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Personal narrative assessment for Cantonese-speaking school-age children

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Abstract

This study investigated the oral personal narrative production in 60 Cantonese-speaking children between 6 and 9 years of age. Three language measures, namely Total Personal Narrative Score, Macrostructure Score and Microstructure, were derived from three personal narratives produced by each participant after listening to the sample stories. The participants also completed the Cantonese Grammar subtest of the Hong Kong Cantonese Oral Language Assessment Scale (HKCOLAS). Analysis of the data demonstrated that there were significant group differences in narrative production skills with respect to all the tested language measures. Further investigation identified that the high point element 'Resolution' at the macrostructure level was the most sensitive to age, and 'Conjunction' was a better age indicator than 'Referencing' at the microstructure level. The correlation between the Macrostructure and Microstructure scores was positive but weak, while the correlation between Total Personal Narrative and Cantonese Grammar scores was positive and strong. No significant group difference was found with respect to the length of narratives. These findings supported McCabe and Bliss (2003) and Cheng's (2004) reports that personal narrative production can be further developed as an efficient tool for screening and assessment of language capabilities of Cantonese-speaking school-age children.

Personal narrative is one of the earliest developing genres of narration, which grows throughout the preschool and early elementary school years.   It generally develops around events that children personally experienced in the past, such as experience of getting hurt and holidays (Peterson & McCabe, 1983; Preece, 1987).   Children produce personal narratives for communication with peers and adults, and this ability is found to be related to their academic, social and linguistic skills (e.g. Crais & Lorch, 1994; Scarborough, 2001).   Despite the importance of personal narrative skills, there is a lack of research focusing on its development in Cantonese-speaking children.   To address this inadequacy, this study aims to provide descriptive information about the personal narrative skills of Cantonese-speaking school-age children in Hong Kong, and develop an assessment framework that can be easily used in school settings.

Levels of Personal Narrative Assessment

Personal narrative assessment involves macro-structure and micro-structure levels of analysis.   For macrostructure, the literature reported the use of high point and story grammar analysis.   "High point analysis" involves the identification of the high point elements that describe a child's discourse-level abilities with respect to the overall narrative structure (McCabe & Rollins, 1994).   High-point elements (HP), including introducer, orientation, complicating action, evaluation, resolution and coda, have been reported to be sensitive to age changes (McCabe & Bliss, 2003).   "Story grammar analysis" examines how a narrative is structured around the explicit goals of a protagonist (Stein & Glenn, 1979).   Story grammar analysis examines the extent to which stories are structure around the explicit goals of a protagonist.   Between the two, high point analysis has been predominantly applied in the macro-analysis of personal narratives (e.g. Labov, 1972; Liles, 1985).   Literature reviews suggested an

underestimation of children's personal narrative abilities with the use of story grammar analysis. For instance, if a child tells a story about a time she was hurt but untreated, it would be considered as a good narrative using of high point analysis but defined as a primitive story using story grammar analysis. Another concern is that story grammar analysis often failed to discriminate impaired narration, as research indicated that children with language impairment can produce all key story grammars during story-retelling (e.g. Ripich & Griffith, 1988).

For microstructure, McCabe and Bliss (2003) proposed a model for assessing syntactic structures of personal narratives, namely the Narrative Assessment Profile. Six microstructure components were investigated, including topic maintenance, event sequencing, explicitness, referencing, conjunction and fluency (McCabe & Bliss, 1998). Table 1 illustrated the definition of each component. To (2010) studied the use of two components, namely referencing and conjunction, for assessing narrative production of school-age children, and both revealed age-related changes.

Table 1. Definition of Microstructure components

Component	Definition
Topic Maintenance	Describes how the utterances relate to a central topic.
Event sequencing	Involves the presentation of events in chronological order.
Informativeness	Evaluates if a narrative contains full elaboration of the plot, and contains also the number of high point elements
Referencing	Describes the adequacy in the identification of individuals, features and events
Conjunction	Consists of words (e. g. and, then) or phrases that link utterances and events, which contribute to coherence.
Fluency	Includes lexical or phrasal interruptions in utterances.

