) others. Occurrence of errors will be counted and standardized per 100 sentences. A 2 (nationalities) x 2 (proficiency) x 4 (error types) ANOVA will be conducted using standardized error frequency as the dependent variable. To answer the second research question, hierarchical regression analyses will be conducted using character's consistency, frequency, HSK level, and neighborhood size as predictors and standardized error frequency as the dependent variable.

Results

This study is in progress, and results will be presented later.

Conclusions and Discussion

This study will conclude with suggestions for including L2 Chinese learners' L1 backgrounds, proficiency, and character's consistency and other features in L2 Chinese curriculum.

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[1] In this proposal, Chinese refers to mandarin used in Mainland China.

Language session 1

Chinese and English Child Semantic Networks: Shared Properties and Cross-linguistic Variations

PENG Yingying

The current study constructs the very first Chinese child semantic network and examines its characteristics and implications. We utilized 181 nouns Chinese children normatively acquire at the age of 2.5 years (Hao et al., 2008, Tardif et al., 2009) and their available shared features from a recently established Chinese feature norm (Deng et al., 2021) with nouns as network nodes and their shared features as edges. The following three studies explored the universal features of Chinese child semantic networks, their distinctiveness and psycholinguistics implications.

Study 1: Universal features

Firstly, four Chinese child semantic networks were constructed when the shared features between any pair of words were more than 1, 2, 3, 4 using python package network (Hagberg, et al., 2008). We then calculated their average clustering coefficients C (the probability of a nodes' neighbours also being neighbours themselves), average shortest path length L (average minimum number of edges between any two nodes), C_random and L_random of random networks with comparable sizes and the small coefficient (Humphries, 2006) defined as (C/L)/(C_random/L_random). The results show that these Chinese child semantic networks exhibited higher clustering coefficients than those of their comparable reference random networks and unanimously possessed a small-coefficient greater than 1, elucidating their universal feature of small-worldness. Secondly, applying the Louvain network community detection algorithm (Blondel et al., 2008), we examined words belonging to the same communities detected from the Chinese child semantic network when the number of shared features was larger than six. It yielded the most interpretable results with communities representing adult-like semantic categories including food_drink, body_parts, animals, household, clothing, furniture_rooms, vehicles.

Study 2: Distinctiveness

We also constructed English child semantic networks following Hills's study (2009b) with 124 overlapped nouns between CDI (Fenson et al., 2007) and the McRea Feature Norm (McRea et al., 2005) and their 185 unique features. Using bootstrapping, we built 1000 Chinese semantic networks with comparable sizes (i.e., 124 Chinese nouns and their 185 unique features) for each shared-feature threshold 1, 2, 3, 4. The mean and standard deviation of the weighted average clustering coefficient of 1000 Chinese child semantic networks and those of the corresponding English child semantic network were computed. Results of four one-sample t-tests indicated that Chinese child semantic networks possessed significantly higher weighted average clustering coefficients than English child semantic networks did. This cross-linguistic variation24 is reminiscent of the results from the comparative study of Chinese and English adult semantic networks (Xu et al., in preparation).

Study 3: Psycholinguistic implications

Correlational analyses between AOA of these 181 nouns and their network degree (number of their edges) and harmonic centrality (the sum of the reciprocal of the shortest path distances from all other nodes to the node; Boldi et al., 2014) show that words that have more edges (more neighbors) and are more globally important in the semantic networks tend to be learned earlier (p = 0.029 and p = 0.010). This has never been studied in any Chinese semantic network research but echoes previous studies of English semantic networks (Steyvers & Tenenbaum, 2005).

Language session 1

Identifying Developmental Language Disorder in bilingual Urdu-Cantonese ethnic minority children in Hong Kong

HAMDANI Saboor

Introduction

At least 7-11% of 5-year-olds worldwide are affected by difficulties in speaking and/or understanding their first language that are severe enough to challenge everyday communication or educational progress, despite being not associated with a clear biomedical aetiology (Bishop et al., 2017). These children suffer from Developmental Language Disorder (DLD), which are language difficulties unlikely to resolve without specialist help. If untreated, this disorder can negatively impact an individual's academic progress, mental health and career development across the life span. Some common challenges in assessing bi- and multi- lingual children are the lack of suitable speech and language assessment tools, and the lack of bilingual norms. More recently with the ongoing COVID-19 pandemic, language testing has become even more challenging to progress practically. In this presentation, we demonstrate how we were able to make use of remote online testing to establish relevant reference data and identify DLD in a bilingual child, using the Multilingual Assessment Instrument for Narratives (MAIN, Gagarina et al., 2012, 2019).

Methods

We highlight the multiple methodological strengths of MAIN being uniquely designed to support dual language testing in bilingual children. Moreover, these new Urdu, Cantonese, and Mandarin adapted versions, like the other language versions, follow the standardized adaptation process (Bohnacker & Gagarina, 2020) to ensure macrostructural features being the same across languages, and microstructural features being consistent across the four stories and as similar as possible to the English version of MAIN. We also highlight the methodological principles of creating these testing materials to move MAIN online, how these resources can be further adapted to suit testing of a particular language and ethnic group, and where and how these new resources can be accessed and cited. We also use the UK CATALISE framework (Bishop et al., 2017) as the conceptual framework for identifying DLD and shall highlight the conceptual considerations and links to the methodological design of the study.

Results

We present evidence from a bilingual Urdu-Cantonese child demonstrating how bilingual DLD can be identified using our new assessment tools via remote online testing.

Conclusion

We promote the use of these new assessment protocols and materials which can improve language assessment for many bilingual children. We further demonstrate the promise of using these new tools/materials to identify bilingual DLD via remote online testing, with the conceptual and methodological considerations elaborated during the presentation.

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A Structural Priming Study on the Function of Causative Ba Construction in Mandarin Chinese

CHEN Bingxian

The Causative *ba* construction is one of the peculiar structures in Chinese. The following is an example of a typical Causative *ba* construction:

(1) Ta ba fan chi-le.
    He BA rice eat-ASP
    'He has eaten the rice.'

Much research has been done on the function of the Causative *ba* construction in Mandarin Chinese. However, there is a controversy about the object NP following *ba* (henceforth, the "*ba* NP") whether it expresses a topic denotation, a focus denotation, or neither. In order to study its information function, the present study has adopted a structural priming paradigm in a self-paced reading experiment to investigate whether Mandarin native speakers' reaction time (RT) of reading the *ba* sentences can be influenced after reading a prime sentence of the following three types: topic sentences, focus sentences, and the non-topic-focus sentences.

It is expected that if *ba* NP functions more similar to focus, the RTs of *ba* sentences following the focus condition should be shorter than those of the other two conditions; however, if *ba* NP functions more like a topic phrase, *ba* sentences should be read faster after the topic condition, than those after the other two conditions.

After removing the outliers, the results showed that the mean of total RTs of *ba* sentences after the condition of focus was shorter (1920ms) than that of the other two conditions (topic: 2155ms; non-topic-focus: 2233ms) (Figure 1). This suggested that some structural priming effects occurred more obviously in the condition of focus. This conclusion was also supported by the by-region results of RTs (Figure 2). The RT difference was more prominent in the regions 9-11 (where the *ba* NP was). These results suggest that *ba* NP may be more similar to focus than to topic in language comprehension.
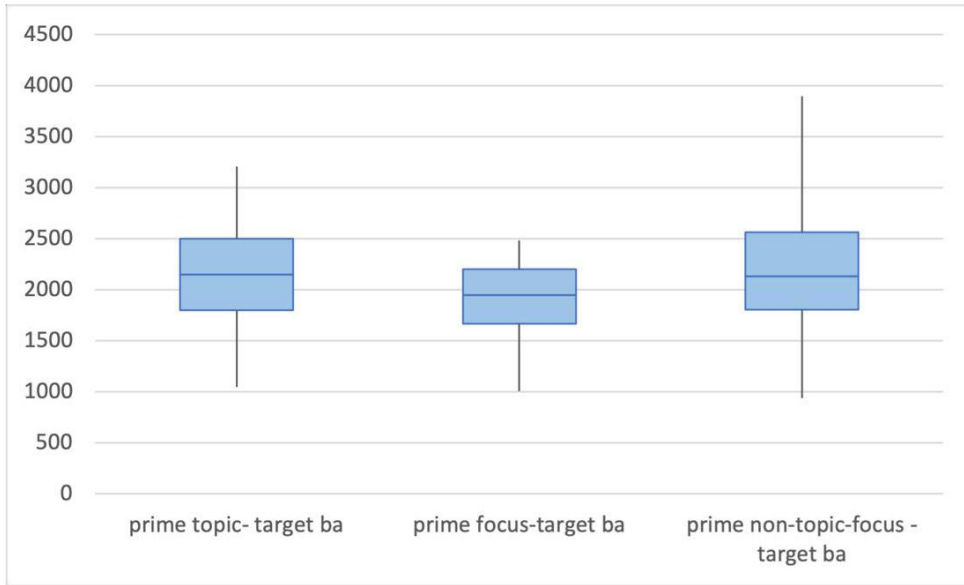
Figure 1. Boxplots of total reaction time of *ba* sentences by three conditions
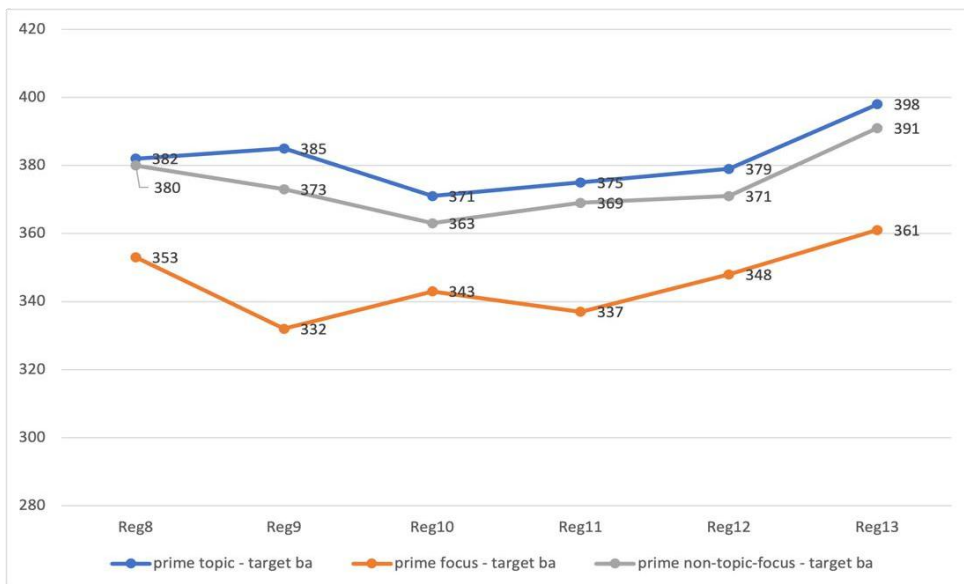

Figure 2. The mean reaction time of every region in a *ba* sentence by three conditions

Language session 2

Grammar "bores the crap out of me!": A mixed-method study on the XTYOFZ construction and its usage by ESL speakers

CHAN Nok Chin Lydia

Introduction

Different from Generative Grammar which sees grammar as a formal system of how words are put together to form sentences, Construction Grammar suggests that grammar is more than just rules and surface forms; instead, grammar includes many forms and meaning pairings which are called constructions. For years, Construction Grammarians have been investigating constructions with various approaches, including corpus-linguistics, pedagogical, second language acquisition, etc.; yet there is still room for exploration. The present paper aims to further investigate the B-construction (e.g., I kick the hell out of him.) suggested by Hoeksema and Napoli (2008) and propose a new name, XTYOFZ construction, for it, as well as to examine its usage and comprehension by English as a Second Language (ESL) and English as Native Language (ENL) speakers.

Methods

The syntactic, pragmatic, and semantic characteristics of the XTYOFZ construction were examined through corpus linguistic methodology. The pattern VERB the NOUN out of _pp was searched in the Corpus of Contemporary American English (COCA) and data was extracted for analysis. Furthermore, processing and understanding of the construction by ESL and ENL speakers were tested via an online timed Lexical Decision Task (LDT) with Jabberwocky-type sentences and an online follow-up survey consisting of questions on English acquisition and a short comprehension task on the XTYOFZ construction. Forty participants took part in the study, including one ESL group (20 participants) and an ENL group (20 participants).

Results

Corpus data shows that in general, the combination of non-motion action verbs (e.g., scare, beat) as X and taboo terms (e.g., shit, hell) as Y was the most common. Also, it was found that the construction occurs mostly in informal and non-academic contexts such as websites and TV/movies. On the other hand, preliminary results from the LDT show that ESL speakers process constructional meaning slightly more slowly than ENL speakers. Also, the follow-up survey reflects that ESL speakers seem to have a harder time to produce and comprehend the construction compared to ENL speakers.

Conclusion

By investigating the features of a relatively less-discussed construction and its usage by ESL speakers, this study hopes to increase the knowledge base of Construction Grammar and ESL construction comprehension and usage, particularly on the constructions that are mainly used in more casual settings.

How Does Verb Aspect Influence the Activation of Typical Event Locations? A Case Study on English with EEG Experiment and BERT

CHO Won Ik

Introduction

Pretrained language models trained with cloze task predict the word that comes in place of masked tokens, concerning the bidirectional context of the sentence. Furthermore, given a sentence with [MASK] and a selected query, one can check the probability that the query replaces the mask. For instance, in a sentence `The boy had fished at the [MASK]', we can let [MASK] be either be a query `lake' or `swamp', and the BERT shows how the language model assumes the appropriateness of each query in the given context. In this case, `lake' will more fit compared to `swamp', and this assigns a bigger probability to `lake'.

Methods

In our study, we use this phenomenon to model how the verb aspect can influence the activation of typical event locations, based on the experimental items from Ferretti et al. (2001, 2007). Ferretti et al. handles stimulus-onset asynchrony priming and the EEG paradigms, to find out that typical locations of events (as `lake' above' are strongly activated by the corresponding verbs, only when in the imperfective form (e.g., `The boy was fishing ...'). We expect BERT's prediction probability can reflect this tendency of observation, given that BERT is trained upon masked language model strategy, with large-scale corpora that contain human language usage.

Results

To match the human activation result with BERT prediction, we use surprisal, a negative log-likelihood of the probability, as a metric that represents the non-typicality of the selected query. In the example above, `swamp' is assigned with a larger surprisal compared to the other, and is expected to induce bigger activation compared to `lake' in the given context. With the experimental items and EEG activation records, we find out that BERT accurately identifies typical locations for an event, though independently of the aspect of the main verb. However, by masking other components in the sentence except for the verb phrase, following Metheniti et. al (2020), we check that BERT's prediction becomes more reliable in the imperfective condition.

Conclusion

Throughout the experiment, we verify that the prediction of a large-scale pretrained language model has a correlation with the way that humans react to the typical event locations, and its connection with the aspect is shown by unmasking only the verb phrase. We want to extend our work to other experimental settings, such as activating with instruments or masking other word chains, and scrutinize further the relationship between statistical phenomenon and mental representation.

Corpus and Computational Linguistics session

Sound-symbolic bias in Italian spatial deixis

JOO Ian

Introduction

A well-known sound-symbolic pattern observed throughout spoken languages is that words for 'this' and 'here' tend to bear front/high vowels, whereas words for 'that' and 'there' tend to bear low/back vowels. (Tanz 1971; Woodworth 1991; Johansson and Zlatev 2013) In Italian, there are two synonymous Italian words for 'here', *qui* and *qua*, and two synonymous words for 'there', *lì* and *là*. *Qui* 'here' and *là* 'there' are sound-symbolic because *qui* has the high front vowel /i/and *là* has the low vowel /a/, whereas *qua* 'here' and *lì* 'there' are counter-sound-symbolic, since their vowels are the opposite.

Methods

Based on corpus and experimental data, we demonstrate that (i) *qui* 'here' and *là* 'there' have been consistently used more frequently throughout history when compared to *qua* 'here' and *lì* 'there' respectively; and (ii) in Italian today, *qui* 'here' tends to refer to a location closer to the speaker than *qua* 'here' does, whereas *là* 'there' tends to refer toa location further away from the speaker than *lì* does.

Results

In sum, sound-symbolic deictic pronouns (*qui* and *là*) are used more frequently and closer to the prototypical meanings of 'here' and 'there'.

Conclusion

Their frequency and prototypicality, we argue, are motivated by their sound-symbolic power.

