Summerfest 2012 on “Making Communication Science Work”

cum

Annual Presentation of B.Sc. (Speech & Hearing Sciences)
Fourth Year Dissertations

26th May 2012

LTI, Prince Philip Dental Hospital
34 Hospital Road, Hong Kong

Co-organizers

EMERGING STRATEGIC RESEARCH THEME (eSRT): COMMUNICATION DISORDERS
THE UNIVERSITY OF HONG KONG

DIVISION OF SPEECH AND HEARING SCIENCES
FACULTY OF EDUCATION

THE CENTRE FOR
COMMUNICATION DISORDERS
Contents

Programme at a Glance 3

Abstracts

Plenary 1 4

Plenary 2 5-13

Plenary 3 14-26

Plenary 4 27
## Programme at a Glance

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>08.30 – 08.45</td>
<td>Registration</td>
<td></td>
</tr>
<tr>
<td>08.45 – 09.00</td>
<td>Introduction</td>
<td>Brendan Weekes (Professor and Chair, Division of Speech and Hearing Sciences, The University of Hong Kong)</td>
</tr>
</tbody>
</table>

### Plenary 1
09.00 – 10.00

“The ICF and evidence-based research: A partnership for scientific practice” by Travis T. Threats (Professor and Chair, Department of Communication Sciences and Disorders, Saint Louis University)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.00 – 10.15</td>
<td>Break</td>
<td></td>
</tr>
</tbody>
</table>

### Plenary 2
10.15 – 12.45

Annual presentation of B.Sc. (Speech & Hearing Sciences) fourth year dissertations: Oral presentation

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>12.45 – 14.00</td>
<td>Luncheon (Foyer outside LT I)</td>
<td></td>
</tr>
</tbody>
</table>

### Plenary 3
14.00 – 15.45

Annual presentation of B.Sc. (Speech & Hearing Sciences) fourth year dissertations: Poster presentation

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.45 – 16.00</td>
<td>Break</td>
<td></td>
</tr>
</tbody>
</table>

### Plenary 4
16.00 – 17.00

“Evidence-based interventions for reading and language impairments” by Maggie Snowling (Professor and Chair, Department of Psychology, The University of York)

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.00 – 17.15</td>
<td>Awards of Best Presentation Awards for B.Sc. students</td>
<td>Cake-cutting ceremony</td>
</tr>
</tbody>
</table>
Abstracts

**Plenary 1**

The ICF and evidence-based research: A partnership for scientific practice

Travis T. Threats, Ph.D.
Professor and Chair,
Department of Communication Sciences and Disorders
Saint Louis University

What does it mean to say that a treatment has “worked”? Does it simply mean to move a patient from Point A to Point B? Evidence Based Practice (EBP) is considered the standard by which clinical practice is judged. It refers to providing assessment and intervention via a combination of best available research, clinical expertise, and recognition of patient preferences. EBP principles are crucial to understanding how we should decide or analyze data for determining patient outcomes. However, it does not attempt to answer what we should be studying or even what is a desirable end goal. The World Health Organization’s *International Classification of Functioning, Disability, and Health (ICF)* provides a biopsychosocial framework for clinical practice and research that is becoming increasingly used by many professions including communication disorders, occupational therapy, physical therapy, social work, recreational therapy, rehabilitation nursing, psychology, and medicine. The use of the ICF can help provide both a philosophical approach and an operationally defined classification system for understanding functional health to give evidence based practice a focus and method of data collection. The basics of EBP and the ICF will be discussed, including their possible symbiotic relationship to improve patient relevant outcomes.

*About the speaker:*
Travis T. Threats, Ph.D. is Professor and Chair of the Department of Communication Sciences and Disorders at Saint Louis University, where he teaches courses in neurogenic communication disorders. He has written and presented extensively concerning his three main scholarly interests: the ICF, evidence based practice, and rehabilitation health care ethics. He worked on the development of the World Health Organization’s (WHO) *International Classification of Functioning, Disability, and Health (ICF)*. In addition, he was a member of the International Task Force on Mental Health, and Addictive, Behavioral, Cognitive, and Developmental Aspects of the ICF. He has served as American Speech-Language-Hearing Association (ASHA) representative liaison to the WHO since 1999. He currently is the Senior Consultant for the WHO and the American Psychological Association for the *Procedural Manual and Guide for the Standardized Application of the ICF: A Manual for Health Professionals*, which is a clinical manual to using the ICF. Dr. Threats has been an invited keynote speaker in Chile, Greece, Slovenia, Australia, Canada, and New Zealand. He was a compensated contributor for the chapter entitled “Rehabilitation” in the World Health Organization’s 2011 *World Report on Disability*. He is an ASHA Fellow.
**Plenary 2**

Annual presentation of B.Sc. (Speech & Hearing Sciences) fourth year dissertations: Oral presentation