Current Practice of Narrative Assessment and its Clinical Uses

Compared to naturalistic conversation, narrative serves as a more productive context for the elicitation of complex syntactic structures that normally develop in school-age children (Gummersall & Strong, 1999). There are various types of elicitation methods currently used in narrative assessment, with fictional and personal narratives commonly adopted. Fictional narrative assessment is predominantly employed in the field of speech-language pathology (e.g. Gillam et al, 2004; Justice et al, 2006). Past studies of oral narrative skills of school-age children primarily focused on fictional story-retell and generation rather than personal narratives. Numerous studies on fictional narratives of children have been implemented in English-speaking communities. These studies identified age-sensitive narrative development until age 9 (e.g. Owens, 1999). Researches on fictional story-retelling of Chinese-speaking children were divided into two levels. Macroanalysis concerns development of overall narrative organization in terms of causal and temporal relationships (Tam, 2006; Wong, 1995). Microanalysis evaluates the number and diversity of cohesive ties, which are the grammatical and lexical links within sentences that hold a text together in both linguistic and nonlinguistic content (Snow & Ninio, 1986). Cohesive ties were classified into five parameters, namely conjunction, ellipsis, lexical cohesion, referencing and substitution (Law, 2001; Leung, 2008; Tsui, 2004). Conjunction is defined as a part of speech that connects words, phrases or clauses together, while referencing points to recurring entitles that mentioned earlier in a text (To, 2006). Man (2010) and To (2010) examined these two cohesive ties, and reported that the measure of conjunction was a better predictor of age than referencing. As the studies involved fictional narratives for measurement, the findings may not generalize to personal narratives due to genre difference.

For personal narrative assessment, research evidence has in fact suggested that children are more competent at producing advanced story grammar elements, such as evaluations, explanations and ending, in personal narratives than those in other genres (Losh & Capps, 2003).   These findings have been contributed to its high frequency of use in naturalistic contexts.   Preece (1987) and McCabe et al (2008) studied a range of narrative forms produced in conversation among preschoolers and school-age children, in which 80% of the samples obtained were personal narratives.

Studies of Personal Narrative in the Western Literature

Research in personal narratives proceeded in two directions.   One focuses on personal narrative development across age. Age-related variations of personal narrative skills were noted, in which older children produced personal narratives with greater length and more story grammar elements (e.g. Merritt et al, 1989).   The other direction contrasts personal narrative performance between children with typical language development and language impairment.   Van Bysterveldt (2012) compared micro-components of personal narrative of school-age children with Down Syndrome and normal language development, with significant correlation found between age and number of different words.   As English-speaking children were included as participants in the above studies, the findings may not be valid for Cantonese-speaking group.

Studies of Personal Narrative in Cantonese

The macrostructure level of personal narrative in Cantonese was previously studied using high point analysis.   Cheng (2004) investigated the macrostructure level of personal narratives, and identified an increase in the use of high point element 'Evaluation' in telling personal narratives in a group of school-age children.   The

same variable was investigated in Ho's study (2007), in which no significant changes were found across preschool, school-age children and adults.   The inconsistency was likely to be the result of small sample size in the latter study, with only few specific components of personal narratives studied.

Present study

The purpose of this study is to make a cross-sectional comparison of the personal narrative skills of Cantonese-speaking school-age children, and to validate the children's personal narrative scores with their scores from the Cantonese Grammar subtest. It also aims at extending Cheng's work (2004) by exploring various measures of personal narratives beside the use of the high point element 'Evaluation'.   It specifically examines the following questions.

1. Do older children perform better than younger children in the production of personal narratives?

2. Do children's macrostructure and microstructure scores correlate?

3. Do children's personal narrative scores correlate with their grammatical scores from the test of general Cantonese grammar?

Method

Participants

A total of sixty children, ranging from 6 to 9 years old, were randomly selected from four primary schools located in three different regions in Hong Kong. There were twenty participants with an equal number of boys and girls in each of the age group: Age 6;0-6;11, 7;0-7;11, 8;0-8;11.   All participants are native Cantonese

speakers and reported to have normal speech, language and hearing abilities.   The

background information of the participants is listed in Table 2.