Corpus and Computational Linguistics session

Did the Cat Drink the Coffee? Challenging Transformers with Generalized Event Knowledge

PENDINOTTI Paolo

Introduction

During training, Language Models learn to assign probabilities to sequences. In this respect they are similar to humans, in that we are able to classify an event as more or less typical. Our ability involves events with a variable number of participants (cf. Bicknell 2011) and is based on general mechanisms (cf. McRae and Matsuki 2009). For example, we know that it is very typical for a man to drink coffee, but we change our judgment when the subject is cat. We tested whether Transformers, the most recent and powerful language models, acquire aspects of human knowledge of typical events with training.

Methods

We tested Transformers Language Models (TLMs) on a dynamic version of the thematic fit task (Erk 2007), where a model, to predict the typicality of an event, have to integrate information from all the words in a sentence (The waiter cleared the restaurant is typical but the waiter cleared the road is not). We applied TLMs on a thematic fit dataset (Vassallo et al. 2018) that targets this aspect of event knowledge and contain events where participants are related by various semantic relations, with human continuous judgments of typicality. We compared TLMs to SDM (Chersoni et al. 2019), an example of previous distributional models of thematic fit (see Lenci 2011). Moreover, we used a set of diagnostics datasets to directly test whether TLMs possess certain aspects of human event knowledge.

Results

We found that TLMs obtain correlation scores with human judgments that are comparable with the scores of SDM. The accuracy of TLMs decreases on three of the four diagnostics dataset we used. These datasets are: a dataset where we replaced the word that expresses the typical participant of an event with a low frequency synonym (e.g., The waiter cleared the restaurant is changed into The waiter cleared the tavern), a dataset (Wang et al. 2018) that targets physical plausibility of events instead of typicality, a dataset where the same events are expressed by other syntactic constructions (e.g., It is the waiter that cleared the restaurant).

Conclusion

We showed that, even if they are in general able to distinguish typical and atypical events in the same way as humans, it seems that TLMs do not possess important aspects of event knowledge, and their predictions are too much dependent on what can be found in a training corpus, such as frequent words and sequences, and syntactic patterns.

Speech session

Head and Neck Movements In Lexical Tone Production: A qualitative study on perceived movements by native Cantonese speakers

KAN See Lok Jason

Introduction

Research has been done on visual perception of lexical tone in tonal languages. Visual cues from head and neck movements were found to be helpful in tone identification. However, details on what head and neck movements to be observed in "tone reading" were not investigated. The objective of this study was to gather qualitative information on head and neck movements during lexical tone production perceived by Cantonese speakers.

Methods

Individual interviews were semi-structured with 4 native Cantonese speakers during this qualitative descriptive study. Participants were requested to produce the lexical tones in read aloud only (RO), read aloud + visual feedback (RV) and whisper (W) situations, so as to gain enough exposure on tones before the interview. Data on participants perceived feeling on head and neck were gathered. A direct content analysis followed to analyse the data obtained. Main themes were identified before the data analysis.

Results

Participants experienced different degrees and directions of movement on head, larynx and neck muscles. RO and RV situations were more helpful in experiencing the head and neck movements.

Conclusion
There were perceivable changes on head position, laryngeal position and neck muscles contraction by the speakers. The changes generally match with literatures on tone production and visual tone perception. Further studies should be done to test the usefulness of suggested movements in "tone reading".

Speech session

Speech production by younger and older adults in story recall

XIE Chenwei

Introduction

Speech production is an important skill in daily life, and is suggested to fall into decline on semantic density and syntactic complexity in late years (Kemper et al., 2004; Snowdon et al., 1996). However, it is not clear whether Chinese older adults would also suffer from production decline, as most previous studies were based on WEIRD population and WEIRD languages which are different from Chinese culture and language (Henrich et al., 2010; Wang, 1973).

Methods

We recruited 10 Chinese young adults and 10 Chinese older adults to perform story recall tasks and verbal fluency tasks. In Story recall tasks, subjects were required to watch a six-minute film in which there exists no speech (Chafe, 1980). After a 30-minute delay, they were asked to recall the story. In verbal fluency tasks, subjects were asked to produce items of tools, electrical appliances, cities, and professions, and each category was given one minute to complete. The number of correct information units recalled in story recall tasks and correct items produced in verbal fluency tasks was analyzed to assess subjects' declarative memory capacity. On the other hand, idea density and syntactic complexity of subjects' speech were analyzed to evaluate their semantic-syntactic ability (Kavé & Sapir-Yogev, 2020; Kemper et al., 2004).

Results

Compared to younger adults, older adults retrieved fewer information units in story recall tasks and generated fewer items in verbal fluency tasks which suggested that older adults retain inferior declarative memory capacity. And both the syntactic complexity and idea density of older adults' speech are simpler than those of young adults, as older adults tended to insert nonsense fillers and repetitions in their utterances and use syntactically simple sentences to describe the same scenarios in the film. Moreover, there was a positive correction between the number of recalled information and semantic density which is consistent with the declarative/procedural model (Ullman, 2001).

Conclusion

The current study provides new evidence from Chinese older adults for clarifying the age-related differences in speech production of younger and older adults. Although our results consistently demonstrated the association between declarative memory and semantic-syntactic processing, we only analyzed the correct information units and ignored the incorrect information units due to the raw instructions. Future work should combine the results of incorrect information units and semantic-syntactic speech errors to systematically delve into production performance in older adults.

Speech session

Diagnostic methods of childhood apraxia of speech in Chinese-speaking children: A scoping review

WONG Eddy CH

Introduction

Childhood apraxia of speech (CAS) is a type of paediatric motor speech disorders. Children with CAS are having difficulty in producing intelligible speech. Given that there is a limited understanding of CAS in Chinese speakers, there is no report of the standard for the differential diagnosis of CAS in Chinese speakers. The purpose of this study is to review the existing literature of CAS in Chinese speakers. Specifically, the available evidence of the assessment and diagnostic methods for Chinese speakers with CAS were reviewed and evaluated.

Methods

This scoping review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISM – ScR) guidelines (Tricco et al., 2018). Published articles and unpublished theses with the focus of CAS in Chinese speakers were systematically searched in seven English and five Chinese databases plus manual searching. Three reviewers performed a trial run of screening, data extraction, and quality assessment prior the reviewing process to ensure the reliability for later independent works. Identified abstracts were screened by the criteria: 1) written in either English or Chinese, 2) published between January 1980 and October 2020, and 3) had at least one Chinese speaker who had been diagnosed with CAS. Data extracted from the article included 1) participants' age and gender, 2) initial diagnosis, 3) comorbidity or co-existing conditions, 3) assessment methods, and 5) diagnostic criteria. A quantitative analysis was performed to determine the quality of diagnoses, ranging from level I as the highest to level III as the lowest, with level IV as unclear.

Results

Five studies were identified. Total of 15 children with CAS, aged from two to six, were included, with 12 Taiwan Mandarin speakers, 2 Cantonese speakers, and 1 Putonghua speaker. A variety of assessment methods and diagnostic criteria were identified. Regarding the quality assessment, two studied rated as level II, one study as level III, and two studies as level IV respectively.

Conclusion

There is no reliable and valid tests or methods (i.e., level I) for the diagnosis of CAS in Chinese speakers. There is also no common assessment and diagnostic methods in Chinese speakers with CAS, even within the Cantonese, Mandarin, and Putonghua speakers. Future investigations can be focused on the language-specific clinical features, the development of possible objective measurements, and the efficacy of intervention for Chinese speakers with CAS.

Speech session

Tonal Versus Segmental Perception in Mandarin Chinese Speakers

CHEN Siying

Introduction

In Chinese as a Foreign Language, lexical tones tends to be difficult for non-Chinese learners to grasp and master, both in production and in perception. Specifically, Mandarin Chinese has 4 tones, with another tone with no stress accepted by some as a fifth tone. Classically, tones 1 and 4 are the easiest to master, and tones 2 and 3 are often confused with each other. However, are tones really that important in Chinese spoken language? This study hopes to help answer that question. Using accidental gaps occurring naturally in Chinese, the study seeks to answer the question of whether tonal perception strongly affects lexical perception, or will results support previous research showing that segmental perception is much more important for lexical decision?

Methods

This study used 40 accidental gaps in Mandarin as phonetic stimuli for 72 native Mandarin-speaking participants to listen to. Accidental gaps are syllabic phonetic components in Chinese that exist in some tones or not others – they are thus nonwords in Chinese, and do not correspond to any lexical items. The participants were then asked to decide if the sound they heard more closely resembled a character with the same rime and tone but different onset, or a character with the same onset and rime but different tone. In addition to the 40 critical stimuli, there were 120 stimuli used as filter. The experiment was created in PsychoPy software and accessed by participants around the world.

Results

The combined percentage of participants that selected the same onset and rime but different tone (tone mismatch) was 85.2%, meaning that the combined percentage that selected the same rime and tone but different onset (onset mismatch) was only 14.8%. On closer inspection, there was one stimuli that showed more selection for the onset mismatch, with the onset mismatch different as a retroflex place difference.

Conclusion

The results match the previous research, showing that segment is more important than tone in Mandarin spoken perception. However, the one token that showed that tone was more important in perception, a non-retroflex nonword that was perceived as a retroflex word, shows that tone may be more important for perception when the target word is retroflex. Further research is needed to see to what extent this is true.

Poster session

An Investigation of the Use of Medium of Instruction in Elementary Mandarin Chinese Classes in Scotland: A Case Study of Edinburgh Chinese School

LIU Xi

Introduction

The Mandarin Chinese teaching in Scotland, the UK, has different conditions and characteristics in the use of medium of instruction from that in domestic teaching of Chinese as L2. So far, the research on the medium of instruction in Mandarin Chinese teaching is relatively single in terms of research objects and methods, and there is a lack of research on Scotland. In order to clarify the actual use of the medium of instruction in the elementary Mandarin Chinese classes in Scotland, taking Edinburgh Chinese School as an example, this article investigates the attitudes of teachers and students towards the use of the medium of instruction, the situation and characteristics of the use of the medium of instruction in classes, and its specific application in teacher discourse.

Methods

Research methods include questionnaire, interview, classroom observation and case analysis:

- Conducted a questionnaire survey for Mandarin Chinese teachers
- Semi-structured interviews with 3 teachers & communications with 6 students
- Observed and analysed about 20 classes framed by the LICC paradigm (Learning, Instruction, Curriculum and Culture)
- Discussed one specific classroom case quantitatively and qualitatively focusing on teacher discourses.

Results

- Attitudes

Teachers recognize and pay attention to the positive role of the medium of instruction in elementary teaching, but do not advocate excessive reliance on it; most students affirm the role of medium of instruction in promoting their Chinese learning, and their Chinese proficiency has also affected different degrees of acceptance and demand for the medium of instruction.

- Situation and characteristics

Students generally have a strong dependence on the medium of instruction; teachers use medium of instruction most frequently in vocabulary, grammar, and culture teaching; teaching methods affect the appropriate use of medium of instruction; reasonable use of medium of instruction helps create a good classroom atmosphere.

- Application in teacher discourse

The medium of instruction is used more in teacher discourse with strong teacher-student interaction, while the teacher discourse involving language content offers more target language input.

Conclusion

The overall finding shows that Chinese teaching in Scotland emphasises the auxiliary function of the medium of instruction. While acknowledging the existing issues of transferability in the results, this article narrows the gap in the field of the medium of instruction in Scotland. More empirical research is expected in the future.

The effects of deictic pedagogical gestures on EFL learners' acquisition of English past tense

QU Congyi

Introduction

Generally, pedagogical gestures have been widely used by teachers to facilitate students' learning. Specifically, in the EFL (English-as-a-Foreign-Language) classroom, pedagogical gestures have also been used by teachers to facilitate students' learning of English.

English past tense is a difficult target structure for EFL learners to acquire. Previous observational studies (e.g., Matsumoto & Dobs, 2017) have shown that deictic pedagogical gestures are used by teachers to teach English past tense. A typical deictic pedagogical gesture for teaching English past tense is: putting a hand to the left of one's body to indicate the location of the past (i.e., left) in relation to the present (i.e., one's body). The deictic pedagogical gesture also reveals people's conceptualization of the abstract time as concrete space in mind.

There seems to be few studies that investigate the effects of such deictic pedagogical gestures. To fill this gap, the present study investigates one research question: can the deictic pedagogical gesture facilitate EFLs' acquisition of English progressive aspect?

Methods

The empirical study adopts an experimental design. The participants are 90 Chinese college students, aged 19 to 20 years old. The 90 participants are randomly assigned to three groups: experimental group that receives both deictic pedagogical gestures and verbal instruction, experimental group that receives only verbal instruction, and control group that continues their normal teaching and learning without receiving treatment. The experimental procedure follows pretest—treatment—immediate posttest—delayed posttest. At each testing time, participants' acquisition of English past tense is measured, to examine the effects of the deictic pedagogical gesture on the participants' acquisition of English past tense.

Results & Conclusion

Data are being collected, and the results are expected to be generated before the symposium. At this moment, it is hypothesized that the experimental group will outperform the other two groups. That is to say, the deictic pedagogical gesture will facilitate EFL learners' acquisition of English past tense.

Poster session

Writing ability of Chinese learners from the perspective of metadiscourse

SUN Jiale

Introduction

Listening, speaking, reading and writing are the four basic skills of language. Among the four language skills,written expression is the most difficult one.(Lü Bisong,1996) Some studies have shown that Chinese learners have common problems in writing, which are mainly manifested in unclear logic, incoherence, ambiguous semantics, stylistic hybridity and improper ellipsis. (He Lirong, 1999;Zhang Juanjuan, 2019) Previous studies have explored these problems from the perspectives of vocabulary, syntax and content instead of meta-discourse. "Meta-discourse" was pioneered by Zelling Harris in 1959, and is essentially a linguistic device that can enhance the logical, interactive and persuasive nature of discourse when used rationally. This study of Intaraprawat and Steffensen (1995) suggests that there is a close relationship between the use of metadiscourse and English second language writing ability. So, is there a close relationship between the use of metadiscourse and the writing ability of Chinese learners? How do Chinese learners use metadiscourse in their Chinese writing and what are the problems?

Methods

1. 175 argumentative discourses in Chinese (100,379 words in total) were selected from both Korean and Chinese native speakers. Of these, 120 discourses for Korean learners of Chinese was taken from the HSK Dynamic Composition Corpus(2.0), a national level standardized test with high consistency and reliability of scores. we divided the discourse into native, high and low groups and then compared them in terms of metadiscourse density, accuracy and diversity. For the statistical analysis, SPSS was applied.
2. For analyzing the distribution and nature of metadiscourse, the study employed Hyland and Tse's (2004) and Burneikaité's(2008) models, which is composed of two main categories each of which has six subcategories. Two reliability procedures were followed: iteratively cross-checking the meaning of the codes and revising the annotations with a fellow linguist.

Results

1. There is a positive correlation between the use of metadiscourse and writing ability. The stronger the writing ability, the higher the density of metadiscourse, the more diverse the types and forms, and the higher accuracy.
2. There are significant differences in the use of some metadiscourse subtypes between native speakers and learners.

Conclusion

Improving the ability to use metadiscourse is a key factor in improving Chinese learners' awareness of corpora and their writing ability. Attention should be paid to the content of metadiscourse in teaching materials.

Poster session

How bilinguals comprehend words in the text: evidence from functional connectivity with graph theory analysis

GU Chanyuan

How the brain supports the second language reading? Previous studies have already provided considerable neural evidence to answer this question with Functional Magnetic Resonance Imaging (fMRI). It becomes common sense that first language and second language reading share similar brain regions, relating to crucial factors, such as the age of acquisition and proficiency. However, most of them focused more on single-word reading, and it is risky to speculate the results of single-word reading to more complicated reading. In contrast with single-word reading, reading a text needs to integrate the representations of words into structured concepts based on the text, which involves more sub-preprocess and word comprehension. Besides, the cooperative neural network couldn't be revealed by local activation examined in most previous studies, while reading needs distinct brain regions to cooperate. The last thing is topological characteristics of the neural network could reveal how the brain works from another level, which is also not emphasized before. Hence, to fill in the research gap, our study aimed to explore the neural basis underlying text reading with functional connectivity, and the corresponding topological characteristics in bilinguals. Fifty-two English native adult speakers (L1) and fifty-six Chinese-English adult speakers (L2) were recruited, and all of them completed the fMRI task and behavioral tasks.