*List of Oral Presentations*

<table>
<thead>
<tr>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>The treatment effect of acupuncture to dysphagia</td>
<td>Cheung Ho Yuen</td>
</tr>
<tr>
<td>Vocal characteristics of English and Mandarin produced by Mandarin-</td>
<td>Chong Yee Ying</td>
</tr>
<tr>
<td>English and English-Mandarin bilingual speakers - A long-term average</td>
<td>Sibie</td>
</tr>
<tr>
<td>spectral analysis</td>
<td></td>
</tr>
<tr>
<td>Effect of acupuncture on the healing of benign vocal fold lesions</td>
<td>Ho Long Ka Gladys</td>
</tr>
<tr>
<td>Are compound radicals independently processed in Chinese character</td>
<td>Ip Ching Man Ida</td>
</tr>
<tr>
<td>recognition?</td>
<td></td>
</tr>
<tr>
<td>A systematic quantification of gesture employment in normal Cantonese</td>
<td>Kwan Ching Yin</td>
</tr>
<tr>
<td>speakers: A multi-directional analysis of forms and functions</td>
<td>Connie</td>
</tr>
<tr>
<td>Impaired word retrieval in aphasia: A trilingual case study</td>
<td>Lam Sze Yan Karen</td>
</tr>
<tr>
<td>Colored high-speed quantitative laryngoscopic analysis of fatigued</td>
<td>Lee Hau Kit Eddie</td>
</tr>
<tr>
<td>voice</td>
<td></td>
</tr>
<tr>
<td>Perception of linguistic pitch in Cantonese-English bilingual</td>
<td>Lee Mei Ling Meg</td>
</tr>
<tr>
<td>speakers</td>
<td></td>
</tr>
<tr>
<td>Cross-linguistic and cross-scriptal differences in auditory and visual</td>
<td>Lee Tsz Chung Cedric</td>
</tr>
<tr>
<td>attentional shifts: A comparison between native Mandarin and English</td>
<td></td>
</tr>
<tr>
<td>speakers</td>
<td></td>
</tr>
<tr>
<td>Cross-linguistic and cross-scriptal differences in auditory and visual</td>
<td>Li Wai Lam Anita</td>
</tr>
<tr>
<td>attentional shifts: comparison between native Cantonese and English</td>
<td></td>
</tr>
<tr>
<td>speakers</td>
<td></td>
</tr>
<tr>
<td>Nursing home care workers’ knowledge in dysphagia management:</td>
<td>Lok Yin Wing Loklok</td>
</tr>
<tr>
<td>Effectiveness of a training programme</td>
<td></td>
</tr>
<tr>
<td>Psychometrics of a swallowing-related quality of life questionnaire:</td>
<td>Ng Yau Ki Samuel</td>
</tr>
<tr>
<td>Swallowing activity and participation profile</td>
<td></td>
</tr>
<tr>
<td>Is prenatal maternal mental problem associated with offspring’s</td>
<td>Tong Mei Yan Mona</td>
</tr>
<tr>
<td>language skills at two years old?</td>
<td></td>
</tr>
<tr>
<td>Effect of prenatal mental health problems on early speech sound</td>
<td>Wong Kei Yan Gillian</td>
</tr>
<tr>
<td>acquisition</td>
<td></td>
</tr>
<tr>
<td>Exploring the role of radicals in novel character learning among</td>
<td>Yip Joanna Hew-yan</td>
</tr>
<tr>
<td>Chinese as Foreign Language Learners</td>
<td></td>
</tr>
</tbody>
</table>
Oral Abstracts

10.15-10.25
The Treatment Effect of Acupuncture to Dysphagia
Cheung Ho Yuen

The study systematically reviews currently available studies which investigate the treatment effect of acupuncture in treating dysphagia. The review also gives a general picture of the characteristics of currently available studies conducted, so as to suggest directions for future clinical studies of this alternative treatment method for treating dysphagia. Sixty published research papers in Simplified Chinese were collected. Eighteen of the collected papers were analyzed. The result of meta-analysis showed positive treatment effect of acupuncture to dysphagia. Future research projects should focus on 1) Non-Chinese population 2) Patients with dysphagia originated from causes other than neurological damage, for example, degenerative diseases 3) Using instrumental swallowing assessment as parameter of outcome measure. Potential bias and limitations of the meta-analysis were discussed.

10.25-10.35
Vocal characteristics of English and Mandarin produced by Mandarin-English and English-Mandarin bilingual speakers - A long-term average spectral analysis
Chong Yee Ying Sibie

The present study aims to examine the possible acoustical differences between languages (English and Mandarin) and ethnicities (Chinese and American). Sixteen Chinese (8 males and 8 females) and fourteen American bilingual adults were recruited (8 males and 6 females) and instructed to read one Mandarin and one English passage. Fundamental frequency (F0), jitter, shimmer, and parameters extracted from long-term average spectral analysis, including first spectral peak (FSP), mean spectral energy (MSE), and spectral tilt (ST) were measured from the speech samples using Praat. Results indicated acoustical differences between English and Mandarin, and between Chinese and American speakers. However, the language effect and race effect on voice quality interacted with each other. The findings imply that both race/ethnicity and language used by speakers should be considered when comparing to the normative data in voice therapy.
10.35-10.45
Effect of acupuncture on the healing of benign vocal fold lesions
Ho Long Ka Gladys

Acupuncture treatment has been an active field of research in Western Medicine for many years. This study aims to study the healing effect of acupuncture treatment on vocal fold lesions. Fifty-five subjects that were randomized into three groups, genuine, sham and control group underwent 12-weekly acupuncture treatments, and data from the assessment at pre-treatment, post-treatment and 1 month post-treatment were analyzed. The genuine group received acupuncture treatment on nine acupuncture points. The sham group received the same acupuncture treatment except with blunt needles. Five visual-perceptual judgment of stroboscopic parameters were used to measure the recovery of the vocal folds. Results were inconclusive in terms of whether acupuncture treatment was effective in healing the vocal folds.

10.45-10.55
Are compound radicals independently processed in Chinese character recognition?
Ip Ching Man Ida

A masked priming lexical decision task was conducted to investigate the presence of compound radical representations as an independent processing unit in Chinese character recognition. Prime type (simple radical prime and compound radical prime) and prime duration (48 ms, 64 ms, and 80 ms) were manipulated. Thirty-five native Cantonese-speaking undergraduates and fresh graduates participated in the study. Participants were asked to determine whether the character presented was a real or pseudo-character using a response box. Results shown that increasing the prime duration of related simple radical primes did not lead to any difference of response time; thus the expected interaction between prime type and prime duration was not found. These findings suggested that compound radicals were not represented during Chinese character recognition, consistent with the conclusions of Taft and Zhu (1997) and Tam (2011).
10.55-11.05
A systematic quantification of gesture employment in normal Cantonese speakers: A multi-directional analysis of forms and functions
Kwan Ching Yin Connie

This study describes the use of a gesture classification framework that can independently code and quantify forms and functions of non-verbal behaviors employed during spontaneous speech tasks. Normative data from the AphasiaBank Project, including sequential description, story-telling and monologue of one hundred and nineteen native Cantonese speakers, was used for analysis. Gestures employed during the linguistic tasks were annotated for its form and functions separately. Results revealed that one-third of the normal speakers did not gesture throughout the tasks and 84% of the gestures were coded as non-specific in nature. For the remaining content-carrying gestures, they mainly functioned as assisting listeners to decode speech content. Lexical diversity, age and nature of language tasks were related to frequency of gestural production. It is hoped that by examining the use of gesture among normal speakers, better understanding on cognitive, linguistic and interactive process of human communication will be achieved.