Table 2.   Background information of the participants

| | Gender | | Age (Months) | |
Age group	Boy	Girl	Mean (SD)	Range
6	10	10	79.9 (2.37)	75-83
7	10	10	90.6 (3.66)	84-95
8	10	10	102 (3.15)	97-107

Procedure

The order of administration of the narrative task and the Cantonese Grammar

test was randomly assigned for each participant.   Personal narratives were elicited

using the "Conversational Map Procedure" (Bliss & McCabe, 2003).   Six topics were

chosen after a pilot study with ten children aged 7 to 8, which included an incident of

injury, birthday party, holiday, doctor's visit, festival and fight.   Four personal

narratives were collected to avoid having a particular story posing significant

influence (Bliss & McCabe, 2003).   A sample story was first given by the

investigator.   The participant was then asked if he/she had relevant experience to

share.   Topics would be changed if the participant replied 'No'.   The participant was

then encouraged (e.g.   Tell me more about that.) to produce the narrative if he/she

said 'Yes'.   Neutral prompts (e.g. 'anything else?', 'and'?) was used to encourage the

production of discourse if the child stopped narrating.   This strategy was proposed to

have no effect on the overall content of the narratives (Peterson & McCabe, 1991).

For the Test of Cantonese Grammar of HKCOLAs, it was implemented as a

general measure of the participants' language ability.   Children's knowledge of a

wide range of grammatical forms was tested through primarily a picture pointing comprehension task, with a few sentence patterns tested using a production task.

Transcription and Coding

All oral narrative language samples were tape-recorded and transcribed orthographically by the investigator.   The three longest narratives produced by each participant were identified and coded.

For macrostructure, one point was given for each clearly mentioned high-point elements (Labov, 1972).   High-pointing elements were divided into six categories, namely *Introducer*, *Orientation, Complicating action*, *Evaluation, Resolution* and *coda.*   The definition of each high point elements was illustrated in Table 3.   The maximum macrostructure score was 6.

Table 3.   Summary of High Point Elements and Definition (Labov, 1972)

Element	Definition
Introducer	Occurs at the beginning and serves an overview of the story.
Orientation	Refers to the background and setting information.
Complicating action	Illustrates how action proceeds to the high point.
Evaluation	Indicates the character's emotional comment.
Resolution	Signifies the complication of an event
Coda	Shows the ending to the present context.

Microstructure measures were further divided into measures of conjunctions and referencing. Table 4 illustrated the criteria modified from the Narrative Assessment Profile (Bliss & McCabe, 2003).   For use of conjunctions, scores were given to any appropriate use of additive, temporal, causal and coordinative

conjunctions, which normally developed in school-age children (Tse, 1997). The maximum score for each measure was 2, with zero mark as 'inappropriate', one mark as 'variable' and two marks as 'appropriate'. Example 1.1, 1.2 and 1.3, which score 2, 1 and 0 respectively, demonstrated the way of judging the appropriateness of conjunction use.   For example 1.1, the additive conjunction '**and**' and the causal conjunction '**so**' were used to demonstrate the relations between the clauses. Example 1.2 illustrates the omission of causal conjunction '**so**', while example 1.3 bears absence of conjunctions.

[1.1] 'I bought a jacket **and** a necklace last week, **so** I did not have money to buy you
        a lunch. ' (Microstructure score – Conjunction: 2)

[1.2] 'I bought a jacket **and** a necklace last week, I did not have money to buy you a
        lunch. ' (Microstructure score – Conjunction: 1)

[1.3] 'I bought a jacket a necklace last week, I did not have money to buy you a
        lunch. ' (Microstructure score – Conjunction: 0)

Concerning the use of referencing, Givon (1983) proposed that scores were allocated based on the proportion of unambiguous references made, which is defined as how the references were introduced and maintained within the context.   Example 2.1, 2.2 and 2.3, which also score 2, 1 and 0 respectively, illustrated how the use of referencing affects the topic continuity of a narrative.   For example 2.1, the three referents, namely **I**, the **hamburger** (also referred as **it**), and **Tommy,** were also introduced and understood throughout the text.   However, the use of pronoun '**him**' in example 2.2 failed to introduce the character, while all the pronouns used in example 2.3 lacked any introduction and maintenance of referencing.

[2.1] '**I** brought **a hamburger**. I gave **it** to my friend **Tommy.**' (Microstructure

score – Referencing: 2)

[2.2] '**I** brought **a hamburger**. I gave **it** to **him**.' (Microstructure score:Referencing: 1)

[2.3] '**I** brought **it**. I gave **it** to him**.** ' (Microstructure score – Referencing: 0)

The maximum score for each measure was 2.   After adding scores from these

two measures, the maximum microstructure score was 4.   Each story contained a

maximum score of 10 (With Macro- + Micro-structure scores combined).   A total

personal narrative score of 30 per participant was calculated by adding the three

longest narratives, with a total of 18 as macro- and a total of 12 as microstructure

scores.