During the fMRI task, participants were required to read English texts saliently followed by ten questions, and the fixation-related fMRI was adopted to record their eye movements and Bold signals simultaneously. First- and second-pass reading time were used as experimental conditions. First, compared to L2, a stronger positive network and negative network were both found in L1 for two conditions, including multiple sub-networks, such as the dorsal attention, language, and default model networks. However, no stronger network could be observed in L2 whether in positive or negative connectivity. Second, compared to L2, higher global efficiency of positive and negative networks, and higher local efficiency of positive network reported in the first result were shown in L1. Meanwhile, the nodal efficiency of positive networks was significantly higher in L1, while for negative networks, the nodal efficiency was significantly higher in L2. In summary, the brain regions belonging to distinct sub-networks (such as default mode and language) cooperated better for L1 reading. Also, the efficiencies of corresponding networks and the nodes within the networks (such as default mode and language) were higher for L1 reading.

Conference Proceedings

(Accepted Full Papers)

Discoursal Conflicts: Reports on China's Handling of Covid-19 among Chinese and Western Media Representations

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Abstract

This research addresses how western main media and Chinese main media report China's handling of Covid-19 differently. By employing corpus software like Sketch Engine and AntConc, this paper attempts to quantitatively and qualitatively analyze Western and Chinese mainstream news outlets' reports on China's response to Covid-19 through online Coronavirus Corpus and self-designed Western mainstream media and Chinese mainstream media corpora covering NYT, FT, Xinhua News, China Daily, Global Times, etc. from January to December 2020. Results reveal that English language media including mainstream news outlets in US and UK employs strong discriminatory dictions ideologically and frequently and they are different in report focus compared with Chinese media. And Chinese media maintain strong confidence in the path and culture of socialism with Chinese characteristics. Such differences in news reports are highly related to the decisions, measures, and effects of the UK, the US and Chinese governments' different ways of handling Covid-19.

1. Introduction

COVID-19 is continuing to ravage the world into the year 2022, as the number of newly infected cases around the globe is still surging and breaking the record (the daily increase of new cases surpassed half a million in the US on Dec 28th, 2021) with Omicron variant spreading globally and quickly. The world is again forced into waves of different levels of lockdowns and quarantines. The vulnerability is particularly higher in some regions with limited access to vaccination and extreme consumption of local medical resources (Johns Hopkins University, 2021). Researchers in Lanzhou University pessimistically predict the daily increase of new cases in North America and the European Union may remain high in the following months due to the Omicron variant and the global number of new cases is hard to reduce as the situation remains precarious and serious in such places as Europe, US, South America, India or Africa (Lanzhou University, 2021).

Under this grand and grave circumstance, the pandemic has prompted a global rise of nationalism in all aspects, particularly in the west where anti-China politicians blame China's early misstep in handling the outbreak of the pandemic while deny any responsibilities of their own administerial dysfunctions and social unrest and divisiveness over pandemic restriction and quarantine policies (Campbell & Doshi, 2020; Su & Shen, 2020). On the other hand, China's consistent denial of taking any blame from the West widens the political and ideological gulf

between the West and China. This sharp contention on the pandemic stretches from the political and diplomatic arena to media and social discourses in China and the West. Take media discourse as the example, the spread of disinformation at different levels has exacerbated the spread of the pandemic and shook off the civic confidence on how to effectively prevent the virus, such as how 'hoax theory' by right-leaning media misinformed Americans that Covid-19 is a Chinese plot to harm US economy (Motta et al., 2020). Since the western media, particularly mainstream outlets from the US and UK hold dominant influence in global media discourse (Huang, 2020), to fully understand how international media cover China's response to Covid-19 and how China's media narrative its response to Covid-19 abroad is an important task and is regarded as an important battlefield as to China's soft power in global stage (Gill, 2020). This research attempts to quantitatively and qualitatively analyze the linguistic features of Western and Chinese mainstream news outlets' reports on China's response to Covid-19 through online Coronavirus Corpus and self-designed Western mainstream media and Chinese mainstream media corpora.

2. Review on the international media coverage on China's handling of Covid-19

Research in international academia and media reports reveal that global reactions towards China's handling of the Covid-19 divide with mixed attitudes. On one hand, some appreciate China's efforts in containing the spread of Covid-19 by adopting the unprecedented draconian lockdown and quarantine policy or isolation policy (Brockmann, 2020), and even set China as a model in responding to Covid-19, even though China bears huge costs and GDP loss sine Covid-19 with GDP declined by -6.8% in the first quarter of 2020 (Al-Dabbagh, 2020). For example, Lazarus et al., (2020) reveal that the highest public perception and satisfaction to government responses to COVID-19 is China out of 19 major countries. The last episode of the Economist in 2020 surprisingly extols how Chinese scientists shared with global scientists the genome of Covid-19 that was sequenced by them within weeks after the outbreak (the Economist, 2020). This shows China's determination for a global coordinated effort to fight pandemics through international cooperation. By contrast, research in Pew research center shows that over 60% of people in developed countries are frustrated and pessimistic towards the economic outlook of their own countries (Mordecal & Schumacher, 2020).

On the other hand, more others strongly criticize China's early handling of Covid-19 and perceive their later altruism as diplomatic opportunism and propaganda (Campbell & Doshi, 2020; Farrell, 2020). Interestingly, some strict policies to respond to Covid-19 that once were strongly criticized by the West such as confinement or lockdown of Wuhan city are implemented and seem to have a positive effect in increasing people's satisfaction with their elected governance (Bol et al., 2020). However, when the coronavirus rampaged into the northern hemisphere, the newly affected cases soared in Europe and North America as their governments failed to take precautious steps when China was fighting hard against the deadly virus. Western media take a hardline stance when covering China's Covid-19 issues, and politicize the pandemic to some extent, such as increasingly employing prejudiced words like 'China Virus' 'Wuhan Virus' (Gao & Xu, 2020). One striking example of such deep bias and the sense of superiority from the West is the article *China Is the Real Sick Man of Asia* published in *The Wallstreet Journal* on Feb 4th, 2020 (Mead, 2020). Ironically, the fantasies of China's economic collapse and social unrest due to the pandemic by this author fell into reality in the US whose affected number and death toll have been leading the globe ever since.

The media play a crucial part in any social event but their role in a pandemic is controversial in that media may divide public conceptions and even ideology in pandemic situations (Chang et al.,

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2020). This is also evidenced by the research (Gozzi et al., 2020) that the collective attention of the public is much more influenced by media coverage rather than pandemic progression. Big data (corpus-driven) application is important for analyzing the spread of information in media and social networks like Facebook, Twitter, or WeChat. In terms of the news report about Covid-19, the corpus method is optimized for analyzing the characteristics of Covid-19 reports, such as features of FOX reports about Covid-19 (Chen et al., 2020) and war-related language in some media (Wicke and Bolognesi, 2020). As literature reveals, though much attention has been given to China's response to Covid-19 in the Western media, analyses about its characteristics at the linguistic level are relatively scant in academia. Nor is the analysis on how China's official and mainstream Chinese media covered China's response to Covid-19 to foreign readers, such as the English version of People's Daily, Xinhua News, China Daily, etc, though they reported extensively and domestically. To this end, this research attempts to address these two research questions: 1. How do western media report and perceive China's handling of COVID-19 based on a corpus-driven method? 2. What are the differences in the coverage of China's response to COVID-19 among Chinese and Western mainstream media representations? Based on a combined quantitative and qualitative analysis, we hypothesize that the pandemic has exacerbated the ever-worsening distrust between China and the West, in the representation of the western media.

3. Research methodology

3.1. Research method and research instruments

To address the research questions, this study adopts both quantitative and qualitative methods by combining corpus analysis and critical discourse analysis. The quantitative part includes collecting the data from Google Trends, online 'Coronavirus Corpus', and two self-designed media corpora. Specifically, corpus software and tools like Sketch Engine, AntConc, and Wmatrix4 were employed to examine the frequency, concordance collocates, and keyness analysis of 'China virus' 'Wuhan virus' and 'authoritarian' 'totalitarian' in online corpus and self-designed corpus in combination with analysis from google trends. The qualitative part locates certain specific articles from the corpora for further in-depth analysis to supplement quantitative analysis.

3.2. Data collection

For this study, Online Coronavirus Corpus' is a super-size online corpus with 700 million words from newspapers and magazines in 20 different English-speaking countries. This free corpus provides enough and general data for our research purpose. For the self-designed corpora, we collect 450 related reports in the Factiva database by searching 'Coronavirus', 'Covid-19', 'China', 'Chinese' from the mainstream US and UK newspapers from Jan 2020 to Dec 2020, including NYT, WSP, WSJ, USA Today, CNN, FOX, GUARDIAN, and FT to create a mini corpus (Western Media corpus) consisting of 653,731 words. The Chinese mainstream media corpus (Chinese Media corpus) consists of 180 reports with 163,883 words from Xinhua News (English edition), China Daily (English edition), Global Times (English edition) in the Factiva database during the same period. The third tool we employ in this paper is google trends, which shows the changes of linguistic characteristics at lexical and phrasal levels.

4.Research findings and discussion

4.1. Noun collocates of China virus and Wuhan Virus

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By searching noun collocates related to 'China' and 'Wuhan' in online Coronavirus Corpus, virus is listed as one of the most frequent collocates with relatively moderate MI (MI=5.35/ 6.4), which shows that collocation of China virus and Wuhan virus is not very strong and stable collocation but rather highly frequent in the corpus (Table 1 and 2). Other epidemic related to collocates with China and Wuhan includes coronavirus, ban, lab, laboratory, hospital, outbreak, virology, etc. From google trends, we can see that both 'China virus' and 'Wuhan virus' are saliently employed from Jan 2020 to Feb 2020 to show that western media were hugely concerned with the outbreak of Covid-19 in Wuhan, China (Figure 1). This result is also found in the self-designed corpus (Western Media) (Figure 2), as China and Wuhan are very significant collocations as modifiers of virus in the mainstream newspaper corpus. Other high frequent and salient Verb-Object collocates with China in Western Media corpus include blame, accuse, resist, counter, confront, punish, contain, challenge (Figure 2). Verbal semantics shows that how the verbs relate to the senses of events in the sentence (Huang et al., 2000). The above Verb-Object collocates in WM corpus indicate a negative and combative affectedness of the internal semantics of events.

noun collocates	frequency	MI
sea	3739	11.45
virus	1529	5.35
morning	1502	7.98
post	1391	7.68
AI	521	8.9
policy	385	5.71
market	368	4.47
business	360	4.26
trade	333	6.11
report	325	4.62
association	289	6.03
travel	269	4.49
journal	214	6.47
bank	211	4.63
news	208	3.22
law	202	5.22
group	193	4.02
ban	181	5.39
flights	179	5.63
city	170	3.06

Table 1: Most frequent noun collocates of 'China'

noun collocates	frequency	MI
coronavirus	2056	5.29
city	2005	7.32
virus	1959	6.4
institute	1361	9.47
virology	1188	12.21
china	832	5.83
lab	629	9.23
university	560	6.45
outbreak	493	5.26
province	434	7.16
market	355	5.11
residents	321	5.85
hubei	300	8.01
hospital	287	7.7
authorities	222	5.7
laboratory	217	7.95
police	201	3.88
area	186	4.75
officials	155	5.25
region	148	4.16

Table 2: Most frequent noun collocates of 'Wuhan'

MI is a measure of the strength of collocation
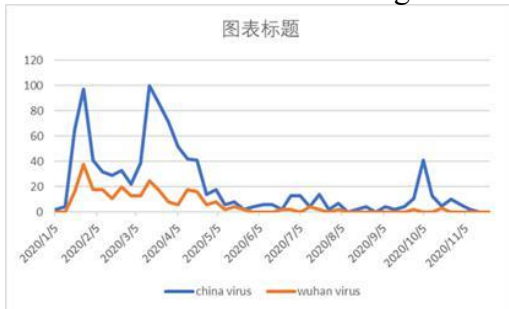
1: 'China Virus' 'Wuhan Virus' in Google Trends

2: types of collocates of 'virus' in WM

The above findings from corpora demonstrate that the western media are getting increasingly strongly prejudiced and biased when reporting China and its handling with Covid-19. For example, the second peak of these two terms appeared from about March 5th, 2020 to April 5th, 2020 when the virus ferociously spread in North America and Europe while China was on the way to containing the virus. The second peak contrasted with the previous one for its discoursal turn from purely geographic and medical terms to politicizing the Covid-19 by blaming China,

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accompanying wide anti-China and anti-Asian sentiments (Gao & Xu, 2020). In this case, 'China virus' is more politically motivated than 'Wuhan virus' which may be related to the original place of virus, as the former is more salient in the last eleven months (Figure 1). The highly frequent collocates of discriminatory terminology of Covid-19, which relates to Wuhan and China reflects how Western societies conceptualize the pandemic when their governments fail to contain the pandemic. For example, former U.S. President Donald Trump repetitively refers to Covid-19 as 'China virus' under many circumstances to draw support from his vote bases as his own administration's chaotic response fails to contain the pandemic (Rudd, 2020). This politicalizing pandemic by politicians and media has been echoed in western society. A series of studies in Pew research center have shown a consistent increase of unfavorable attitudes of average Americans towards China from 66% in April 2020, to 73% in July 2020 and 78% in Oct 2020 (Devlin et al., 2020; Devlin & Huang, 2020; Devlin & Huang, 2020).

4.2. Noun collocates of 'authoritarian'

By searching the noun collocates modified by 'authoritarian' (Table 3), we can find that 'China' is ranked the second-highest with relatively moderate MI (MI= 4.96). This shows that the collocate is highly employed in this online corpus. Furthermore, when closely examining the qualitative part of concordance lines of 'authoritarian', we can identify some other noun collocates in the frequency list like government, leader, system, state, ruler, etc., are also highly associated with 'China' (Figure 4). This means that the frequency of 'authoritarian' and 'China' is practically much higher. This is not surprised when we see 'authoritarian' is a highly salient word related to 'China' in google trends in the last eleven months (Figure 3). Slightly different findings are shown in the self-designed corpus that China is not a direct noun collocation with authoritarian (Figure 5), but concordance lines show that China is very significantly salient with authoritarian (Figure 6).

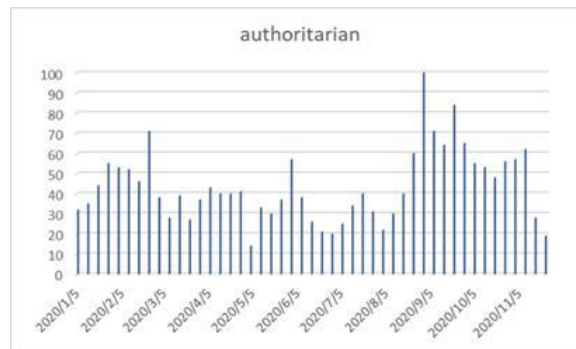| noun collocates	frequency	MI
regimes	435	12.57
china	321	4.96
regime	253	9.82
government	237	3.74
leaders	194	6.51
governments	182	6.52
rule	179	7.69
president	174	4.42
state	161	3.21
leader	136	6.39
states	131	4.26
like	128	3.02
countries	111	4.24
country	99	3.19
system	97	4.49
trump	95	3.88
power	85	5.13
tendencies	82	11.19

Table 3: Most frequent noun collocates of 'authoritarian'   Figure 3: authoritarian in Google Trends

MI is a measure of the strength of collocation

Figure 4: concordance lines of 'authoritarian' in CC
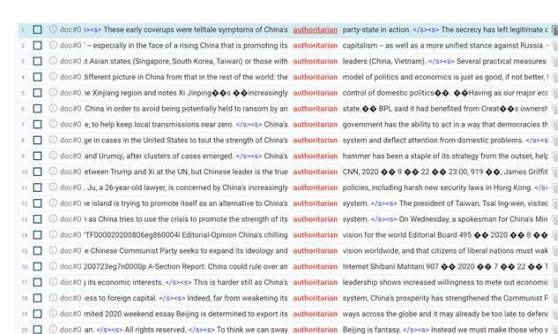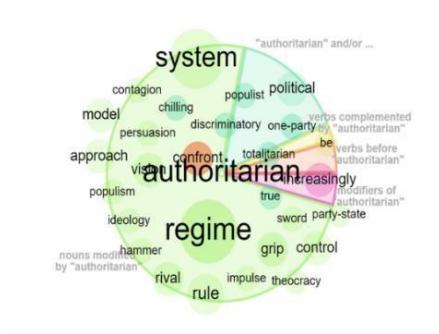
Figure 5: types of collocates of 'authoritarian' Figure 6: concordance lines of 'authoritarian' in WM

In the discussion of ideological differences between the West and China, 'authoritarian' is the common word frequently employed in academia, politics, and media to distinguish the West from China, even alienate China from ideological and political perspectives (Chang, 2020). In example [1], the author deliberately distinguishes the west and China as 'WE' and 'THEY' to ideologically portray China as an authoritarian and even Orwellian surveillance state (*videoing everyone*). Example [2] reveals the representative mindset of some US elites of corresponding Covid-19 with authoritarian propagandists and further with China's Covid-19 handling.