11.05-11.15
Impaired word retrieval in aphasia: A trilingual case study
Lam Sze Yan Karen

Numerous studies have reported multilingual speakers with aphasia in linguistically similar Indo-European languages. This study is the first to document the performance of a trilingual Cantonese-English-Mandarin aphasic speaker on cognitive and naming tasks. The primary hypothesis was that naming performance would vary according to linguistic similarity leading to the prediction that naming performance in Cantonese and Mandarin would be more similar than performance in English. Contrary to these expectations, the results showed patterns of naming in constrained and unconstrained contexts that were not statistically different across languages. However, dissociations were observed in different modalities between linguistically similar and dissimilar languages. Code switching patterns also varied in the two elicitation contexts. Results suggest that language dominance has a greater impact than linguistic similarity between languages in the patterns of aphasia that might be observed in multilingual Cantonese-English-Mandarin speakers.
11.15-11.25
Colored high-speed quantitative laryngoscopic analysis of fatigued voice
Lee Hau Kit Eddie

Background The universal definition for vocal fatigue remains to be a challenge to researchers. With the advance in technology, intra-cycle images of vocal fold vibration can be obtained by using high-speed laryngoscopy. This provides information that cannot be obtained from other visualization methods or acoustic measurements. The potential in using such technology in analyzing vocal fold vibration pattern should be testified.

Objectives This study examined the physiological change in vocal fold in fatigued state. Quantified analysis was done on high-speed laryngoscopic images by using the High-speed Video Processing (HSVP) program. Color brightness of the vocal folds and the glottal length to width ratio index were measured.

Methods Ten males and ten females aged from 19 to 26 years with normal voice were recruited to participate in a prolonged singing task in order to induce vocal fatigue. High-speed laryngoscopic images were taken before and after the singing task. Images of prolonged /i/ phonation were analyzed using the color HSVP program.

Results There is no significant change in color brightness of the vocal folds after the singing task. However, there was a significant reduction in glottal length to width ratio index after the singing task. It indicated that the glottis became shorter and wider in the open phase of fatigued vocal folds. It was hypothesized to be the compensatory behaviors adapted by the participants in vocally fatigued state.

Conclusion There is potential in using high-speed laryngoscopy, together with the quantitative analysis program, for the detection of vocal fold fatigue.

11.25-11.35
Perception of linguistic pitch in Cantonese-English bilingual speakers
Lee Mei Ling Meg

This study investigated the perception of linguistic pitch in Cantonese-English bilingual speakers. Two age groups of bilingual speakers (age 10-13 and age 20-23) were recruited and attended the experiment which included three sessions: Cantonese lexical tone perception test, English lexical stress perception test, the mixed mode test of lexical tone and lexical stress. The stimuli were fifty-five CVCV non-words with fifteen different tone contrasts in lexical tone test, and with initial stressed or final stressed in lexical stress test. The results showed that adults performed significantly better than the children in both lexical tone and lexical stress perception. Children had similar performance in tone and stress perception but adults performed better in stress perception than tone perception. The tone contrasts of mid level-low level, and high rising-low rising were the most difficult to discriminate for both children and adults. Findings suggest that bilingual speakers used the same perception strategy in perceiving linguistic pitch of lexical stress and lexical tone and the language experience still affected and improved the suprasegmental acquisition after age of 10-13.
11.35-11.45
Cross-linguistic and cross-scriptal differences in auditory and visual attentional shifts: A comparison between native Mandarin and English speakers
Lee Tsz Chung Cedric
Lallier (2010) proposed that our attentional shifting speed could be shaped by our native language. In our current study we tested this hypothesis by comparing the attentional shift of native English and native Mandarin speakers using the stream segregation paradigm. English and Mandarin are known to be of two contrastive language systems. The rhythmic and scriptal differences between Mandarin and English are discussed. Despite the differences, results revealed no significant difference between the two groups. We proposed that language difference might not have a direct effect on non-language tasks. Some ambiguities in verbal and written domains of the two languages were also discussed.

11.45-11.55
Cross-linguistic and cross-scriptal differences in auditory and visual attentional shifts: comparison between native Cantonese and English speakers
Li Wai Lam Anita
Lallier and colleagues (2010b) put forward a new hypothesis proposing the role of temporal interval between salient units in ones native language in shaping the speed of attentional shift. The present study investigated the applicability of this hypothesis to Cantonese speakers and English speakers by comparing their speed of attentional shift in auditory and visual stream segregation tasks. Contrary to Lallier et al.’s hypothesis, results of stepwise regressions revealed no group difference in the segregation thresholds in both modalities after controlling the participants’ mean reaction time and alerting score in the Flanker task, suggesting that the speed of attentional shift is language-independent. Additionally, this study established the normative data of attentional shift in the typical Cantonese-speaking adults. This information can serve as a basis for evaluating the relevance of “sluggish attentional shift” (SAS) to developmental dyslexia in Chinese with a logographic script, which may provide clinical insights to its diagnosis.
11.55-12.05  
**Nursing home care workers’ knowledge in dysphagia management: Effectiveness of a training programme**  
Lok Yin Wing Loklok  

This study explores the knowledge in dysphagia management of carers including health workers (HWs), care workers (CWs) and care worker assistants (CWAs) in Hong Kong nursing homes. It also examines the effectiveness of a training programme on improving CWs knowledge in dysphagia management. In Phase I, 58 carers recruited from 5 local nursing homes completed questionnaire about knowledge of dysphagia management and 14 carers were observed for their feeding behaviors. In Phase II, a quasi-experimental design was employed to study of the effectiveness of a training programme. Insufficient knowledge and undesirable feeding behaviors in dysphagia management are identified in carers. The training programme is suggested to be effective in increasing carers’ knowledge in dysphagia management. Supervision of feeding is indicated to have influences on the feeding behaviors. Reasons of carers holding insufficient knowledge of dysphagia management and performing improper feeding behaviors are discussed. Recommendations of how to improve them are provided.