Table 4.   Criteria of microstructure components for each narrative

	Conjunctions (CONJ) % of occurrence (With correct syntactic structure)	Referencing (REF) % of appropriate referencing of time, place, individuals and attributes
Appropriate (2 points)	75% to 100%	75% to 100%
Variable (1 point)	25% to 75%	25% to 75%
Inappropriate (0 point)	0% to 25%	0% to 25%

For the Test of Cantonese Grammar, the scoring method was based on the

user manual of the HKCOLAS (2006).   The first receptive language test "Picture

selection" included forty-eight items testing different syntactic markers.   The

maximum score was 48.   The second expressive language test "Elicited production"

involved the examination of relative clauses, passive sentence and sentences with

"*tsœng1*".   The maximum score was 18.   By adding the scores of two sections, the total grammatical score for Cantonese Grammar was 66.

Statistical analysis

The scores obtained were analyzed descriptively and inferentially. Firstly, three sets of one-way analyses of variance were administered to examine age-related differences in the total personal narrative score, macro- and micro-structure scores. The Bonferroni test was chosen as a post-hoc analysis for evaluating specific group differences on different tasks.   The second set of analyses made use of the Pearson product-moment correlation to examine the relationship between narrative and grammatical performance, and that of macro- and micro-structure scores with age partialled out.   The degree of correlation was determined based on the standard of Cohen (1998), in which r = 0.1 to 0.3 is weak, 0.3 to 0.5 is moderate, 0.5 to 1 is strong. The 0.05 level of significance was adopted.

Reliability measures

Three Speech and Hearing Sciences year IV undergraduates participated in the inter-rater reliability procedure.   They were requested to score 50% of personal narrative samples and 10% of Cantonese Grammar test results.   None of the examiners had scored participants in the pilot studies.   A higher proportion of narrative samples were analyzed, as the personal narrative scoring involves personal judgment in the appropriateness of conjunction and referencing used.   The correlation of the original scores and the second score was analyzed using Pearson product-moment correlation coefficients The correlation coefficients for the macrostructure and microstructure scores were found to be $r(60) = .89$ and $r(60) = .88$ respectively, $p < .01$.   The corresponding correlation coefficients for Cantonese Grammar Score

was found to be r(60) = .96.   The discrepancies were resolved by discussion among the raters.

Results

Development of Personal narratives: Total Personal Narrative Score

To remove the length effect on personal narrative scores, the mean number of words of narratives produced was calculated. The mean number of words did not follow a linear pattern across age groups, and a one-way ANOVA test demonstrated that there was no significant group difference (p = .921). The Total Personal Narrative Scores demonstrated a small but steady increase by age, with means (SD) of 13.7 (1.95) for the 6-year-old group, 15.9 (2.47) for the 7-year-old group and 19 (4.21) for the 8-year-old group.   A one-way ANOVA test confirmed a statistically significant main effect of age, $F(2,57) = 21.402$, $p < .001$.   Post-hoc Bonferroni test demonstrated a statistically significant difference between the 6- and 7-year old groups (p = .025), the 7- and 8-year-old groups (p = .001), and the 6- and 8-year-old groups (p < .001). Table 5 illustrated the summary for the participants' Personal Narrative Score, Macrostructure score and Microstructure scores across age groups.

Table 5.

Descriptive Statistics of the Personal Narrative, Macrostructure and Microstructure Scores by age groups

Age group	Number of words		Personal Narrative Score (Max: 30)		Macrostructure Score (Max: 18)		Microstructure Score (Max: 12)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Age 6	65.0	3.67	13.7	1.95	7.11	1.41	6.60	1.05
Age 7	77.0	4.55	15.9	2.47	7.55	1.96	8.45	1.32
Age 8	69.5	3.79	19.0	4.21	8.90	2.29	10.2	1.39

Group difference in personal narrative production: Macrostructure

The mean (SD) of Macrostructure Score were 7.11 (1.41) for the 6-year-old group, 7.55 (1.96) for the 7-year-old group and 8.90 (2.29) for the 8-year-old group. The participants produced a higher number of high point elements as age increased. The results of one way ANOVA test demonstrated a significant main effect of age, $F(2,57) = 4.751$, $p = .012$. Post-hoc Bonferroni test revealed a statistically significant difference between the 6- and 8-year-old groups ($p = .013$), but not between the 6- and 7-year-old groups ($p = .091$) and the 7- and 8-year-old groups ($p = .24$).