[1] *We have an image in the West of China being authoritarian and they are videoing everyone. They can have access to anything.* (The New York Times, Feb 15th, 2021)
[2] *His team echoed the theme, from his secretary of state to his family. "Anyone praising China's 'leadership' in responding that the virus should be scorned for being the authoritarian/communist propagandist that they are," Donald Trump Jr., the president's eldest son, wrote on Twitter on March 26.* (The New York Times, April 9th, 2021)

In this sense, the pandemic context has exacerbated western elites' politicizing the pandemic and labeling China as an authoritarian or totalitarian country. This is coupled with other containing-China strategies. Another striking example is that the Trump administration attempts to decouple the US-China relationship in a fundamental way in political, economic, diplomatic, trade, technological, educational aspects, 'anti-China' becomes new political correctness in the US politics and media. When reporting China's unprecedented lockdown of the entire Wuhan city with over 11 million people, western media criticized the move as the 'camp' against basic human rights. 'Authoritarian' was politicized in the pandemic to attack China's political and social system by some western politicians and media (Wu, 2020).

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4.3. Contrast of two self-designed corpora

From the cross corpora contrast, we can find that China's handling of Covid-19 is of great concern for both WM and CM. However, further examination of two corpora reveals that high frequent nouns collocates with the keywords like China, China's, Chinese in Chinese mainstream corpus are China, cooperation, development, economy, recovery, investment, international, global, economy, trade, market, etc. And the high frequent verbal collocates of these key words in CM are work, aim, boost, show, commit, promote, etc. This highlights that Chinese mainstream media are more concerned with the economic and social recovery, people's lives returning to normal state, or China's efforts for international cooperation against the pandemic as the government successfully contained the pandemic. In contrast, as is discussed before, WM pertains to the political and ideological images of China's handling of Covid-19 with higher noun collocate frequency like government, leader, party, regime, authoritarian, and verb collocates like blame, criticize, not believe, act against, resist, confront, rebuke, protest, warn, threaten, compel, contain, constrain, reject, provoke, attack, challenge, ignore, etc. (Table 4). The keyness analysis of two corpora provides further details of the contrasting differences of noun collocates in CM relating to economy, trade, global cooperation while WM corresponding to political special term, particularly for US presidential election, etc (Table 5).

	Noun collocates relating to economy	Noun collocates relating to politics and ideology
CM (Chinese mainstream media corpus)	36%	12%
WM (western mainstream media corpus)	14%	30%

Table 4: summary of noun collocates of key words China, China's, Chinese in CM/WM corpora

Item	O1	%1	O2	%2	LL	LogRatio		
China	1368	0.90	126	0.21	+		366.23	2.10
Chinese	590	0.39	38	0.06	+		202.68	2.62
cooperation	389	0.25	9	0.01	+		196.30	4.10
global	545	0.36	48	0.08	+		151.32	2.17
development	347	0.23	16	0.03	+		140.72	3.10
economic	411	0.27	41	0.07	+		102.63	1.99
covid-19	669	0.44	107	0.18	+		93.56	1.31
recovery	156	0.10	7	0.01	+		63.99	3.14
investment	187	0.12	14	0.02	+		58.48	2.40
international	299	0.20	41	0.07	+		52.55	1.53
economy	286	0.19	39	0.06	+		50.64	1.54
trade	173	0.11	29	0.05	+		22.33	1.24
market	198	0.13	38	0.06	+		19.57	1.05

O1: CM frequency; O2: WM frequency; %1、%2: percentAge in corpus; +: O1>O2

Item	O1	%1	O2	%2	LL	LogRatio		
U.S.	125	0.21	6	0.00	+		270.21	5.72
Trump	149	0.25	41	0.03	+		204.58	3.20
Dow_Jones	58	0.10	0	0.00	+		146.13	8.19
Biden	33	0.05	0	0.00	+		83.14	7.38

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Wall_Street	36	0.06	2	0.00	+	76.36	5.51
President-elect	31	0.05	6	0.00	+	49.31	3.71
White_House	29	0.05	5	0.00	+	48.01	3.87
senate	22	0.04	1	0.00	+	47.87	5.80
transition	32	0.05	17	0.01	+	28.71	2.25
vaccine	193	0.32	299	0.20	+	26.77	0.70

O1: WM frequency；O2: CM frequency；%1、%2: percentAge in corpus；+: O1>O2

Table 5: Keyness analysis of CM/WM corpora

5. Conclusion

By conducting the quantitative and qualitative study, the corpus evidence of this research shows that China's handling of Covid-19 is a great concern for both international and China's domestic media in terms of both large online corpus and small self-designed corpus. Firstly, through searching frequency, concordance, noun collocations, and word sketch in Sketch Engine of 'virus' and 'authoritarian', we can find that increasing use of discriminatory terms and concepts against 'China' is employed in the western media under the grand context of the pandemic and US-China confrontation, which indicates the generally negative trend of language conflict in the western media representation concerning China. This reflects ideologization, politicization, stereotyping when China comes to the focus in western media (Xu & Wang, 2016). Secondly, the narrative of China's mainstream media on international discourse presents the world the tremendous efforts the Chinese government made to successfully curb and contain the further spread of Covid-19 within mainland China at a very high social and economic cost. However, given the dominant position of US and UK media in international discourse, Chinese media have a relatively small audience and less influential voice to break down the long-held stereotype ingrained into the western public by politicians, media, etc. It is also very important to reflect on certain limitations of this mini research for future further research. First, it would be more significant if we can compare western and Chinese media reports about China's Covid-19 handing with the design of well-balanced and representative corpora. Second, the searching methods are limited in this study, and it would be more meaningful if we conduct critical discourse analysis for the qualitative part to specifically subcategorize noun collocates in this research.

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The Effect of a Pedagogical Deictic Gesture
on L1 Chinese Learners' Acquisition
of the L2 English Past Tense

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Abstract

There has been growing interest in the overlapping area between Second Language Acquisition (SLA) and gesture. In the overlapping area, there is a lack of research that quantitatively measures the effects of pedagogical gestures. To fill the gap, the present study carried out an experiment that followed the procedure of pretest-treatment-immediate posttest-delayed posttest. There is also a lack of research that reveals L1 Chinese learners' perceptions of pedagogical gestures. To fill the gap, the present study conducted stimulated recall interviews with L1 Chinese learners. The results show that the facilitating effect of a pedagogical deictic gesture is limited, and that L1 Chinese learners are predominantly in favor of the gesture because it is helpful in other aspects. The limited facilitating effect of the gesture indicates that the benefit of embodied cognition may not be taken for granted, which is a pedagogical implication. The paper also discusses the interrelationships among mind, gesture, and language, which generates theoretical implications.

1. Introduction

There has been increasing interest in the interdisciplinary research area of gesture. For example, in the overlapping area between psychology and linguistics, scholars have been exploring the interrelationships among gesture, speech, and mind. In the overlapping area between education and communication, scholars have been investigating pedagogical gestures and multimodal interactions during teaching and learning. Gesture has also been receiving attention from SLA researchers. For example, Gullberg, de Bot, and Volterra (2008) argued that gesture is a medium of SLA, a reflection of SLA, and an object of SLA. There has also been a trend of integrating multimodality, embodied cognition, and nonverbal behaviours in L2 teaching and learning (Lim, 2021). Tense-aspect is a specific topic of SLA, which explores how languages describe events from the perspective of time. Speakers of different languages have different conceptualizations of time. There have been a few pioneering studies that investigated L2 tense-aspect acquisition in connection with gesture (Matsumoto & Dobs, 2017; Nakatsukasa, 2013, 2021; Saddour, 2017). The present study aims to investigate the effect of a pedagogical deictic gesture on L1 Chinese learners' acquisition of the L2 English past tense. The pedagogical implications include the efficiency of a pedagogical gesture and learners' perceptions of the gesture. The theoretical implications lie in the interrelationships among gesture, language, and mind.

2. Literature Review

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2.1. Key Constructs

2.1.1. Gesture

Gestures are spontaneous, synchronous, and meaningful hand and arm movements produced by people when they speak (McNeill, 1992; McNeill, 2005). McNeill (1992) categorized gestures into four main types: iconic (pictorially depicting concrete referents), metaphoric (pictorially representing abstract ideas), deictic (pointing to locations), and beat (indicating rhythm without semantic content). Pedagogical gestures are teachers' gestures that help their students in the context of teaching (Tellier, 2008), which can enhance students' learning (Lim, 2021).

2.1.2. Tense and Aspect

Tense is about when an event happens, "a deictic category that places a situation in time with respect to some other time, usually the moment of speech" (Salaberry & Shirai, 2002, p. 2). English tenses include the past tense, the present tense, and the future tense. Aspect is about how an event unfolds, "the different perspectives which a speaker can take and express with regard to the temporal course of some event, action, process, etc." (Klein, 1994, p. 16). English aspects include the simple aspect, the perfect aspect, the progressive aspect, and the perfect progressive aspect. When Chinese and English are compared in terms of tense and aspect, English has tenses, but Chinese is "tenseless" (Binnick, 1991); Chinese has richer aspect markers than English. Considering the differences between the Chinese and English tense-aspect systems, L2 English tense and aspect can be difficult grammatical features for Chinese learners to acquire. For example, Chinese learners frequently use the base form of an English verb in an obligatory past tense context (Qu, 2019).

2.1.3. Temporal Gesture

People first conceptualize the abstract time as concrete space in mind, and then map the concrete spatial representations onto gestures, which are called "temporal gestures" (Cooperrider, Núñez, & Sweetser, 2014). Some temporal gestures which are common in Chinese and English have been identified. The common temporal gesture for the past is a deictic gesture putting a hand to the left of one's body (Matsumoto & Dobs, 2017). Both Chinese and English conceptualize time along the transversal axis: the middle is the present, the left is the past, and the right is the future. When such conceptualization is mapped onto gesture, the body is the present, the left of the body is the past, and the right of the body is the future. The gesture that the present study examines integrates deictic gesture (pointing to the left), temporal gesture (referring to the past), and pedagogical gesture (used for teaching the English past tense).

2.2. Empirical Studies

2.2.1. Research Topic 1: Pedagogical Gestures

There have been some qualitative observations that identified some pedagogical gestures for teaching tense-aspect (e.g., Hudson, 2011; Matsumoto & Dobs, 2017). There have been only a few quantitative measurements of the effects of pedagogical gestures that generated mixed results, and the pedagogical gestures adopted in previous studies can be debatable. For example, Nakatsukasa (2013, 2016, 2021) found that pedagogical gestures significantly improved oral production of L2 English locative prepositions but did not significantly improve oral production of L2 English regular past tense. The pedagogical deictic gesture used in Nakatsukasa (2013,

2021) (i.e., pointing to the back) may be unclear to the participants who were mainly L1 Chinese learners, because Ng, Goh, Yap, Tse, and So (2017) found that pointing to the back can mean both past and future to Chinese speakers. Therefore, more quantitative studies are needed to examine the effects of pedagogical gestures, and the pedagogical gestures to be adopted need to be of higher validity. The present study attempts to fill the gap through an experiment, and adopts a pedagogical deictic gesture (i.e., pointing to the left to refer to the past) that can be clearer to Chinese speakers. To examine the effect of the gesture, Research Question 1 was proposed: Does the pedagogical metaphoric gesture facilitate L1 Chinese learners' acquisition of the L2 English past tense?

2.2.2. Research Topic 2: Learners' Perceptions of Pedagogical Gestures

Some previous studies delved into learners' perceptions of pedagogical gestures, and learners showed different degrees of awareness of pedagogical gestures (Hudson, 2011; Kunsanagi, 2015; Nakatsukasa, 2013, 2016; Sime, 2008). Some learners expressed appreciation of pedagogical gestures (Hudson, 2011; Kunsanagi, 2015), and the functions of pedagogical gestures include enhancing comprehension, providing feedback, and contributing to interaction (Sime, 2008) and positive affective environment (Zhao, 2007). Chinese speakers tend to have low gesture frequency (So, 2010), and there has been a lack of research that investigates how this low gesture frequency group perceive pedagogical gestures. To fill this gap, Research Question 2 was proposed: How do L1 Chinese learners perceive the pedagogical deictic gesture for teaching the English past tense?

3. Methodology

3.1. Research Design and Procedure

The study adopts a mixed methods research design which consists of two phases. Phase 1 (week 1-5) is a true experiment that follows the procedure of pretest (week 1)-treatment (week 2)-immediate posttest (week 2)-delayed posttest (week 5) with quantitative data collection and analysis. Phase 2 (week 6) is for stimulated recall interviews with qualitative data collection and analysis. Phase 1 aims to quantitatively measure the effect of the pedagogical deictic gesture, and phase 2 aims to discover the learners' perceptions of the gesture. Phases 1 and 2 together form an Explanatory Sequential Design (Creswell, 2015).

3.2. Participants

The participants were 90 students (79 females) from a vocational college in an eastern city in China. Before the experiment, they were informed of the procedure of the experiment, what they were expected to do, and that they would be video-recorded during the treatment lessons. All of them signed the consent form. All the participants signed the consent form. The 90 participants were randomly assigned to three groups: instruction only group that received only verbal instruction without the pedagogical deictic gesture during treatment, instruction + gesture group that received both verbal instruction and the pedagogical deictic gesture during treatment, and control group that did not receive treatment during the experiment but participated in the tests as the other two groups did. The control group received make-up treatment after the treatment. I was the instructor. All the 90 participants completed all the three rounds of tests. The mean age of the participants was 19, and their L1 was Chinese. Their mean length of English language learning was 9.5 years. Before the experiment, they took the Oxford Placement Test (Oxford University Press and University of Cambridge Local Examinations Syndicate, 2001), and their

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test results showed that their general English proficiency level was A2 (i.e., elementary). One-way between-subjects ANOVA of the 90 participants' scores in Oxford Placement Test showed that there was no significant difference among the three groups, $F(2, 87) = .978$, $p = .380$, indicating that the three groups were of similar general proficiency of English before treatment.

3.3. Treatment

The treatment consisted of two lessons, each lasted 40 minutes. The verbal instruction covered the concept, meaning, and uses of the English past tense. The pedagogical deictic gesture is putting one hand to the left of the body, as illustrated in Figure 1 below. Learners in the instruction + gesture group not only saw the gesture, but also imitated and produced the gesture.

Figure 1. The pedagogical deictic gesture for the English past tense.

3.4. Instruments

3.4.1. Untimed Grammaticality Judgment Test (UGJT)

To address Research Question 1 and to measure the participants' acquisition of the English past tense, untimed grammaticality judgment test (UGJT) (Ellis, 2005; Loewen, 2009) was administered at the three testing times. At each testing time, there were 10 written sentences, all targeting the English past tense. The participants were asked to judge whether each sentence was grammatically correct, and to provide the correct form if they judged the sentence as grammatically incorrect (e.g., I <u>walk</u> to school yesterday. (×) <u>walked</u>). Among the 10 sentences, 6 were grammatically incorrect and the other 4 were grammatically correct. A participant received 1 point when s/he judged a correct sentence as correct. S/he also received 1 point when s/he judged an incorrect sentence as incorrect and continued to provide the correct form. The full score is 10. Three versions of the UGJT were created and counterbalanced at each of the three testing times to reduce practice effect. A pilot study showed that the three versions were of equal level of difficulty. I marked all the test papers, and 20% of the papers were also marked by a research assistant. The interrater reliability was .983.

3.4.2. Stimulated Recall Interview

To address Research Question 2 and to investigate the participants' perceptions of the pedagogical deictic gesture, stimulated recall interviews (Gass & Mackey, 2000) were conducted with each of the 30 participants in the instruction + gesture group. Video excerpts of the pedagogical deictic gestures during the treatment lessons were played to the interviewees to stimulate their memory. The interview questions were semi-structured, focusing on the participants' awareness of the gesture, attitudes towards the gesture, interest in the gesture, and perceived importance, functions, and effectiveness of the gesture.