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12.05-12.15  
**Psychometrics of a swallowing-related quality of life questionnaire: Swallowing activity and participation profile**  
Ng Yau Ki Samuel  

The current study aimed to investigate the psychometrics of a recently developed self-reported questionnaire for swallowing related quality-of-life assessment, the Swallowing Activity and Participation Profile. This questionnaire adopted ICF framework and one consistent scale throughout the whole questionnaire to give convenience to clinicians and patients. Twenty-seven participants, including 14 non-swallowing disordered and 13 swallowing disordered, were participated in the study for the validation of the questionnaire. The results demonstrated good construct validity and convergent validity of the questionnaire. The finding suggested the questionnaire can contribute the assessment of swallowing related quality of life in geriatric populations.
12.15-12.25
Is prenatal maternal mental problem associated with offspring’s language skills at two years old?
Tong Mei Yan Mona

The current study examined the impact of prenatal maternal anxiety on toddlers’ language development at two years old. Maternal anxiety status of 48, 36 and 32 pregnant women was evaluated using a validated questionnaire during pregnancy at the first, second and third trimesters respectively. Mothers were grouped into anxious and non-anxious groups according to the clinical cut-off. Two year postpartum anxiety level of all the mothers was obtained as a covariate. Children’s language abilities were assessed using the Cantonese version of the MacArthur Communicative Development Inventory (CCDI). Results showed that there was no significant difference between the language scores reported in the prenatally “anxious” and “non-anxious” groups in all three trimesters after controlling for the 2-year postpartum anxiety level. The results implied that effect of prenatal maternal stress is not associated with children’s language functioning. Language acquisition is a complex process influenced by multiple factors. This study highlighted some methodological considerations when conducting similar kind of study.

12.25-12.35
Effect of prenatal mental health problems on early speech sound acquisition
Wong Kei Yan Gillian

The study investigated prospectively the effect of prenatal mental health problems in terms of anxiety and depression on speech sound acquisition in 26 mother-child dyads. Prenatal anxiety and depression were assessed using validated screening tools during late pregnancy. Speech sound production ability was assessed in terms of the number of atypical phonological patterns produced in a standardized speech assessment when the children reached the age of 2. Multiple regression analyses illustrated that prenatal depression uniquely explained 30.8% of the variance in speech sound acquisition after controlling for the child’s sex and postnatal maternal depression level. However, the regression model for the anxiety measures was not significant. In conclusion, clinical level of prenatal depression was significantly associated with more atypical phonological patterns. The current findings contribute to the understanding of the etiology of functional speech sound disorders (SSD). At the clinical level, prenatal depression may be taken as a risk factor for SSD and the importance of enhancing mental health in pregnant women with depression is empathized. Early phonological assessment and intervention of children exposed to depression during late pregnancy are also recommended.
12.35-12.45
Exploring the role of radicals in novel character learning among Chinese as Foreign Language Learners
Yip Joanna Hew-yan

This study investigated the role of radicals in novel character processing among 93 Chinese as foreign language (CFL) learners. The CFL learners represented 28 languages spoken nowadays completed a picture-mapping task with three conditions: no cue, phonetic cue and semantic cue provided conditions. They could use semantic, phonetic and positional strategies to learn novel characters while positional strategy was dominating across conditions. Semantic radical was found to be a unique predictor of Chinese character recognition. The study supports that Chinese processing mechanism underlying character learning is uniquely shaped by the language features and would not be affected by native languages and Chinese proficiency. This implies that Chinese character learning would not be challenging if one understands the language features thoroughly.

Keywords: Chinese as foreign language learners, radicals, language features, cognitive mechanism.
Plenary 3
Annual presentation of B.Sc. (Speech & Hearing Sciences) Fourth-year dissertations: Poster presentation