The development of the six macrostructure components (i.e. the high point elements) was then examined individually. Table 6 showed the number of children in each age group who produced the high point elements. Almost all participants in each age group used the high point elements '*Complicating action*', '*Evaluation*' and '*Coda*'. There was a noticeable difference in the number of participants who produced '*Resolution*', '*Orientation*' and '*Introducer*' across age groups. '*Resolution*' was produced by ten of the twenty six-year-old participants, and the number of participants rose steadily with age. Children from 7 years old onwards began to use '*Orientation*', yet the number of participants was just over 50% in the eight-year-old group. The high-point element '*Introducer*' was used by only 25% of the participants even by the age of eight.

As the high point elements were scored in an ordinal level, the Kruskal–Wallis one-way ANOVA by ranks test was adopted on *'Resolution', 'Orientation' and 'Introducer'*. For the use of '*Resolution*', a statistically significant group difference was detected, $H(2) = 7.549$, $p = 0.023$, with a mean rank of 28 for 6-year-old group, 29.5 for 7-year-old group and 34 for 8-year-old group. For the use of '*Coda*', a

statistically significant group difference was also examined, $H(2) = 49.250$, $p < .01$, with a mean rank of 32 for 6-year-old group, 11.58 for 7-year-old group and 47.93 for 8-year-old group. The one-way ANOVA test revealed that there was no significant group difference found for the use of '*Introducer*' ($p = 0.081$).

Table 6.

Number of participants in each age group who produced the high point elements

Age group	Introducer	Orientation	Complicating action	Evaluation	Resolution	Coda
Number of participant in each age group = 20						
Age 6	2	0	19	17	10	19
Age 7	1	8	20	18	12	18
Age 8	5	11	20	18	16	20

Post-hoc Mann-Whitney U test on the use of 'Resolution' and 'Coda' was carried out and the results were illustrated in Table 8.   There was a statistically difference between all age groups for the use of 'Resolution', and between the 6-year-old and 8-year-old groups for the use of 'Coda'.

Table 8.   Pair-wise comparison of Mann-Whitney U Test on Macrostructure scores

Compared group	High-point elements	
	Resolution	Coda
Age 6 vs. Age 7	U = 120*	U = 180
Age 6 vs. Age 8	U = 80*	U = 110*
Age 7 vs. Age 8	U = 100*	U = 190

*$p < .05$

Group difference in personal narrative production: Microstructure

The mean (SD) of Microstructure Score were 6.6 (1.05) for 6-year-old group, 8.45 (1.32) for 7-year-old group and 10.2 (1.39) for 8-year-old group. The microstructure score generally increased with age. One-way ANOVA test confirmed a main effect of age, $F(2,57) = 40.878$, $p < .001$.   Post-hoc Bonferroni test revealed a statistically significant difference in all age groups (6- and 7-year-old groups ($p = .025$), 7- and 8-year-old groups ($p = .79$), 6- and 8-year-old groups ($p < .001$)].

The two microstructure components were studied separately.   The use of conjunction increased sharply across all age groups. The one-way ANOVA test on the use of conjunction indicated a main effect of age, $F(2,57) = 13.258$, $p < .001$.   Post-hoc Bonferroni test evaluated a significant difference between the 6- and 8-year-old groups ($p = .028$) and 7- and 8-year-old groups ($p < .001$), but not differ in the 6- and 7-year-old groups ($p = .053$)