3.5. Data Analysis

To answer Research Question 1 on the effect of the pedagogical deictic gesture on L1 Chinese learners' acquisition of the target L2 English past tense, descriptive and inferential statistical

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analyses were conducted with SPSS 25 (IBM, 2017) on the participants' scores for the UGJT. A 3 (pretest vs. immediate posttest vs. delayed posttest) × 3 (instruction + gesture vs. instruction only vs. control) two-way mixed-model repeated measures ANOVA was run on the UGJT scores. ANOVA revealed that there was a significant interaction effect between time and treatment, $F(2.887, 125.577) = 5.737, p < .001, \eta_p^2 = .247$. To further explore the interaction effect, simple main effects analyses were conducted for all levels of time at each level of treatment and for all levels of treatment at each level of time. When there was a significant simple main effect, simple comparisons followed. Specifically, when there was a significant simple main effect of time, to find out where the significant difference(s) lied among all levels of time at a certain level of treatment, *post hoc* simple comparisons of all levels of time were performed. Simple main effects and *post hoc* simple comparisons of time were performed by doing a one-way within-subjects ANOVA at each level of treatment. When there was a significant simple main effect of treatment, to find out where the significant difference(s) lied among all levels of treatment at a certain level of time, simple pairwise comparisons of all levels of treatment were performed. Simple main effects and simple pairwise comparisons of treatment were performed by /EMMEANS syntax commands in SPSS. Bonferroni was adopted for adjustments for multiple pairwise comparisons in both *post hoc* simple comparisons and simple pairwise comparisons. The comparisons among the time conditions were made to gauge the effectiveness of the treatments, and the comparisons among the treatment conditions were made to assess the efficiency of the different treatments. The alpha was set at .05 (2-tailed) for the inferential statistical tests. To answer Research Question 2 on L1 Chinese learners' perceptions of the pedagogical deictic gesture, content analysis of the stimulated recall interviews was conducted.

4. Results

4.1. Research Question 1

The means and standard deviations of the UGJT scores are presented in Table 1, and the means are graphically plotted in Figure 2.

Table 1. Means and standard deviations of the UGJT scores.

	Pretest		Immediate posttest		Delayed posttest	
	M	*SD*	*M*	*SD*	*M*	*SD*
Instruction only	8.517	1.694	9.583	0.744	9.683	0.969
Instruction + gesture	7.850	2.126	9.683	0.404	9.350	0.745
Control	8.250	2.392	8.400	1.945	8.500	2.113

Note. There were 30 participants in each group, and all the 90 participants participated in all the three times of tests.
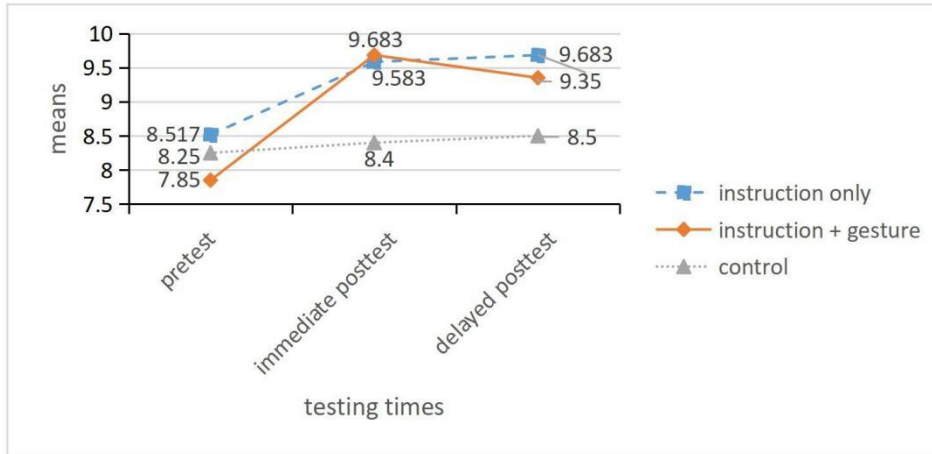
Figure 2. Group means of the UGJT scores across the treatment (instruction only, instruction + gesture, and control) and time (pretest, immediate posttest, and delayed posttest) conditions.

There was a significant simple main effect of time in instruction only group, $F(1.610, 46.693) = 17.088$, $p < .001$, $\eta_p^2 = .371$. *Post hoc* simple comparisons showed that immediate posttest score ($M = 9.583$, $SE = .136$) was significantly higher than pretest score ($M = 8.517$, $SE = .309$), $p < .001$, and that delayed posttest score ($M = 9.683$, $SE = .177$) was also significantly higher than pretest score, $p < .001$. There was also a significant simple main effect of time in instruction + gesture group, $F(1.290, 37.415) = 18.180$, $p < .001$, $\eta_p^2 = .385$. *Post hoc* simple comparisons showed that immediate posttest score ($M = 9.683$, $SE = .074$) was significantly higher than pretest score ($M = 7.850$, $SE = .388$), $p < .001$, and that delayed posttest score ($M = 9.350$, $SE = .136$) was also significantly higher than pretest score, $p = .001$. There was no significant simple main effect of time in control group, $F(1.552, 45.005) = .588$, $p = .518$, $\eta_p^2 = .020$.

There was no significant simple main effect of treatment at pretest, $F(2, 87) = .773$, $p = .465$, $\eta_p^2 = .017$, which confirmed that the three groups were of equal levels of acquisition of the English past tense prior to treatment. There was a significant simple main effect of treatment at the immediate posttest, $F(2, 87) = 10.192$, $p < .001$, $\eta_p^2 = .19$. Simple pairwise comparisons showed that instruction only group ($M = 9.583$, $SE = .224$) was significantly higher than control group ($M = 8.4$, $SE = .224$), $p = .001$, and that instruction + gesture group ($M = 9.683$, $SE = .224$) was also significantly higher than control group, $p < .001$. There was also a significant simple main effect of treatment at delayed posttest, $F(2, 87) = 5.623$, $p = .005$, $\eta_p^2 = .114$. Simple pairwise comparisons showed that instruction only group ($M = 9.683$, $SE = .257$) was significantly higher than control group ($M = 8.5$, $SE = .257$), $p = .005$, and that instruction + gesture group ($M = 9.35$, $SE = .257$) tended to be significantly higher than control group, $p = .065$.

Table 2 below summarizes the inferential statistical analysis results of the UGJT, in terms of the simple main effects and *post hoc* simple comparisons of all levels of time at each level of treatment. Table 3 below summarizes the inferential statistical analysis results of the UGJT, in terms of the simple main effects and simple pairwise comparisons of all levels of treatment at each level of time.

Table 2. Summary of the inferential statistical analysis results of simple main effects and *post*

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hoc simple comparisons of all levels of time at each level of treatment

Instruction only	Instruction + gesture	Control
Large effect (η_p^2 = .371) *Immediate > Pre* *Delayed > Pre*	**Large effect** (η_p^2 = .385) *Immediate > Pre* *Delayed > Pre*	**ns**

Note. In each cell in the main body of the table, words in boldface show the simple main effect of all levels of time at a certain level of treatment ("ns" means "no significant difference", and "large effect" means "a significant difference with a large effect size"), and below "large effect" are words in italics which show the pairwise comparisons of all levels of time at a certain level of treatment. Words with the grey background show the information that can be extracted for the direct comparison between instruction only and instruction + gesture treatment.

Table 3. Summary of the inferential statistical analysis results of simple main effects and simple pairwise comparisons of all levels of treatment at each level of time

Pretest	Immediate posttest	Delayed posttest
ns	**Large effect** (η_p^2 = .19) *Instruction only > Control* *Instruction + gesture > Control*	**Medium effect** (η_p^2 = .114) *Instruction only > Control* *Instruction + gesture > Control (tendency)*

Note. In each cell in the main body of the table, words in boldface show the simple main effect of all levels of treatment at a certain level of time ("ns" means "no significant difference", "large effect" means "a significant difference with a large effect size", and "medium effect" means "a significant difference with a medium effect size"), and below "large effect" and "medium effect" are words in italics which show the pairwise comparisons of all levels of treatment at a certain level of time.

From inferential statistics for the effects of time, it can be seen: 1) both the instruction only group and the instruction + gesture group significantly improved over time with large effect sizes; 2) instruction + gesture group's effect size was slightly larger than that of instruction only group. Therefore, instruction only and instruction + gesture are similar in terms of treatment effectiveness. From the inferential statistics for the effects of treatment, it can be seen that at each testing time, there was no significant difference between the instruction only group and the instruction + gesture group. Therefore, instruction only and instruction + gesture are similar in terms of treatment efficiency. Based on these results, it can be concluded that to facilitate the acquisition of the English past tense, instruction only and instruction + gesture are similar in terms of treatment effectiveness and treatment efficiency. Verbal instruction alone can significantly facilitate the acquisition of the English past tense, whereas gesture does not significantly facilitate the acquisition of the English past tense.

4.2. Research Question 2

Content analysis of the stimulated recall interviews revealed that 96.67% of the participants recalled that in their previous classes, the frequency of their teachers' pedagogical gestures was rather low, 93.3% of the participants expressed positive attitudes towards and interest in the pedagogical deictic gesture, and they thought that the pedagogical gesture has important functions. One participant commented: "The pedagogical deictic gesture can concretely visualize the abstract concepts of time, which is helpful for me to understand the past tense." Another participant commented: "Producing gestures can engage me in classroom learning."

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5. Discussion

The results for Research Question 1 show that the facilitating effect of the pedagogical deictic gesture on L1 Chinese learners' acquisition of the L2 English past tense is limited. The results for Research Question 2 show that L1 Chinese learners are predominantly in favor of the pedagogical deictic gesture, which they think helps them understand the abstract concept of past.

To account for the limited facilitating effect of the pedagogical deictic gesture, we can examine the interrelationships among the three constructs: mind, gesture, and language. We have abstract concepts of time in mind, and we map them into concrete spatial movements in gesture. In turn, the pedagogical deictic gesture can enhance the conceptualization of time in mind. The present study aims to explore whether the pedagogical deictic gesture can improve learners' acquisition of the English past tense. However, the connection between the gesture (i.e., pointing to the left) and the past tense *-ed* form in language may be indirect, unclear, and not as close as that between the gesture and the concept of past time in mind, and this can be a reason for the limited facilitating effect of the gesture on learners' acquisition of the English past tense. Figure 3 below illustrates the interrelationships among mind, gesture, and language.
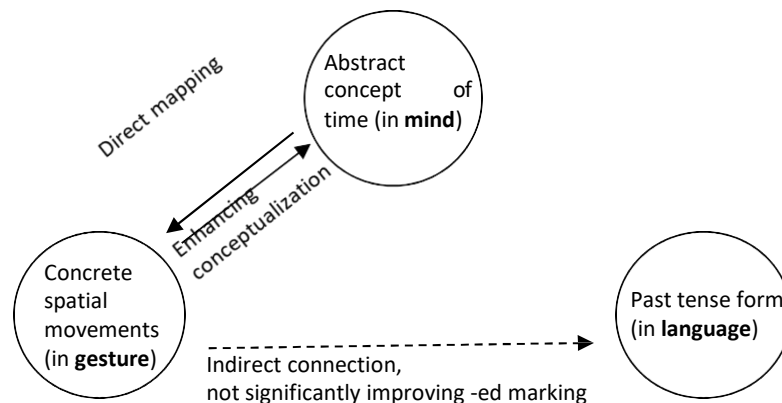

Figure 3. The interrelationships among mind, gesture, and language.

Some previous studies found significant facilitating effects of pedagogical gestures on learners' acquisition of some other target language structures (e.g., locative prepositions in Nakatsukasa [2013, 2016], and pronunciation in Li, Baills, and Prieto [2020] and Morett and Chang [2015]). One reason is that the target language structures in these studies are concrete in terms of meaning or form, and the concrete meanings or forms are represented by the corresponding pedagogical gestures, so there are clear connections between the pedagogical gestures and the target language structures, and the pedagogical gestures can directly improve learners' acquisition of the target language structures. For example, in Nakatsukasa (2013, 2016), the locative prepositions convey concrete spatial meanings, and the concrete spatial meanings are represented by the pedagogical gestures for the locative prepositions. To present the locative prepositions (i.e., *above*, *under*, *in*, *on*, and *next to*) together with the meanings via gestures directly enhances the form-meaning mapping, thus improving learners' acquisition of the locative prepositions. Some other studies such as Li, Baills, and Prieto (2020) and Morett and Chang (2015) examined the effects of pedagogical gestures on learners' acquisition of pronunciation. Pronunciation has concrete tonal contours, and the concrete tonal contours can also be represented by the hand movements in the corresponding pedagogical gestures. To present the pedagogical gestures directly guides learners to produce correct tones. When it comes to the present study, however, the target language structure is the past tense. The past tense conveys an abstract temporal meaning, and the concrete spatial representation is not a feature of itself but embodiment through gesture. As analyzed

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above, the embodiment of past through gesture (i.e., putting a hand to the left of the body) is indirectly and unclearly connected to the past tense form in language (i.e., -*ed* marking). Therefore, the pedagogical gesture for the past tense can only enhance the mapping between the concept of past time in mind and the spatial movement in gesture, but cannot directly enhance the form-meaning mapping of the past tense. To sum up, it can be argued that if a target language structure is concrete, then the connection between the target language structure and the corresponding pedagogical gesture is clear, and the facilitating effect of the gesture can be significant. If a target language structure is not concrete but abstract, then the facilitating effect of the pedagogical gesture can be limited.

Based on the discussion above, it can be argued that the effect of pedagogical gestures on language acquisition depends on whether the target language structures are concrete and directly connected to the hand movements in the pedagogical gestures. Despite the limited facilitating effect on learners' acquisition of the past tense, results for Research Question 2 show learners' favor for pedagogical gestures. Although the pedagogical gesture did not significantly enhance their acquisition of the past tense, it did help them understand the abstract concept of time in a concrete way. Such improvement in conceptualization was not measured and reflected by the acquisition test (i.e., UGJT), but the benefit may not be neglectable. Moreover, the pedagogical gesture engaged learners in classroom learning.

6. Conclusion

The present study reveals the limited facilitating effect of a pedagogical deictic gesture on learners' acquisition of the English past tense, as well as learners' favor for pedagogical gestures. I argue that the effect of a pedagogical gesture may depend on the target language structure's concreteness and its connection with the pedagogical gesture. Therefore, the facilitating effect of embodied cognition may not be taken for granted. More empirical studies that examine the effects of pedagogical gestures on different types of target structures are needed, to further examine the argument, and to further explore the interrelationships among mind, gesture, and language. Moreover, the present study is of short term. Long term studies are also needed to investigate the longitudinal effect of pedagogical gestures on language acquisition.

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Investigation of the Use of English as Students' L1 in Elementary Chinese L2 Classes in Scotland

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Abstract

The use of students' L1 in Chinese L2 teaching remains controversial. Relevant research on Scotland has been lacking and few research objects have focused on ethnic Chinese in local community schools. Taking Edinburgh Chinese School as an example, this article aims to clarify the actual use of L1 in elementary Chinese classes in Scotland. Questionnaire survey, interview, classroom observation, and case analysis have been conducted to investigate teachers' attitudes towards the L1 use and the situation and characteristics of the L1 use in classrooms. The overall findings have revealed that the teachers generally hold a positive attitude towards L1 use; however, relatively strong reliance on L1 still exists in classrooms. In addition to emphasizing the positive role of L1, teachers are suggested to pay attention to reducing the excessive dependence on L1 in actual teaching. The effectiveness of L1 use in Chinese L2 classrooms deserves future research efforts.

1. Introduction

The issue of whether a student's L1 should be used in the teaching of Chinese as a second language (CSL) has not reached a conclusion. In actual CSL instruction, particularly for the elementary stage, a contradiction between 'idea' and 'reality' still exists. Teachers always hope to follow the 'pure target language' principle to provide learners with an authentic and rich Chinese environment; however, they have to use certain L1 of students due to their weak foundations and other factors. Unlike the 'Chinese-only' approach that prevailed in most domestic CSL programs, the role of students' L1, English, is more emphasized in the context of the UK (Ma, 2019). The ability to reflect on the L1 learning experience and apply it to the L2 learning, is even considered as one key capability being 'successful learners' within the national framework of Curriculum for Excellence in Scotland (Scottish Government, 2009).

It is important to understand how students' L1 is thought of and applied in the distinctive Scottish CSL context and diverse world contexts, which can reflect the actual CSL classroom practice and inspire Chinese and other foreign language educators and practitioners worldwide. So far, relevant research focused on Scotland and other regions of the UK has been lacking, and few research objects have involved ethnic Chinese in local community schools, whose language habit,

community background, and bilingual or multilingual ability all make them face the dilemma of language choice in CSL classes. Given this, taking Edinburgh Chinse School as an example, this article attempts to investigate and understand two research questions: (1) What are the teachers' attitudes towards the use of a student's L1 in CSL classrooms? (2) What are the situation and characteristics of the L1 use in actual CSL classrooms?