List of Poster Presentations

<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Validation of a tongue pressure measurement tool as a screening tool of oropharyngeal dysphagia in Hong Kong geriatric population</td>
<td>Chan Doris</td>
</tr>
<tr>
<td>02</td>
<td>Vocal tract dimensions and vocal fold vibratory characteristics of professional singers of different singing voice types</td>
<td>Chan Ka U Edith</td>
</tr>
<tr>
<td>03</td>
<td>Examining the neoglottal vibratory pattern of Cantonese tracheoesophageal speakers - A preliminary aerodynamic study using inverse-filtering</td>
<td>Chan Ming Wa Joanna</td>
</tr>
<tr>
<td>04</td>
<td>Quantification of vocal tract configuration of laryngectomees by acoustic reflection technology (ART)</td>
<td>Chan Venus</td>
</tr>
<tr>
<td>05</td>
<td>From radicals to characters: the role of positional, phonetic, and semantic cues in children’s novel character learning</td>
<td>Chan Yim In Yen</td>
</tr>
<tr>
<td>06</td>
<td>Phonological accuracy and phonological patterns in Cantonese-English bilingual children</td>
<td>Cheng Ting Kwo April</td>
</tr>
<tr>
<td>07</td>
<td>Changes of vocal function in teachers during their career life</td>
<td>Cheung Man Lee Millie</td>
</tr>
<tr>
<td>08</td>
<td>Acoustic and electroglottographic (EGG) characteristics of tracheoesophageal speech of Cantonese</td>
<td>Chiu Ka Lai Nana</td>
</tr>
<tr>
<td>09</td>
<td>Neural correlates of spatial location mapping on the Simon effect in Mandarin speakers</td>
<td>Chuang Ching Man Nicole</td>
</tr>
<tr>
<td>10</td>
<td>Relationship between private speech and performance in divergent problem solving task in preschool children</td>
<td>Ho Hin Yui Alex</td>
</tr>
<tr>
<td>11</td>
<td>Effectiveness of laser acupuncture for hyperfunctional dysphonia - A treatment placebo group study</td>
<td>Ho Ka Lun Masato</td>
</tr>
<tr>
<td>No.</td>
<td>Title</td>
<td>Presenter</td>
</tr>
<tr>
<td>-----</td>
<td>----------------------------------------------------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>12</td>
<td>Fricatives, affricates, and vowels in Cantonese-speaking children with cochlear implants: an acoustic study</td>
<td>Hui Chun Kit Gibson</td>
</tr>
<tr>
<td>13</td>
<td>The relationship between affective word ratings and lexico-semantic properties in Chinese words rated by Mandarin speakers</td>
<td>Kwok Cherry Ng</td>
</tr>
<tr>
<td>14</td>
<td>The relationship between affective word ratings and lexico-semantic properties in Cantonese actions and objects</td>
<td>Lao Wing Tak Alice</td>
</tr>
<tr>
<td>15</td>
<td>Generating inferences in oral text comprehension: A study on preschool children</td>
<td>Law Wing Chung Beatrice</td>
</tr>
<tr>
<td>16</td>
<td>Play skills development: Impacts of prenatal and postpartum maternal stress</td>
<td>Lee Sui Ling Cherry</td>
</tr>
<tr>
<td>17</td>
<td>Neural correlates of spatial location mapping on the Simon Effect</td>
<td>Lo Kusmawati Tracy</td>
</tr>
<tr>
<td>18</td>
<td>Sharing stories with preschool children: Do parents modify their utterances?</td>
<td>Ng Ching Yan Venus</td>
</tr>
<tr>
<td>19</td>
<td>Influence of antenatal depression on offspring’s communicative intention in toddler years</td>
<td>Siu Jy Lam Eunice</td>
</tr>
<tr>
<td>20</td>
<td>Relationship between private speech and performance in social problem solving task in preschool children</td>
<td>Tsang Yuen Ting Edith</td>
</tr>
<tr>
<td>21</td>
<td>Phonological awareness abilities of Cantonese-speaking children with Down syndrome</td>
<td>Yau Sze Mei Tracy</td>
</tr>
<tr>
<td>22</td>
<td>Speech production accuracy and variability in children with Down’s syndrome</td>
<td>Yeung Sin Ting Jenny</td>
</tr>
</tbody>
</table>
Poster Abstracts

01 Validation of a tongue pressure measurement tool as a screening tool of oropharyngeal dysphagia in Hong Kong geriatric population
Chan Doris

This study aimed at validating Iowa Oral Performance Instrument (IOPI), a tongue pressure measurement tool, as a screening tool of oropharyngeal dysphagia in Hong Kong geriatric population. 8 dysphagic and 26 non-dysphagic elderly who aged 60 or above were recruited for oral motor examinations, trial swallow tests and the measurements of tongue peak pressure with IOPI. The results showed a significant difference in the tongue peak pressure between dysphagic and non-dysphagic group, a high inter- and intra-rater reliability of the measurement and a strong correlation between tongue peak pressure and the rating of oral motor examination. The result supported that the measurement of tongue peak pressure is a valid and reliable screening method of oropharyngeal dysphagia.

02 Vocal tract dimensions and vocal fold vibratory characteristics of professional singers of different singing voice types
Chan Ka U Edith

This study aimed to examine the relationship between different singing voice types and their vocal fold vibratory characteristics and vocal tract dimensions. A total of 19 tenors, 10 baritones, 30 sopranos, and 4 mezzo-sopranos participated in the study. Electroglottography (EGG) was used to measure the vocal fold vibratory characteristics, based on which parameters including open quotient (Oq) and fundamental frequency (F0) were derived. During the experiment, the participants sang the song “Happy Birthday” with constant loudness level and at the most comfortable pitch level. A pharyngometer was used to measure singers’ vocal tract dimensions. Results showed that tenors had significantly higher Oq/F0 gradient than baritones in chest and head registers, while sopranos had generally higher Oq/F0 gradient than mezzo-sopranos in chest and head registers. Regarding vocal tract dimensions, sopranos generally exhibited greater vocal tract length and volume values than mezzo-sopranos. The present study provides insights to applying both vocal fold vibratory characteristics and vocal tract dimensions in voice classification for male and female singers.
03
Examining the neoglottal vibratory pattern of Cantonese tracheoesophageal speakers - A preliminary aerodynamic study using inverse-filtering
Chan Ming Wa Joanna

The present study examined the neoglottal vibratory pattern of Cantonese tracheoesophageal (TE) speakers by inverse-filtering the airflow signals obtained from eight superior TE speakers during phonation. The syllable /papapa/ was used for obtaining airflow signals, and the acoustic signals of the vowels /i, æ, a, o, u/ were also obtained. Aerodynamic parameters obtained were compared between TE and laryngeal speakers. Results revealed that TE speakers exhibited comparable open quotient and airflow volume values but significantly smaller speed quotient values than laryngeal speakers. The marked difference in inverse-filtered airflow signals between TE and laryngeal speech of Cantonese is believed to be related to the use of different sounding mechanisms between the two speaking methods, and the unique vibratory nature of the neoglottis in TE speech.

04
Quantification of vocal tract configuration of laryngectomees by acoustic reflection technology (ART)
Chan Venus

This study compared the vocal tract configuration, including the length and volume, of alaryngeal and laryngeal speakers. Thirty alaryngeal speakers and 30 laryngeal speakers were recruited for the study. Pharyngometry, which is an acoustic reflection technology (ART), was used to measure the vocal tract parameters of the participants. Results showed that there was no significant difference in the length and volume of the vocal tract of the alaryngeal and laryngeal speakers. The finding suggested that the difference in the formant frequency during vowel production by alaryngeal and laryngeal speakers may be due to factors other than vocal tract configuration. The finding also suggested that the independence of the source and the filter (Fant, 1960; Pickett, 1999) may not be applicable to alaryngeal speakers.
05
From radicals to characters: the role of positional, phonetic, and semantic cues in children’s novel character learning
Chan Yim In Yen