For the use of referencing, the 7-year-old group scored higher than that of 6-year-old group, yet the increase levelled off at the 7-year-old group.   The one-way ANOVA test confirmed that there was no significant main effect of age ($p = .225$).
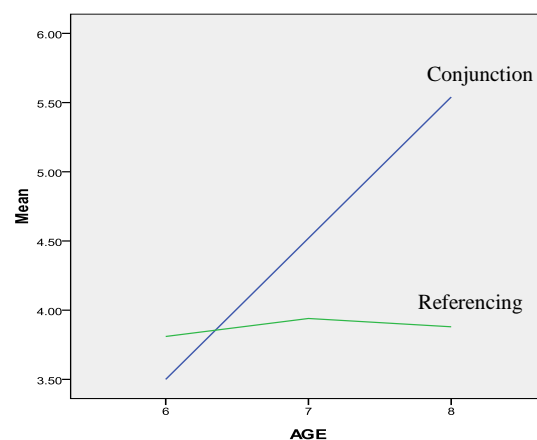

Figure 1. Line graph of microstructure components by age group

Correlation between Macro- and micro-structure scores of Personal Narratives

Partial correlation was implemented to eliminate the effect of age on the measures of two personal narrative sub-scores. The Pearson product-moment correlation coefficient between the Macrostructure and Microstructure Scores was positive and weak (r = .235, p = .043).   The scatter plot in Figure 2 illustrated the distribution of the macro- and micro-structure scores.

Without eliminating the effect of age, the Pearson product-moment correlation coefficient between macrostructure and microstructure scores was positive and moderate (r =.419, p =.031).
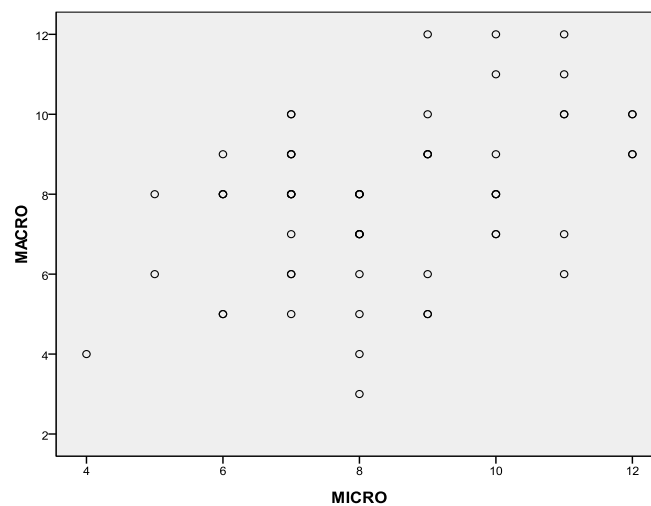

Figure 2. Scatter plot of Macrostructure and Microstructure scores

Correlation between Personal narrative scores and Cantonese grammar scores

Partial correlation was implemented to evaluate how the measure of personal narrative associated with the general measure of language development.   The Pearson product-moment correlation coefficient between the personal narrative scores and Cantonese grammar scores was r (60) =.765, p <.001, revealing a statistically

significant positive strong correlation.   Figure 3 illustrated that personal narrative

scores increase with Cantonese grammar scores.

Without eliminating the effect of age, the Pearson product-moment correlation

coefficient between personal narrative scores and Cantonese grammar scores was
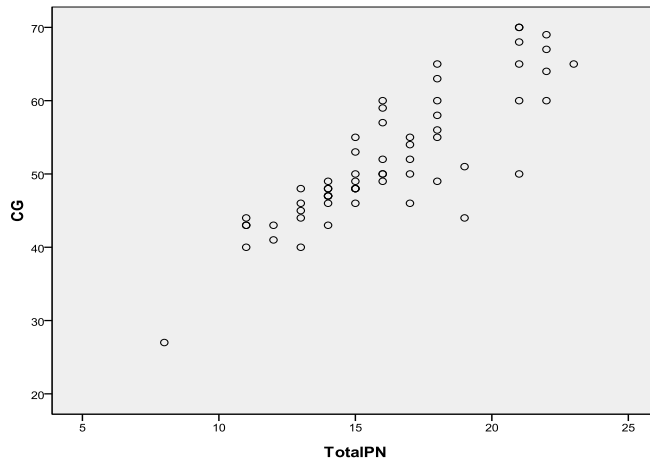
positive and strong (r = .852, p < .001).