2. Literature Review

Whether to use a student's L1 in L2 classrooms has been one of the most controversial issues in the field of foreign language education (Shin, et al., 2020). Based on the view that L2 acquisition relies on a large amount of L2 input, Ellis (1984) argues that L1 use in foreign language classrooms would reduce the chance of learners' exposure to the target language. The use of students' L1 is also considered to limit L2 learning efficiency and effect (Atkinson, 1993; Maram & Huda, 2018). However, many studies have confirmed the multi-functionality of L1 in L2 classrooms. For instance, L1 can help explain vocabulary and cultural content (Campa & Nassaji, 2009), alleviate learning anxiety (Norman, 2008; Wilden & Porsch, 2020), close teacher-student relationships (Debreli, 2016), and promote classroom management (Hall & Cook, 2013).

It is a similar case in the field of CSL. Some researchers have advocated an exclusive use of Chinese in its instruction to create a favorable context for understanding the mindset of the target country and avoid learners' over-reliance on their L1 (Hao, 2011; Du, 2009). In contrast, Chen (2013) argues that students' L1 can better guide them to get started and reduce the fear of Chinese learning, while the pure Chinese approach often fails to achieve the expected effect. A longitudinal experiment by Wu (2018) also found that students taught via Chinese and English performed better than those via Chinese only in elementary level learning. Recent studies have revealed teachers' varied attitudes and practice of L1 use in CSL classrooms. Zhang & Feng (2019) indicated a general recognition of using a mother tongue or English among teachers at Confucius Institutes in some regions of Europe, North Africa, and Southeast Asia. In contrast, some teachers in China were found to use solely Chinese in order to set an example for students and better manage multilingual classrooms (Wang, 2019). However, these studies are generally conducted by questionnaire and interview, other research methods, such as classroom observation and case analysis, can be combined to understand the actual practices in natural classroom settings.

3. Method

Questionnaire and semi-structured interviews, the most used methods in the field, were chosen as appropriate ways to obtain teachers' attitudes and inner thoughts concerning the L1 use in CSL classrooms (Alvesson, 2002). The questionnaire mainly focused on teachers' attitudes towards the necessity and effectiveness of the L1 use. Semi-structured interviews were to further understand the specific attitudes towards language use in classes, such as the reasons for choosing media of instruction and influencing factors. The processes were conducted in an anonymous online format and participants were assured that their privacy would be treated confidentially.

Also, to make the results more objective, classroom observation and case analysis were adopted to understand the actual situation and characteristics of language employments in naturalistic settings. Classroom observation included two phases, traditional classroom instruction and online teaching due to the Covid 19, lasting about four months. Framed by the LICC Paradigm developed by the research team from East China Normal University (Shen & Cui, 2008), the CSL lessons were observed and recorded from four dimensions: Learning, Instruction, Curriculum, and Culture. Students' learning is the center of classroom teaching. It is affected by three factors: the direct teaching behavior of the teacher, the nature of the course, and the classroom culture reflected by the context and interpersonal relationship (Cui, 2012). In addition, based on a CSL classroom case, this paper discussed the quantitative proportion of L1 in teachers' classroom discourse and its application. The purpose is to gain a deeper understanding of the L1 use in specific teaching processes and teacher-student interaction. According to the classification of Wu & Wang (2014) and Cheng (2009), six types of teachers' classroom discourse were focused on: deixis, demonstration, explanation, organizing, questioning and feedback.

4. Results

4.1. Teachers' attitudes

4.1.1. The necessity of L1 use

15 teachers completed the questionnaire survey, 86.67% were ethnic Chinese (N=13), 13.33% were overseas Chinese students (N=2). Three of them participated in interviews. All the teachers (100%, N=15) have used a combination of Chinese and students' L1, English, in CSL classes. This echoes the generally positive attitudes towards the necessity of L1 use as reflected in survey results. Most participants agreed (40%) and even strongly agreed (40%) the viewpoint that it is necessary for them to use students' L1 in CSL instruction.
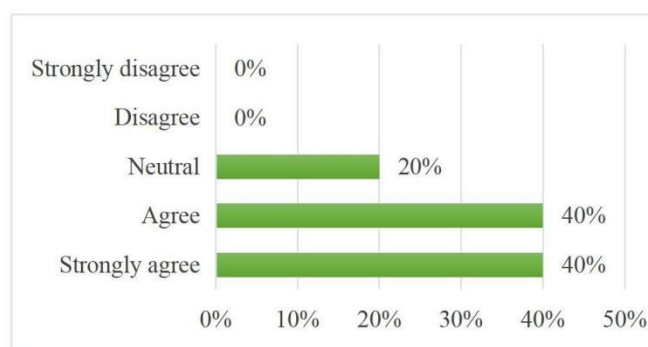
Figure 1. Teachers' recognition of the necessity of L1 use

The teachers further attributed the necessity of using L1 to the consideration of students' present lower Chinese proficiency. A pure Chinese instruction may incur invalid language input and emotional barriers such as anxiety (Macaro & Lee, 2013). Also, for this reason, 80% of the teachers held a negative attitude towards the exclusive use of Chinese in their classes. As one teacher stated:

Because the current Chinese teaching in our school is mainly at the primary stage.

At this time, certain English is required. The main consideration is the current level of the students and whether they can accept and master the content they have learned. (T2)

4.1.2. The effectiveness of the L1 use

The convenience and efficiency of L1 use contributed to its acceptance by teachers. From the perspective of teachers' instruction, the use of English is conducive to the smooth progress of teaching; in terms of students' learning, the teacher's use of English also helps students better understand the learning content and classroom instructions.

> One of the reasons why I use students' L1 is because it is very convenient. Sometimes a knowledge point is very complicated if it is explained in Chinese, and students may not understand it; if it is explained in English, students will know what it means at once. (T3)

More teachers mentioned the explanatory role of students' L1 in CSL classrooms. When asked how to explain the learning content that confused students, compared with insisting on using sole Chinese, more teachers chose to use some English, to supplement the explanation. 73.33% of them further believed that through the L1, students could soon understand the knowledge points that confused them before. Nevertheless, some teachers also used body language, pictures, and objects in conjunction with the target language to promote students' understanding. This implicates the auxiliary role of nonverbal means in CSL teaching.
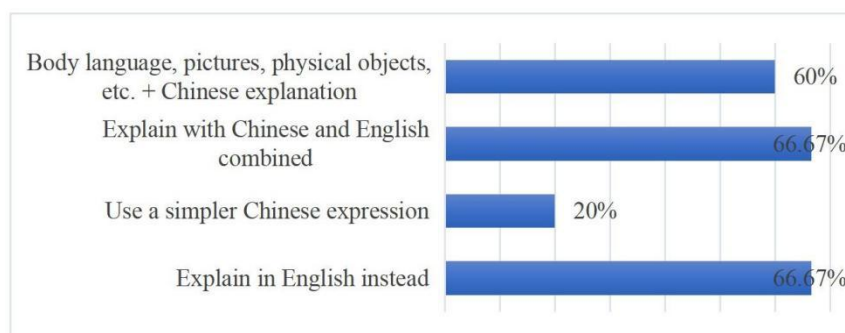
Figure 2. The different ways in which teachers explain students' questions

4.1.3. The amount of the L1 use

Although the teachers generally held a positive attitude towards using students' L1, they did not advocate excessive reliance on it. It is evidenced from their ideal proportion of L1 use in CSL classrooms that about 95% of the teachers argued that the proportion of English should not exceed that of Chinese, to ensure enough target language input.
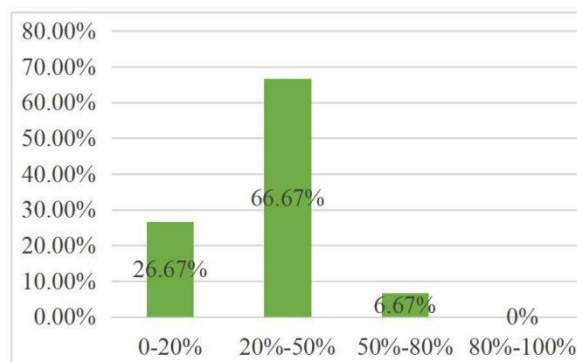
Figure 3. Teachers' ideal proportion of L1 use

The result is relevant to the fact that most students are ethnic Chinese. The researcher has learned from the teachers that about 85% of students have at least one of their parents from China; most of them learn Chinese from their parents' desire to pass on their language and culture. For this reason, the teachers have tried to provide students with more opportunities to maximize their exposure to Chinese in classrooms.

Nevertheless, most teaches in interviews proposed that the specific amount of L1 use should be based on the varied needs of individual students. It means that the frequency and proportion of the L1 use should be adjusted according to the different levels and progress of students. As one teacher said:

> In my opinion, it depends on the students…I mean it should be targeted, a little like what we often say that teaching students by their aptitude. For students with a good foundation, I will use more Chinese, because at this time they can achieve further development. But for those with a weak foundation, I will use more English, and then adjust it continually according to their progress. (T1)

4.2. Situation and characteristics of the L1 use

4.2.1. L1 use under the LICC paradigm

4.2.1.1. Dimension of Learning

 Students, especially younger students, were found to generally have a strong dependence on their L1 in classroom learning. It was prevalent in classes that students relied on English translation and annotations to understand learning content. When certain vocabulary and expressions were mentioned, students generally associated them with the corresponding ones in English for memorization and understanding. For instance, some students may equate the meanings of '观察' and 'observe/investigate'. Although this translation method is conducive to a quick understanding, the inaccuracy may still exist, and negative transfer needs to be avoided.

Students also tended to use L1 in classroom communication and interaction. When relevant expressions were required, they first tended to use English, but lacked the awareness of autonomous using the target language; however, on the teacher's reminder or request, students can switch to the language they are learning. Immature

metacognitive systems and lower Chinese proficiency are the possible factors for the reliance on L1, requiring more support and guidance from teachers.

4.2.1.2. Dimension of Instruction

Teachers used students' L1, English, most frequently in the teaching of vocabulary and grammar. When explaining new words and grammar points, teachers often connected their Chinese meaning to English, providing students with corresponding English explanations. Compound words were often divided into morphemes for interpretation. For polysemous words in Chinese, teachers tried to find different English words to match them. One teacher was observed to use three English words, including 'news', 'message' and 'information', to interpret '消息'. It is the case with the explanation of sentences. The general practice was to provide Chinese sentences first and then repeat in English accordingly. This supports the view that L1 helps to achieve certain teaching purposes in providing translation and clarifying grammatical patterns (Campa & Nassaji, 2009; Hall & Cook, 2013).

In some cases, teachers used English in interactions with students, including conducting classroom management, explaining activity procedures, and checking comprehension of learning content. The purpose was to facilitate effective communication between the two sides and expect corresponding replies from students. This mirrors the reasons mentioned in the interview for teachers to use L1 to help students better understand operational classroom instructions.

4.2.1.3. Dimension of Curriculum

Grammar-translation method was found to be the main approach in classrooms. This may be related to the setting and implementation of Chinese courses, which mainly focuses on vocabulary and grammar teaching. Students have been required to understand and master the meaning and usage of vocabulary and grammar. Grammar translation is easier to achieve this, by directly connecting L1 and L2 to help understand the corresponding meaning of knowledge points. This kind of comparative learning between languages, as mentioned earlier, is also an educational concept advocated in the Scottish context.

Despite this, the application of modern multimedia technology on the online course due to the Covid-19 reduced the use frequency of English. By providing rich and diverse resources, including texts, pictures, sounds, and animations, modern multimedia technology promotes students' quick understanding of knowledge points and interest in learning (Sawin, 2018). Its adoption has helped alleviate the teachers' reliance on English in explanation. It was evidenced that some teachers used animation software in the teaching of Chinese characters. The stoke orders of characters were shown to the students in GIFs, thus avoiding the complicated explanation in English.

4.2.1.4. Dimension of Culture

In line with Hall & Cook (2013), the use of students' L1 in classrooms was found to help close the relationship and shorten the psychological distance among teachers and students. In the observed classes, the communication and interaction between teachers and students mostly relied on L1, creating a favorable atmosphere to

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promote teacher-student interaction and student learning. During a grammar exercise, the teacher introduced the dishes of a local Chinese restaurant, and the brief exchange of dining experience in English between teachers and students only made the classroom activity reach the highest point. Also, as students' most familiar language, the use of English helps to promote ease and comfort in contact, thereby reducing the psychological pressure of learning a new language.

Some teachers' choice and use of L1 varied with different learners, considering their discrepant Chinese proficiency and L1 demands. Take the instruction of 'reading new words/texts' as an example, when inviting those who have relatively weak foundations, English would be employed as a supplement, to ensure the students can understand what the instructions mean. Besides, the teacher always invited in an encouraging tone, such as 'have a try, 好不好', to give the more introverted children confidence in uttering Chinese. In this sense, each learner was treated 'differently' but was given equal respect and trust, promoting a 'democratic' classroom with the full participation of students.

4.2.2. L1 use in teachers' classroom discourse

As to the space limitation and the integrity of collected data, focused on one classroom case, the article counted and analyzed the unit numbers of the six types of teacher's classroom discourse, the unit numbers of the L1 and L2, and the corresponding proportions. The statistical results are shown in Table 1:

Table 1. The unit and proportion of L1 and L2 in teacher's classroom discourse

Teacher's classroom discourse	Total unit	Unit of L2 (Chinese)	Proportion of L2 (Chinese)	Unit of L1 (English)	Proportion of L1 (English)
Deixis	142	74	52.11%	68	47.89%
Demonstration	79	79	100%	0	0%
Explanation	837	731	87.34%	106	12.66%
Organizing	264	202	76.52%	62	23.48%
Questioning	146	90	61.64%	56	38.36%
Feedback	112	71	63.39%	41	36.61%

Overall, the proportion of L1 use is lower than that of target language among all types of teacher discourse. This echoes the result in the questionnaire regarding teachers' ideal proportion of L1 use in CSL classrooms: more than 90% of teachers believe that the appropriate proportion of L1 use should not exceed 50%. It shows that the case class guaranteed a certain amount of target language input. Looking from the concrete data, students' L1 was used more in teacher discourse with strong teacher-student interaction, while the teacher discourse involving language content offered more target language.

The instruction of how to read and pronounce is the most common demonstration in CSL classrooms (Wu & Wang, 2014). According to the statistical results, teachers did not use any English when making pronunciation instructions and demonstrations

but chose to use a sole target language for relevant explanations. For instance, the expression of Chinese tones has been agreed upon between teachers and students without the need for English translation (e.g. "第三声" instead of "the third tone'). The finding is consistent with a study on Thai CSL teachers, an exclusive use of Chinese in demonstration exists among all participants regardless of their Thai proficiency (Shi, 2018). This also indicates to some extent that CSL teachers seldom rely on students' L1 in phonetic teaching. As shown in a survey by Liu (2019), most CSL teachers used the L1 least frequently in phonetic teaching, in which even more than 70% of teachers suggested that zero L1 can be adopted.

Also, the proportion of L1 in teacher discourse for knowledge points explanation is only 12.66%, providing learners with a rich target language input. However, according to the classroom observation results mentioned earlier, teachers used the L1 most frequently in the teaching of vocabulary and grammar, which seems to be in contradiction with the 12.66% proportion in explanation. In fact, this indicates that although teachers used the L1 frequently when explaining vocabulary, grammar, and other learning contents, but did not rely heavily on it and ensured enough target language input.

Compared with teachers' demonstration and explanation that mainly focus on language learning content, deixis, organizing, questioning and feedback require more interaction and communication between teachers and students. Teachers use deixis to issue instructions to students, and students are required to take corresponding actions; questioning and feedback require students to respond to teacher's questions and teachers to evaluate students' classroom behavior respectively; teachers use organizing language to maintain the classroom order, hoping that students can restrain and adjust their behavior on this basis. Given the high proportions of L1 in these teacher discourses, this paper believes that this may be related to the purpose of teachers to communicate with students and facilitate students to understand relevant discourse content. As found in teacher interviews, helping students understand relevant teaching instructions is indeed one of the important reasons for teachers to use English in CSL classrooms. In other words, teachers tend to use students' L1 more to interact with students when issuing teaching instructions, asking questions, maintaining class order and other classroom behaviors, to promote a better understanding of the discourse and the communication between the two sides.