This study sought to examine the nature of the relation between radicals and characters by testing children’s strategy used in coding novel characters. The semantic, phonetic and positional information were manipulated in a picture-mapping test. A total of 94 Chinese children: 32 first-graders, 32 third-graders and 30 fourth-graders from Hong Kong mainstream primary schools were invited to complete this test under three different conditions: (1) when no cue was provided, (2) when the phonetic cue was provided, and (3) when the semantic cue was provided. The results showed that children at all grades predominantly used positional strategy (structural knowledge) when no cue was provided. On the other hand, when cues were provided, children increased the use of phonetic and semantic strategies (functional knowledge). The findings suggested that there is a tendency of using holistic processing more under implicit conditions and analytical processing more under explicit conditions. To conclude, positional cues play a larger role than semantic and phonetic cues in Children’s novel character learning due to early development of the structural knowledge and high stability of the positional cue.
Keywords: Chinese character recognition, orthographic processing, structural radical knowledge, functional radical knowledge, developmental study

06
Phonological accuracy and phonological patterns in Cantonese-English bilingual children
Cheng Ting Kwo April

This paper aimed to describe the phonological systems of Cantonese and English in bilingual children in Hong Kong, and to determine the presence and nature of interaction between the two languages. A total of 48 children aged between 4;00 and 4;11 were recruited, with 24 Cantonese-English successive bilinguals from five local international kindergartens and 24 Cantonese monolingual children from two local kindergartens. The Cantonese Segmental Phonology Test (CSPT, So, 1993) and Goldman Fristoe Test of Articulation-2 (Goldman & Fristoe, 2000) were administered. Cantonese phoneme accuracies and phonological processes were compared between the two groups to investigate on any possible interference effect. Results indicated no interference effect of learning English on Cantonese phoneme accuracies, but transfer was evident in the phonological processes in the bilingual children when compared to their monolingual counterparts.
07

Changes of vocal function in teachers during their career life
Cheung Man Lee Millie

This project aimed 1) to investigate the change of vocal function in teachers over time with voice intervention provided and 2) to compare the self-perceived quality of life (QoL) between the practicing teachers and student teachers. The project consisted of two prospective studies, in which practicing teachers (study 1) and student teachers (study 2) were recruited as subjects respectively. In study 1, the subjects were randomly assigned to two groups: voice training group and no-training group. In study 2, the subjects were randomly assigned to three groups: vocal hygiene (VH) group, vocal hygiene and voicing technique training (VHT) group, and no-training group. Participants in the intervention groups were invited to attend the corresponding training workshops respectively. In both studies, results demonstrated no significant positive change of vocal function in subjects after intervention provided. Also, no significant difference was found between the practicing teachers and student teachers on the self-perceived QoL. These findings did not support the hypotheses that 1) interventions with vocal hygiene education would lead to significant positive change in vocal function, and 2) the student teachers would have a better self-perceived QoL than the practicing teachers.

08

Acoustic and electroglottographic (EGG) characteristics of tracheoesophageal speech of Cantonese
Chiu Ka Lai Nana

This study investigated the acoustic and electroglottographic (EGG) characteristics of tracheoesophageal (TE) speech of Cantonese. Seven TE speakers and seven aged-matched laryngeal (NL) speakers produced sustained vowel phonation and passage reading. Both acoustic and EGG signals were recorded and analyzed using software programs Praat and Voce Vista. Results indicated that there was a significantly lower fundamental frequency (F0) for TE than NL speakers in passage reading. Significantly higher jitter, shimmer and closed quotient (CQ), and lower harmonic-to-noise ratio (H/N) values were associated with TE speech in both sustained vowel phonation and passage reading. Higher formant frequencies in sustained /i/ phonation were found for TE speakers. The findings appear to explain the perceptually hoarse, breathy and low-pitch voice of TE speech. Results were discussed in terms of higher position, greater tissue density, slower movement during closing phase and aperiodic vibration of neoglottis of TE speakers than the vocal folds of NL speakers.
09

**Neural correlates of spatial location mapping on the Simon effect in Mandarin speakers**
Chuang Ching Man Nicole

The aim of study is to investigate the neural mechanisms by which experience influences cognitive control in native Chinese speakers using functional Magnetic Resonance Imaging (fMRI) in a Simon location task. Results showed brain regions involved in motor control (precentral and postcentral gyri) were less activated after practice. In contrast, brain regions involved in selection of conflict response (left inferior frontal gyrus), attentional control (inferior parietal lobule) and working memory (inferior frontal gyrus, superior temporal gyrus and insula lobe) were more activated after practice. The results suggest that learning an incompatible spatial location mapping during practice increased demand for response inhibition. Furthermore, the data reveal the involvement of verbal working memory during motor learning in the Simon spatial location mapping task in Chinese speakers.

**Keywords:** Simon effect, functional Magnetic Resonance Imaging, working memory, motor learning

10

**Relationship between private speech and performance in divergent problem solving task in preschool children**
Ho Hin Yui Alex

This was the preliminary study aiming to find out the relationship between private speech and task performance in a divergent problem-solving task and confirm with the previous studies about the age-related developmental trend in private speech. 43 children aged between three to five years old were recruited to participate in a divergent problem-solving task. The private speech of the participants was videotaped during the process of devising solutions. It was then transcribed, categorized and analyzed. Results showed a positive correlation between private speech with task relevance and the degree of sophistication of solution. Also, the age-related developmental trend in private speech was partially consistent with previous studies. Finally, implications of this study for early childhood educators and parents were discussed.
11 **Effectiveness of laser acupuncture for hyperfunctional dysphonia - A treatment placebo group study**
Ho Ka Lun Masato

Laser acupuncture was found to be effective in treating various diseases (Radmayr et al, 2001 and Gottschling et al, 2008). However, there is no study investigating effectiveness of laser acupuncture in treating hyperfunctional dysphonia. The objective of present study was to investigate the effectiveness of intensive laser acupuncture therapy to restore the vocal functions and wound healing of patients with hyperfunctional dysphonia. 20 subjects aged between 22 and 54 years were randomly assigned to a treatment group and a placebo group. In treatment group, laser acupuncture of 500mW output and 808nm wavelength had been applied on acupoints Renyin (St9), Lieque (Lu7), Hegu (LI4), Lianquan (CV23) and Zhaohai (Ki6). In the placebo group, placebo laser device had been used. The subjects received 12 treatment sessions, 2 times a week for 6 weeks. Voice range profile phonatogram, laryngo-stroboscopy and Voice Activity and Participation Profile were conducted before, immediate after, and four weeks after the treatment. No significant improvement was found in treatment group. This suggested laser acupuncture had minimal immediate and long term effect in treating hyperfunctional dysphonia with associated pathologies.

12 **Fricatives, affricates, and vowels in Cantonese-speaking children with cochlear implants: an acoustic study**
Hui Chun Kit Gibson

The aim of the present study was to acoustically analyze speech performance of Cantonese-speaking children with cochlear implants over a three-month period, and compare it with that of the hearing controls. Three categories of sounds in Cantonese were focused: vowels /i/, /ɛ/, /a/, /ɔ/ and /u/ (first and second formant frequencies), fricatives /s/ and /f/ (noise centre of gravity), and affricates /ts/ and /tsʰ/ (accuracy, production pattern and duration). Twenty-one subjects with cochlear implants and 21 hearing subjects matched with age and gender were recruited. Speech samples were recorded and analyzed. The results showed that children with cochlear implants demonstrated statistically significant deviated performance for vowels, fricatives, and affricates when compared with the hearing controls. However, children with cochlear implants showed an overall improvement in speech performance for all the sound categories at the second recording. The results supported that prolonged use of cochlear implants brings beneficial effect.
The relationship between affective word ratings and lexico-semantic properties in Chinese words rated by Mandarin speakers
Kwok Cherry Ng

This study investigated the relationship between lexical-semantic features: age of acquisition, familiarity, subjective frequency and imageability and affective features: emotional valence and arousal of Chinese words for native Mandarin speakers. Lexical items from the Object and Action Naming Battery (Druks & Masterson, 2000) were selected. One hundred and seventy monosyllables produced by native Mandarin speakers with high naming agreement were used. Eighty participants were recruited to rate items on lexical and affective features. The results showed that all features were highly correlated. Ratings of word imageability and frequency significantly predicted ratings of emotional arousal and frequency significantly predicted ratings of emotional valence. The results can be used to develop standardized object and action naming tests to assess aphasia in Mandarin-speaking patients. The results can also guide choice of target stimuli for rehabilitation of Mandarin-speaking patients with aphasia.

The relationship between affective word ratings and lexico-semantic properties in Cantonese actions and objects
Lao Wing Tak Alice

The aim of the present study was to develop a set of Cantonese nouns and verbs with ratings for various affective and lexico-semantic features identified in previous studies in English and other languages. The majority of stimuli were found to be neutral in rated valence and low in arousal. Significant correlations were found among affective features, among lexico-semantic features and between each of the two feature types. This pattern of correlations differs from a prior study using adjectives as stimuli. Moreover, arousal was minimal in neutral words, but was higher in negative and positive words. Multiple regression analyses identified different predictors for the affective features when ratings from all participants were analyzed together, and when noun and verb ratings from the young and old participants were analyzed separately. The results show that although monosyllabic object and action terms in Cantonese are not likely to be confounded with emotional characteristics in research studies, multicollinearity between lexical-semantic variables demands careful control over correlated factors when selecting stimuli for research into category specific effects in aphasia with Cantonese speakers.
15
Generating inferences in oral text comprehension: A study on preschool children
Law Wing Chung Beatrice

This study investigated inferential comprehension of oral text in preschoolers and its relationship with working memory and receptive ability. Forty-eight preschoolers age ranging from 3;00-5;11 participated in the study. They listened to four stories and answered all together twenty-four inferential questions; with twelve questions for knowledge-based and text-based inference each. Within text-based inference, four questions were asked on each causal, referential and character’s emotion inference. The result showed children’s ability in generating inference improved with increase age. Additional, the children performed better in generating text-based than knowledge-based inference. Regarding the three types of text-based inference, there was a significant interaction effect. Early emergency of causal and character’s emotion inference was noted at age 4 while development of referential inference started at age 5. Multiple regressions suggested working memory and receptive ability makes unique contribution in inference generation. Suggestions for further research were made.

16
Play skills development: Impacts of prenatal and postpartum maternal stress
Lee Sui Ling Cherry

Play skills development is a valid indicator of early cognitive competence and is highly correlated with subsequent language development. Development of play skills was affected by many factors. Previous studies have examined the association between prenatal maternal stress and children’s cognitive outcomes but mixed findings were found. The current study investigated the time-specific effect of prenatal maternal anxiety and postpartum maternal anxiety on children’s play skills in 49 mother-child dyads. Prenatal maternal anxiety was obtained at trimester two and trimester three of pregnancy, and postpartum maternal anxiety was collected at two years postpartum, using a validated questionnaire. Children’s play skills development at age two was evaluated using the Symbolic Play Test. Results showed that maternal anxiety at trimester two and two years postpartum did not demonstrate significant effect on children’s play skills. In contrast, maternal anxiety at trimester three was positively associated with children’s play skills even after controlling for postpartum anxiety level. Implications of such findings and suggestions for further research are discussed.
17

**Neural correlates of spatial location mapping on the Simon Effect**
Lo Kusmawati Tracy

Previous studies show that the effect of practice with incompatible location mapping results in a reverse Simon effect. However, the neural correlates of this phenomenon are yet to be clarified. This study used functional magnetic resonance imaging (fMRI) to explore the neural correlates of the Simon effect after location mapping in 20 healthy young adults who are native English speakers. The results show that incompatible location mapping leads to reduced activation in the premotor, primary motor, supplementary motor area (SMA) and mid-cingulate cortex. As practice with the Simon effect reveals subtle changes in motor function, application of the Simon task in rehabilitation training programs is recommended.