5. Conclusion

Situating in Scotland, this study has investigated teachers' attitudes and the actual use of students' L1, English, in CSL classrooms. It was found the teachers generally held a positive attitude towards the L1 use and emphasized its positive roles in promoting Chinese teaching, while the specific amount of L1 use was believed to be based on the different needs of students. In actual Chinese classrooms, teaching methods, learning contents, and situations of students have influenced the L1 use. There was a general reliance on L1 and direct translation. Nevertheless, from the perspective of classroom discourse, L1 was used more in teacher discourse with strong teacher-student interaction, while the teacher discourse involving language content offered more target language.

Although recognizing the positive role of students' L1 in elementary CSL teaching,

teachers should pay attention to reducing the excessive reliance on the L1. First, teachers can adopt alternative means besides students' L1 in Chinese teaching, including using a simpler Chinese expression and some non-verbal methods, such as body language, pictures, and physical objects. Simplifying complex Chinese expressions and fixing commonly used teaching terms can also be employed to avoid complex and repetitive English interpretations (Shi, 2018). Also, given that modern multimedia technology has been found efficient in promoting understanding and favoring enjoyment, teachers can consider bringing it into Chinese classroom teaching. Additionally, teachers should comprehensively adopt multiple teaching approaches, besides the single grammar-translation method. For instance, the communicative approach and task-based teaching method, which advocate students' ability to exploit the target language in real settings, can help reduce the dependence on L1.

As a case study of Edinburgh Chinese School, the generalizability of the research results still needs improvement, and more relevant studies are expected in the future. Besides, more attention and discussion can be given to the effectiveness of L1 use in CSL classrooms in diverse world contexts.

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A COMPARISON OF CHINESE AND HONG KONG ENGLISH SECOND LANGUAGE TEXTBOOKS IN RELATION TO GENDER

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Abstract

In recent years, with the emergence of women's movements such as the #MeToo movement, there has been a progressive increase in awareness of the significance of gender education. One of the crucial and primary sources of gender education is education in schools, which is based on textbooks. This paper utilizes social cognitive theory to explore gender education in textbooks. Through the quantitative analysis of the proportions of male and female characters and pronouns, the differences between social roles presented for men and women are demonstrated. This study concludes that the issues of equality in gender education in Hong Kong and Chinese textbooks have been reduced, yet not transformed intrinsically, with men remaining dominant and women being passive. In response to these issues, this study recommends remedies to raise awareness among textbook editorial practitioners and a more balanced approach to teaching among teachers.

1. Introduction

Gender, in general, is a global and historical issue, particularly in the context of gender equality, which has been widely discussed in most spheres and across all age groups. The 2015 Global Monitoring Report emphasises the necessity of amending the content of textbooks and improving gender balance, and also encourages children to contemplate and query gender stereotypes embedded in society (UNESCO, 2015).

Both Mainland China and Hong Kong have been actively contributing to the development of gender equality. The National Program on the Development of Chinese Women (2011-2020) aims at ensuring equal cooperation between women and men, attaching high priority to the participation of women in the entire economic and social environment, and guaranteeing the advancement of women in the pursuit of equitable social progress (Li, 2012). Hong Kong's quality textbooks are formulated with student learning as their objective and establish guiding principles pertaining to gender content. The guidelines specify that content cannot feature any prejudices, including excessive generalisations and stereotyping. Moreover, the content and graphics should not discriminate or connote any pattern of bias on the basis of "gender, age, race, religion, culture, disability", etc. (Bureau, 2016).

However, on the perception of gender issues, the earliest acknowledgement of gender awareness concerns in Hong Kong can be traced back to the 1990s. Hong Kong has always been viewed as an international city with a multilingual diversity compared to Mainland China as a result of having been a British Colony (Carroll, 2007). Mainland

China bears more historical and cultural encumbrances and presents more problematic gender issues than Hong Kong, although a series of political efforts have been made to promote gender equality in China since the 1990s.

The purpose of this research is to explore and examine the different aspects of the latest edition of textbook English textbooks employed in the two regions, whether they meet the expectations of the current gender-related policies; whether the textbooks have limitations in promoting gender equality; and whether gender stereotypes continue to persist.

2. Literature Review

Theory

Bandura's social cognitive theory states that people adapt behaviours, in addition to direct responses to acquired behaviours, by learning from role models and imitating others' behaviours (Bandura, 1999). In this context, textbooks represent a significant model for instruction by teachers and the adaptation of student learning. Students obtain much of their gender-related knowledge, attitudes, and behaviours from the descriptions of gender presented in textbooks. School also supplies substantial gender-based information which is learned and imitated by children. Findings from sociolinguistic research demonstrate that language, attitudes, and behaviour in general are strongly interconnected, among which language occupies a crucial function in social interaction (Frank and Treichler, 1989). Therefore, there has been considerable concern about sexism in the use of language. The downside of gender stereotypes in textbooks has also been the focus of academic research, where Gharbavi and Mousavi (2012) consider that sexism in textbooks can negatively impact students. As such, gender-biased language generally tends to be unjustified and inequitable; even textbooks that fail to embrace an idea of gender equality can be destructive to the personality of students. From a more concrete standpoint, there are potential adverse effects on individuals in terms of impression management, where men and women seek to be socially accepted and tend to portray themselves in line with societal stereotypes; or they believe in stereotyping as the optimal means of representing men and women (Oyebola, 2003).

Existing Issues of Gender in Hong Kong English Textbooks

Lee and Collins (2010) have analysed and studied the words and images presented in ten English textbooks from Australia and Hong Kong. These were developed in the context of educational experiences in Hong Kong and Australia. This work has shown that these textbooks followed traditional gender decision-making patterns, with males appearing ahead of females. Furthermore, Lee (2014) carried out a study evaluating the evolution of the equality and representation of gender in the textbooks written by the same primary school English textbook author, in Hong Kong, across different periods in time. There was an increase in the proportion of females in the textbooks, but inequality is still present as illustrated by the absence of alterations concerning the gender ordering of males and females and the stereotyping of social identity. Women are characterized as domestic and household-oriented and men as productive employees, the former acting more passively while the latter are more socially active. This is exhibited by the lower frequency at which women are seen as having paid

occupations compared to men, both in image and text form Lee and Collins (2006). Yang (2016) proposes an opposing perspective by examining the frequency, graphic illustrations, and domain of involvement of males and females in the newly published first-year Hong Kong English textbooks. He maintains that there are no extensive female stereotypes in the textbooks, with no instances of extreme stereotyping, and no significant differences in the scenarios in which males and females appear. He also maintains that there are even more prominent representations of females and more discourse around them (Yang, 2011).

Existing Issues of Gender in Chinese English Textbooks

In Mainland China, where English is also the most extensively studied foreign language, English textbooks represent a highly significant contribution to the teaching and learning of English. Similarly, the issue of gender awareness in English textbooks raises considerable concerns. Li et al. (2017) conducted an analysis of 'Success with English' (SWE), a series of English textbooks that are widely utilised in Guangzhou. The results demonstrate that unbalanced gender social stereotypes and role representations are significantly noticeable in these textbooks, with a predominant proportion of males over females and a preference for male roles over females. There are similar concerns about the content of English textbooks in both secondary schools and universities, not just textbooks written for primary school students. A study of secondary school textbooks by Tao (2008) has also determined the existence of gender discrimination in textbooks, both in lectures as well as exams, albeit to a differing extent. University English textbooks, de facto, place greater emphasis on the target culture and to a lesser extent on the international culture and source culture (i.e., the background of the original English culture) (Liu and Laohawiriyanon, 2012).

As a review of previous studies, the literature provides research on gender stereotypes in textbooks in Hong Kong and Mainland China respectively, although none of the studies has compared gender representation in textbooks in the two regions. Moreover, while equality, diversity, and inclusiveness are currently embraced at the core of educational transformations implemented worldwide, there is no literature concerning the representation of the LGBTQ+ community in textbooks. Therefore, based on these two limitations, this paper aims to fill the aforementioned gaps in the Chinese and Hong Kong textbooks examined in the pursuit of further and more extensive equality in textbooks.

3. Research Methods

Critical Discourse Analysis (CDA) is an interdisciplinary methodological framework that integrates multiple perspectives from different branches and schools of science to examine the potential connections among linguistic and social dimensions. Van Dijk (2001) explains that CDA is a form of discourse analytical research concerned with how abuses of social power, dominance and injustice are reified, reconstructed and counteracted through texts, and the means by which conversations are conducted in social and practical environments. This explains the reasons for employing CDA as a qualitative analysis approach in this research, since it is a tool for analysing social issues. Following Fairclough (1992) illustration, critique implicitly connotes hidden connections and underlying problems. It signifies decoding the mechanisms of

ideology and providing a critical analysis of how ideological discursive constructions camouflage underlying power struggles or injustces occurring in the social system. Therefore, this paper uses Fairclough's three-dimensional approach. According to Fairclough, CDA on any text should proceed through three interconnected stages, i.e., description, interpretation, and explanation.

3.1.1. Description

This study employs a critical discourse analysis on a 'bottom-up' basis, from text to discourse. According to Fairclough, the description of the text analysis constitutes the initial dimension of critical discourse analysis. Within the description, Fairclough (1989) suggests that text analysis can be conducted through linguistic characteristics of the text, i.e., from the lexicon, grammar, as well as text structure.

3.1.2. Research Material

This paper examines the issue of gender representation in English textbooks of Hong Kong and Mainland China. For the research sample, the most widely employed versions of English textbooks in Hong Kong and Mainland China used by the largest number of students were selected. In this research, four English textbooks were selected, including two from Mainland China and two from Hong Kong, all of designed for students in Grade 8. Among these, the People's Education Press (PEP) and Foreign Language Teaching and Researching Press (FLTRP) editions were studied, while the Longman Elect and Longman English Spark editions were examined as the textbooks for Hong Kong. This was judged on the basis of the popularity of the textbooks and the broad coverage achieved.

3.1.3. Research Questions

In this research, a general research question was posed, 'What is the difference in gender representation in each of the textbooks?' Following this research question, the representation of gender issues (e.g., gender stereotyping, preconceived notions) in each of the textbooks will be scrutinised in each of the following four aspects. 1. What is the percentage of male and female characters respectively, and what is the frequency of mentioning characters? 2. What is the frequency of the use of pronouns in the four books, including 'she', 'he', 'her', 'him', 'herself', 'himself', 'they', 'them' and 'themselves'? 3. What are the social roles of males and females?

Categories	Criteria	Codes
Female and male characters (RH 1)	Look for characters that appear in the book as males and females, as well as characters that match both genders. E.g., 'you are Jamie, and you are expected to guide the exchange students coming from the UK on a tour at school'. 'Jamie' in this sentence can be either male or female.	• Mentions Men • Mentions Women • Mentions Both

Pronouns (RH 2)	The frequency of occurrence of pronouns comprising nominative pronouns (he, she, they), accusative pronouns (him, her, them), and reflexive pronouns (himself, herself, themselves).			• he, him, himself • she, her, herself • they, them, themselves
Social roles (RH 3)	Identify the social roles that occur in the text. These roles need to correspond to the occupations of the characters in the text, excluding words that only mention the occupation as a study vocabulary. Social roles are divided into five main categories: male-monopolized, male-dominated, female-monopolized, female-dominated, and gender-shared social roles.			Teacher, actor, student, artist, staff, etc.

Table 1: Code Criteria

4. Results (Illustration)

For the purpose of addressing the first research question, male and female characters are counted, along with the mentions they receive in the textbooks by gender (see Table 2). Taking a detailed analysis of the Chinese and Hong Kong textbooks, the differences between male and female characters in the two Chinese textbooks examined are lower than the differences in the Hong Kong textbooks. A total of 58 male characters and 61 female characters are found in the PEP and FLTRP editions of the textbooks, resulting in slightly more female characters than male characters in general. In contrast, there are 99 male characters and 74 female characters in the two Hong Kong textbooks, with an overall difference of 25 more male characters than female characters.

		Characters		
		Character Men	Character Women	Character Meets Both Genders
PEP	Count	32	40	2
	Percent	43.20%	54.10%	2.70%
FLTRP	Count	26	21	3
	Percent	52.00%	42.00%	6.00%
Longman Spark	Count	43	37	6
	Percent	50.00%	43.00%	7.00%
Longman Elect	Count	56	37	9
	Percent	54.90%	36.30%	8.80%

Table 2: Characters

Furthermore, in terms of the mentions of males and females (see Table 3), regarding

the Chinese and Hong Kong perspectives, the number of male mentions in Hong Kong textbooks exceeds the number of female mentions, with a total of 821 (43.32%) for males and 587 (31%) for females. In comparison, the corresponding mentions in Chinese textbooks are higher for females than for males, numbering 1053 for females (44.28%) and 902 for males (37.93%). In addition, the percentage of co-mentions in Hong Kong textbooks is comparatively higher, at 25.7%.

Overall, the discrepancy between males and females in Chinese textbooks is lower than that identified in Hong Kong textbooks. In the PEP textbook, the number of female characters and mentions exceeds that of males, while in the FLTRP textbook, the number of male characters is greater than that of females, but the number of mentions of female characters surpasses that of males. The Hong Kong textbooks include a higher number of males than females in both the proportion of characters and mentions. This is particularly the case in the Longman Elect version, where there are substantially more male characters than females, and the number of mentions of male characters is also significantly higher than that of female characters. For the Longman Spark edition, there is less disparity, comparatively, with the number of male characters and number of mentions being less different from that of females and accomplished in a balanced manner.

		Mentions		
		Mentions Men	Mentions Women	Mentions Both
PEP	Count	460	601	208
	Percent	36.20%	47.40%	16.40%
FLTRP	Count	442	452	215
	Percent	39.90%	40.80%	19.40%
Longman Spark	Count	271	258	246
	Percent	35.00%	33.30%	31.70%
Longman Elect	Count	550	329	241
	Percent	49.10%	29.40%	21.50%

Table 3: Mentions

For the purpose of examining the second research question, on the whole (the results are presented in Table 4) the proportion of male pronouns (he, him, himself) appears lower than the proportion of female pronouns (she, her, herself), and the proportion of generic pronouns (they, them, themselves) stands out as the highest. The male pronouns are observed 592 times (28.28%), the female pronouns are found 682 times (32.58%), and the generic pronouns are noted 819 times (39.13%). In a comparison between the Chinese and Hong Kong textbooks, the proportion of masculine and feminine pronouns in Hong Kong textbooks shows a greater difference than in Mainland China, with female pronouns appearing more frequently in Hong Kong textbooks. Furthermore, the usage of generic pronouns is more common in Hong Kong textbooks. The Chinese textbooks include 294 occurrences of masculine pronouns, 332 occurrences of feminine pronouns, and 392 occurrences of generic pronouns, while the Hong Kong textbooks are comprised of 298 appearances of masculine pronouns, 350 appearances of feminine pronouns, and 427 appearances of generic pronouns.

		Pronouns								
		he	she	him	her	himself	herself	they	them	themselves
PEP	Count	100	108	15	49	4	1	129	66	3
	Percent	21.10%	22.70%	3.20%	10.30%	0.80%	0.20%	27.20%	13.90%	0.60%
FLTRP	Count	117	118	58	56	0	0	115	79	0
	Percent	21.50%	21.70%	10.70%	10.30%	0.00%	0.00%	21.20%	14.50%	0.00%
Longman Spark	Count	31	97	10	27	0	0	161	67	3
	Percent	7.80%	24.50%	2.50%	6.80%	0.00%	0.00%	40.70%	16.90%	0.80%
Longman Elect	Count	226	152	25	67	6	7	145	46	5
	Percent	33.30%	22.40%	3.70%	9.90%	0.90%	1.00%	21.40%	6.80%	0.70%

Table 4: Pronouns

Female and male social roles in the textbooks are investigated (see Table 5). In all four textbooks, there occurs a higher proportion of male occupations (male-monopolized/male-dominated social roles) than female occupations (female-monopolized/female-dominated social roles). The most significant difference is between male and female social roles in the PEP edition, with a difference of 16.7%, while the smallest difference occurs in the Longman Elect edition, with a difference of 2.9%. However, the percentage of gender-shared social roles is higher than the percentage of male or female occupations in all four books, ranging from 46.1% to 54.5%.

		Roles				
		Male-monopolized social roles	Male-dominate social roles	Female-monopolized social roles	Female-dominated social roles	Gender shared social roles
PEP	Count	14	1	7	0	26
	Percent	29.20%	2.10%	14.60%	0.00%	54.20%
FLTRP	Count	17	1	12	0	36
	Percent	25.80%	1.50%	18.20%	0.00%	54.50%
Longman Spark	Count	8	1	5	3	17
	Percent	23.50%	2.90%	14.70%	8.80%	50.00%
Longman Elect	Count	23	3	19	3	41
	Percent	25.80%	3.40%	21.30%	3.40%	46.10%

Table 5: Social Roles

	PEP	FLTRP	Longman Spark	Longman Elect

Female Profession	Student (2), reporter, performer, doctor, expert, piano player	Doctor (2), teacher (3), actress (2), writer, queen, policewoman, student (2)	Science teacher, teacher (2), student (4)	Student, artist (2), songwriter, dancer, radio host, teacher (3), art student (3), adventure, writer, designer, activist, athlete (2), scientist, celebrity
Male profession	Reporter (3), singer, athlete, actor, host, celebrity, scientist, headmaster, agent, writer, musician, painter, performer	Teacher (3), president, coach, actor (2), head teacher, artist, writer (2), doctor, student, driver, chef, captain (2), athlete	Producer (2), artist, pop star, actor, waiter, writer, soldier, student	Student, antique collector, dancer (2), teacher, computer programmer, entertainer (2), CEO (2), writer, basketball player, scientist, political leader, musician, philanthropist, astronaut, athlete (2), celebrity, motivational speaker, head prefect, business person, doctor, actor
Gender Shared Profession	Student (6), reporter (2), teacher (2), singer, dancer (2), magician, actor, performer, chess player, writer, runner, computer programmer, astronaut, scientist (2), traveller, doctor, expert	Student (7), teacher (5), coach, tourist guide, actor, scientist (3), reporter (3), star, policeman, doctor (5), writer, pupil, police (3), player, runner, singer	Animator, writer (2), police, student (5), actor, video-maker, crew member, designer, adviser, scientist (3)	Student (7), staff, artist (6), performer (2), designer, producer, musician (2), acrobat, thief, researcher, expert, assistant (2), teacher (3), scientist, hunter, coach, celebrity, athlete, writer, swimmer, entertainer, activist, philanthropist, principal

Table 6: List of Professions and Social Roles

Concerning occupations, males have significantly higher occupational richness than females (see Table 6). There are 13 occupations for males and 6 for females in the PEP version, which is twice as many for males as for females. In the FLTRP edition, there are 14 types of professions for males and 7 for females. Longman Spark has 8 categories for males and 3 for females. Longman Elect contains 21 careers for males and 14 for females. In all four textbooks, fewer female decision-makers are represented, whereas men are portrayed as presidents, CEOs, political leaders, and captains, while women are depicted in only one policymaker role as queen. Furthermore, the textbooks are slanted towards the perception that women are more accomplished in the fields of literature and the arts, including teachers, dancers, piano players, etc., while men develop a variety of careers including the mentioned roles, as

well as motivational speakers, soldiers, entertainers, etc.

5. Discussion (Explanation)

The Visibility of Gender in Text

In respect to the visibility of gender in text of this study (including RH1 and RH2), the results substantiate that females are inadequately represented in visibility in the four textbooks under examination. The males are textually presented with 157 roles and 1,732 mentions, while the females show 135 roles and 1,640 mentions, with the total number of roles and mentions being lower than that for the males; male pronouns are observed 592 times, female pronouns are noted 682 times, and generic pronouns are used 819 times. Lee and Collins (2010) studied gender representation in 20 textbooks from Australia and Hong Kong, from which they derived comparable results. There are significantly more male characters than female characters. Furthermore, concerning the generic pronoun 'they', singular 'they' is frequently employed in Australian textbooks, whereas in Hong Kong textbooks, there appears to be a lesser number, albeit representing a certain percentage in textbooks. In contrast, the total amount of usage of generic pronouns in the four textbooks for this study exceeds the employment of the masculine pronouns or feminine pronouns, which indicates an improvement in the adoption of pronouns in textbooks over the years, in an attempt to use the neutral pronouns to maintain a balance between masculine and feminine.

In addition, 'they' can be applied to serve as a gender-neutral pronoun, and singular 'they' is employed to describe any individual, without associating gender with the person concerned. The American Psychological Association's (APA) published manual incorporates anti-gender biased language guidelines, suggesting that the combinatory patterns of he/she or (s)he can be embarrassing and often disturbing, and that the alternative of employing neutral words ('person' or 'they') seems preferable (APA, 2020). Senden et al. (2015) also articulated support for the employment of non-gendered pronouns. They´ indicated that children can be disproportionately impacted by gender categories, and in this context, nongendered pronouns empower them to conceive and construct their stories with more freedom. During the last few years, there has been an increasing number of children's storybooks being published for a range of grades that embrace LGBTQ+ characters.

However, this integration of the LGBTQ+ community remains invisible in textbooks, in which gay or same-sex couples are absent as part of the education agenda (Thornbury, 1999). In Thornbury's observations, the textbooks are not only growing more 'real' but also potentially more politically correct. There are concerns and considerations about preventing stereotypes, embracing diversity, cultivating empathy, addressing global issues, etc. Yet the LGBTQ+ community as a whole remains excluded from receiving recognition of entitlement, largely on the grounds that it either cannot be mentioned or might be offensive to potential markets. As Rashad (2015) demonstrates by introducing children to non-stereotypical material, children who read such material generate a lesser occurrence of gender stereotypes, and she also suggests that the non-existence of gender representation in books encourages children to construct an equal perception of both females and males. It is therefore essential that textbooks should realistically depict society or portray characters in a non-sexist manner.

Occupations

Notwithstanding the findings of this study, which signify that on the whole gender representation in textbooks is progressing, a close scrutiny of the patterns of gender representation reveals differences in the representation of men and women in various contexts. As in RH 3, there is an abundance of female occupations represented in social roles, but the discrepancy between male and female occupations remains prominent. In Chinese and Hong Kong textbooks, the gender representation does not reach a balance, and men receive more roles in social occupations. The findings are in line with Lee (2014) study insofar as gender stereotypes are still witnessed in the description of the social roles performed by men and women. Her findings demonstrate that women's social roles have progressed over the two decades, from 76 (35.8%) to 136 (43.5%), while still lagging behind the number of male occupations.

Additionally, the majority of women in the four textbooks in this study pursue jobs associated with the arts and literature, including songwriters, artists, designers, performers, etc., while men's occupations range from manual workers, such as drivers, soldiers, and basketball players, to careers in technology, business, and the arts (scientists, computer programmers, business people, musicians, etc.). Thus, it reflects the underrepresentation of women in the fields of science, technology, politics, and economics. This may correspond to some extent to the disparity between men and women in public participation. Among many cultures, the view is commonly maintained that boys and men specialize 'innately' in technical and scientific disciplines, while women perform well in literature and social sciences (Brugeilles and Cromer, 2009). Moreover, general science is recognized as a male-dominated subject that entails a longer period of study, quantifiable know-how, and a dedication to work that supersedes other pursuits in life, along with an indoctrinated network of the 'old boys club' (Chapple and Ziebland, 2018). Social role theory illustrates that these disparities extend in a bidirectional manner. Women are viewed as natural caretakers and are propelled into either low or unremunerated household and healthcare roles, while men are deemed more desirable candidates for positions entailing social competence (Eagly and Wood, 2016). This unevenness that exists between the female-dominated economy of care and the male-led economy of production stems from convictions surrounding 'nature' and prevails particularly in underdeveloped regions (Truong, 1997).

Although textbooks, as gender-constructed facilitators of social transformation, can showcase the competencies of female characters in occupations that have been conventionally dominated by men, they maintain traditional notions through the explicit correlation of the domains of technology, business, and politics with male characters, which further entrenches stereotypes. As the social judgments that are hidden in textbooks consistently and subliminally shape children's perspectives on gender-and this subtle impact can be exceedingly destructive-it exerts a subconscious effect on their lifelong commitments and constrains their preferences in career outlook and lifestyle. Therefore, the underlying values and societal roles contained in educational resources ideally should be considered as positive and liberal as they can be (Britton and Lumpkin, 1977).

Comparison of Chinese and Hong Kong Textbooks

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In all sample textbooks, there persists a high degree of gender stereotyping in the forms of the quality of female representation in texts and the performance of male and female characters. Nevertheless, there are some differences in the extent of stereotyping in the textbooks between regions. Chinese textbooks show a more equal representation of women in quantitative aspects than do Hong Kong textbooks. There are higher numbers of female characters, their mentions, and feminine pronouns than those of males in Chinese textbooks, whereas Hong Kong textbooks display the opposite pattern in these three areas. On the other hand, although Chinese textbooks possess a higher quantitative gender balance in several respects compared to Hong Kong's, the presented analysis also underlines the quality of representation of gender content in textbooks from both regions.

At this dimension of analysis, women in Hong Kong textbooks are featured in a more extensive range of occupational positions, including high-status and high-profile professions such as activists and scientists, which are not seen in Chinese textbooks. In the description of male and female activities, a large proportion of the content of the Hong Kong textbook, Longman Spark, is narrated from the gender-neutral perspective. Hence, the themes that develop in the textbook are not associated with quantitative analysis of the activities of men and women. It reflects a progressive step not to allocate the activities of men and women on the basis of stereotypes.

Furthermore, there exists no element in Hong Kong textbooks that situates women's roles in any activity that entails domestic responsibilities. This contradicts the findings of previous studies; e.g., Lee and Collins (2009) study denotes that household duties are dominantly conducted by females. In addition, when it comes to pronouns, while the number of male pronouns in Hong Kong textbooks exceeds the number of female pronouns, the embodiment of neutral pronouns is more frequent in the two Hong Kong textbooks than in the Chinese textbooks. This is consistent with Lee and Collins (2006) findings that in Hong Kong textbooks, authors nowadays employ a diversity of tactics to circumvent preconceptions or stereotypes of women and men when compared to previous textbooks. For instance, they incorporate the use of inclusive terms, including 'they', and 'he or she', a symmetrical application that encompasses both genders. This exemplifies the positive developments introduced by the Hong Kong textbook authors concerning the use of gender-neutral pronouns and the growing practice of gender equality.

The difference in content between the Chinese and Hong Kong textbooks may simply be attributed to the fact that the Chinese textbooks have not had their educational materials updated as recently. Both of the Chinese textbooks that are currently available are versions that were reviewed in 2013, and therefore may contain a weaker treatment of gender issues. In view of the extensive territory of Mainland China and its large population, it would be much more difficult to ensure any revised textbooks are distributed to all students who use the materials. This would be more challenging to implement than changes to Hong Kong textbooks. Furthermore, the time required for the revision of Chinese textbooks may depend on the factual circumstances, such as the introduction of new policies, which may also impact on the time involved in the work of revision.

Moreover, the results of the comparison between the two regions may well be an interesting reflection of reality when exploring the implications of textbooks with

respect to gender equality. In China, the rate of female participation in the workforce has been experiencing a downward trend from 1999 to 2019, declining from 51.2% to 47.3% (Bank, 2018). Also, the reduction in employment opportunities for women correlates with the development of China over the years. With China on the path of economic and social reform, the care responsibilities have been transferred from the state to the domestic family, and the burden of shifted caregiving has been centralised on women. In combination with China's growing transition to an ageing society, this further exacerbates the responsibility of Chinese women to support the elderly and provide care for their families. In the workplace, both the increasing gender wage gap and negative conventional stereotypes of women's work restrict women's capabilities to compete adequately in the market economy, resulting in a cumulative decline in female labour force involvement and gender inequality (Connelly et al., 2018). In addition to this, on 31 May 2021, China announced a new policy that permits all married couples to have a maximum of three children. Furthermore, the seventh census in May 2021 indicated that China's population experienced the slowest growth since the 1950s in the last decade (BBC, 2021). In response to the nation's declining growth rate, the government has also attempted to encourage women back into the family to deliver children. Xinhua, a state-owned news agency, reported that educated women are more equipped to appreciate the family concept and ought to be supported to stay at home (Wang, 2016).

In a study by Zhang and Ge (2010), they concluded that the female employment rate in Hong Kong has improved rather than reduced by comparison with China. This phenomenon can be attributed to four main considerations. There are fewer women in Hong Kong who are forced to resign from their jobs on account of their marital status, and they commonly recruit Filipino domestic workers to assist with childcare and household chores. The employment participation rate of senior women in Hong Kong tends to be elevated. Also, under the constructive effect of education, females in Hong Kong possess a supportive perspective on work. Moreover, the educational qualifications of female workers in Hong Kong as a whole attain high levels. A combination of these contextual influences may have contributed to the distinct common activities and routines associated with women in Chinese and Hong Kong textbooks, with Chinese textbooks continuing to revert to women's ordinary activities in domestic settings, and to the wider range of social roles engaged in by women in Hong Kong textbooks. In addition, the more frequent occurrence of the gender-neutral pronoun 'they' in Hong Kong textbooks may be explained partially by the fact that Hong Kong textbooks are more up-to-date than Chinese textbooks. Therefore, Hong Kong textbooks are more prone to accommodate 'they' as a gender-neutral pronoun or to denote people who are non-binary in their gender identity. On the other hand, since Hong Kong has witnessed 156 years of British colonial governance, it provides a societal environment that incorporates both Eastern and Western cultural impacts (Yeo and Chu, 2017). In Yeo and Chu's study, they discovered that the Hong Kong community remains relatively friendly in terms of the public's social acceptance of homosexuality. On the whole, their views are also associated with their age, religious beliefs, and educational achievement.

Meanwhile, in Mainland China, a cultural perception of homosexuality is not considered inherently incorrect or culpable, and it is neither embraced nor admitted into existing social standards. This is evidenced by the absence of homosexuality-related content in the press, publishing, and the censorship of television and films.

Homosexuality is considered inappropriate content for the ordinary population, although it is not explicitly outlawed in Chinese society (Wang et al., 2019). In Chinese culture, the Confucian philosophy of filial piety has been promoted to nurture offspring and perpetuate the family line. A man needs to get married and generate a male descendant for the continuance of the family lineage. Therefore, in traditional kinship-structured communities in China, homosexuality is not recognised as a stand-alone identity or as a generalised individuality (Chou, 2001). This perhaps can also provide an explanation for the more significant attention devoted to the use of the gender-neutral pronoun 'they' in Hong Kong textbooks when compared to Chinese textbooks.

6. Limitation

For future research, consideration might be provided to (a) replicating this study utilising a more wide-ranging set of textbooks or through other subject disciplines to validate the generalisability of the outcome (b) investigating gender stereotypes presented on the Internet or in video games (c) collecting data from interviewing teachers to obtain insights into teachers' perceptions of how gender stereotypes can be managed in textbooks. Data may also be collected to explore how the unequal school materials impact students' growth, professional options and future pathways.

7. Conclusion

The findings of this paper could provide significant implications for gender-related policies in the global context, and especially for the Asian region. Sustainable Development Goal 5 of the United Nations targets the attainment of gender equality and the full empowerment of females of all ages by 2030 (UNDP, 2019). The Organisation for Economic Co-operation and Development and the World Bank view as one of their foremost imperatives to reduce the gender gap (OECD, 2018). The results of this study hence are intended to uncover the limitations of textbooks in contributing to gender equality and to explore possible adjustments to textbook content and gender representation for the empowerment of women.

This paper underlines the limited progress achieved in gender equality and representation in textbooks in mainland China and Hong Kong, and concludes that while improvements have been attained, they are still not sufficient in keeping pace with contemporary developments in social contexts. There is still an incomplete path that needs to be covered to support the younger generation in building awareness of equality through textbooks. It is essential to consider the equivalence of male and female characters in textbooks, to employ more generic pronouns as an alternative to male and female pronouns, and to avoid stereotypes of social roles and the common activities and routines they engage in.

As a result, it is necessary to further revise textbooks that contain obsolete illustrations by increasing the proportion of experts without the underlying stereotypes on the textbook author committees, with the intention of reflecting real-world changes and bringing students up to date with ongoing developments. This paper therefore contains a recommendation for the establishment of a set of formal ethical guidelines for editorial practitioners on gender equality issues in both Mainland China and Hong Kong, which would incorporate guidance on the adoption of inclusive terminology

and an unbiased consideration of gender. Moreover, there should be further training for teachers. Through an innovative and inexpensive approach, they should be equipped with more gender-sensitivity training, with a view to empowering them to perform a more constructive role in gender education and provide a more critical approach to the content of textbooks. Hence, the younger generation can be encouraged to break down gender stereotypes, move beyond them, and maximise their potential for the betterment of the community.

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