18

**Sharing stories with preschool children: Do parents modify their utterances?**
Ng Ching Yan Venus

The present study investigated how the parental discourse style during joint book reading changed with children’s age and language ability. Thirty-two parents and their children (age ranged from 3;1-6;0) were recruited and engaged in a joint book reading interaction. The amounts of parental utterances in four levels of abstraction were compared among the three age groups (3-, 4- and 5-year-old). Result revealed parents of 3-year-old children produced more low level and fewer high level utterances than parents of 4- and 5-year-old. Furthermore, percentages of utterances in each level were correlated with children’s age and language ability. Percentages of high level utterances was found to be negatively correlated with children’s ages while percentages of low level utterances was found to be positively correlated with children’s language ability. Clinical implication and interesting observation were discussed.
19

Influence of antenatal depression on offspring's communicative intention in toddler years
Siu Jy Lam Eunice

This study investigated the association between prenatal stress, in terms of antenatal depression, and toddler’s communicative intention at age two using a prospective design. A population cohort of 31 mothers were recruited in the third trimester of their pregnancy and their depression level was measured using a validated questionnaire, Edinburg Postnatal Depression Scale (EPDS). Their children’s communicative intentions were evaluated with a standardized assessment tool, Communication and Symbolic Behavior Scales Developmental Profile (CSBS-DP) and particularly investigated (1) gesture use, (2) emotion, and (3) communication (types and number of communicative intentions expressed). Multiple linear regression revealed depression level in the third trimester significantly predicted reduced gesture use in the children, after controlling for postnatal depression level in the two-year postpartum. This finding supports prenatal stress as a potential risk factor for children with social communication deficits, such as ASD. The findings also support future research in finding direct association of ASD with prenatal stress using a prospective longitudinal design.

Key words: stress, antenatal, depression, communication, intention

20

Relationship between private speech and performance in social problem solving task in preschool children
Tsang Yuen Ting Edith

This study documented the developmental course of private speech and investigated the relationship between private speech and task performance in a social task. 40 Cantonese-speaking preschool children recruited were assigned into three groups (3-, 4- and 5-year-old). They were required to manipulate interaction partner’s mental state and propose solutions to cooperate or compete with the interaction partner in finding treasures. Task-irrelevant private speech was found to decrease with age while muttering and lip movement increased with age. Task-relevant private speech showed an inverted-U age pattern. Results also revealed a significant positive correlation between private speech and total solution scores (performance measurement), and insignificant correlation between private speech and total belief question scores (performance measurement). Implications and future directions were discussed.
21
Phonological awareness abilities of Cantonese-speaking children with Down syndrome
Yau Sze Mei Tracy

This study investigated the phonological awareness abilities of Cantonese-speaking children with Down syndrome. The phonological awareness abilities of 16 children with Down syndrome (DS) aged between 7;03 to 14;09, 16 children with intellectual disability of unknown origin (ID) aged between 7;09 to 14;06 and 16 children with normal intelligence (NI) aged between 3;6 to 9;0, matched on mental age and gender, were compared. Phonological awareness abilities were evaluated by eight tasks. The results showed that the children with DS scored lower than the children with NI in all tasks except for phoneme identification task. It was found that phoneme awareness preceded rhyme awareness in the children with DS. It is concluded that although children with DS were able to develop partial phonological awareness, the acquisition pattern was developmentally atypical. The findings offer information for speech therapists to make reasonable expectations and integrate the training of phonological awareness into therapy accordingly.

22
Speech production accuracy and variability in children with Down’s syndrome
Yeung Sin Ting Jenny

The study investigated the speech accuracy and variability of 15 children with Down’s syndrome, 15 children with intellectual impairment and 15 children with normal development. All participants were asked to produce 31 words from Cantonese Segmental Phonology Test (CSPT) in three spontaneous trials and three imitated trials. Results showed that significantly lower accuracy and higher variability were found in repeated productions of consonants, vowels, tones and whole-words in speech of children with Down’s syndrome. Higher speech accuracy and lower speech variability upon imitation were also noted in Down’s syndrome population. Using these findings, this study explored the possible etiology of speech disorder in Down’s syndrome population and suggested appropriate intervention approaches targeting the underlying deficits in the speech processing chain.
Plenary 4

Evidence-based interventions for reading and language impairments

Maggie Snowling
Professor and Chair
Department of Psychology, The University of York

It is well-established that children with oral language difficulties are at high-risk of reading difficulties. Such evidence places the early identification of children high on the political agenda and argues against a ‘wait and see’ approach. This paper begins by discussing the contrasting profiles of reading impairment (dyslexia and reading comprehension impairment) before discussing the main principle underlying interventions for these groups. Whereas interventions for decoding deficits (dyslexia) comprise work on letter-sound knowledge, phonological awareness and systematic reading reinforcing emergent skills, interventions for reading comprehension difficulties require a focus on oral language skills and text comprehension strategies. With this evidence as a backdrop, the talk will consider how programmes can be devised to strengthen the foundations of decoding and comprehension before children fail. Together the findings of controlled trials provide a robust evidence-base which can be used to devise plans for the management of pre-school and school-age children with language learning difficulties, including dyslexia.

About the speaker:
Maggie Snowling holds a personal Chair in the Department of Psychology at the University of York. She is also qualified as a clinical psychologist.

Maggie's first academic position was at the National Hospital's College of Speech Sciences where she later became Principal (1989). She moved to be Chair and Head of the Department of Psychology, University of Newcastle upon Tyne in 1992 before taking up her present post in 1994. Maggie was awarded the Marion Welchman Award of the British Dyslexia Association in 1997, the British Psychological Society Presidents' Award in 2003, the Samuel T Orton award of the International Dyslexia Association in 2005 and the Distinguished Scientific Contributions Award of the Society for the Scientific Study of Reading in 2010.

Maggie is Past-President of the Society for the Scientific Study of Reading and one of the Joint Editors of the Journal of Child Psychology and Psychiatry. In 2008/9 she served as a member of Sir Jim Rose’s Expert Advisory Group on provision for Dyslexia (2009) and as an expert member of the Education for All: Fast Track Initiative group in Washington DC in 2011. In 2012 she will take up the role of President of St. John’s College, Oxford.

Webpage http://www.york.ac.uk/psychology/research/groups/crl/