Figure 3. Scatter plot of Personal Narrative and Cantonese Grammar scores

Correlation between Cantonese grammar scores and Age

The correlation between Cantonese grammar scores and age was r (60) = .584,

p < .001, indicating a statistically significant positive, median correlation.   The

scatter plot in Figure 4 illustrated that Cantonese Grammar scores increase with age.
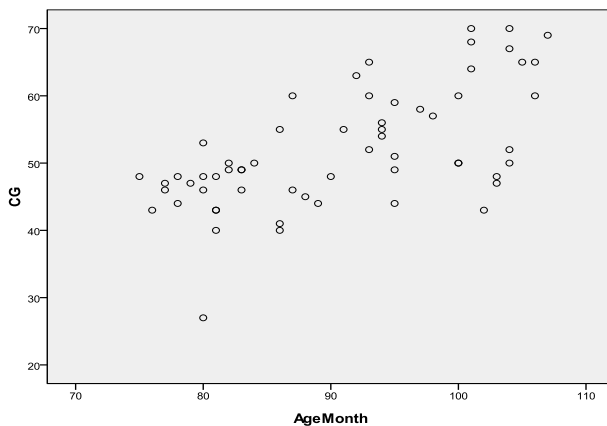

Figure 4. Scatter plot of Age and Cantonese Grammar scores

Summary of Main Findings

The 'Total Personal Narrative Score' was found to be statistically significant different between adjacent age groups.   Further investigation on the Macrostructure and Microstructure levels also detected respective age-related changes.   For the six high point elements at the Macrostructure level, 'Resolution' was the most sensitive to age.   For Microstructure level, 'conjunction' was a better age indicator than 'referencing'.   The correlation between the Macrostructure and Microstructure scores was positive but weak, while the correlation between Total Personal Narrative score and Cantonese Grammar score was positive and strong.

Discussion

Developmental relationship between Personal narrative production and Age

The first aim of the study was to verify if older children would demonstrate better personal narrative performance than that of younger children. Quantitative analysis demonstrated that there was a strong developmental trend in the Total Personal Narrative Score, Macrostructure Score and Microstructure Score of Cantonese-speaking children aged 6 to 9. Given the significant group differences in the development in Macrostructure and Microstructure scores, it was logical that the Total Personal Narrative Score manifested age-related changes across the three age groups. Analysis of language samples revealed that older children generally achieved higher Personal Narrative Scores, and therefore produced increasingly greater number of high point elements, used a larger and more diverse types of conjunctions and appropriate referencing. As ceiling effect was not observed in this study, progressive development of personal narrative was expected beyond the age of 9.

Analysis of Macrostructure Level

The Macrostructure Score increased steadily from 6-year-old group (Mean: 7.11) to the 8-year-old group (Mean: 8.9), with no ceiling effect noted. The results were generally comparable to Labov's (1972) proposed high point analysis model, in which significant changes at macrostructure level of narratives were identified between the ages of 3 to 12. The increase in Macrostructure score could be correlated to the progressive development in cognition across ages. Wong (1995) proposed that narrative production involved the mastery of 'meta-linguistic skill', an ability to form and organize coherent texts beyond word and sentence levels. The construction of the high point element framework required conceptual complexity generally developed across ages, which could result in higher overall macrostructure scores detected in this study.

The increase in Macrostructure Score across ages could attribute to the development of the high point element *Resolution,* which demonstrated the highest sensitivity to age. Deese (1983) proposed that the growth in meta-linguistic skills highly contributed to the developmental trend of the high point element. As *Resolution* carried the purpose of stating the salient complication of an event, it required the meta-linguistic level of understanding that other high point elements (e.g. *Introducer, Complicating Action*) should be told before drawing into the *Resolution*. For instance, children needed to explain the *Resolution* (I went to the hospital) by producing the *Complicating Action* (I ate some rotten food) for producing a personal narrative 'Hospital'. This ability in enhancing the coherence of narratives generally required the development in cognition in later stages (Bamberg, 1995).

The high point elements *Complicating Action, Evaluation* and *Coda* were used by nearly 100% of participants in the 6-year-old group of the study. Only the early acquisition of *Complicating Action* generally agreed with the previous studies, in which characters' actions served as the central line in the plots of personal narratives. Merritt and Liles (1987) stated that young children would be able to produce *Complicating Action* once they acquired certain concepts and vocabulary repertoire to describe actions related to a theme. For the high point elements *Evaluation* and *Coda*, this study contrasted the Western literatures in terms of age of acquisition. Hughes (1997) highlighted that the high point elements *evaluation* and *coda* were typically developed later with lower frequency of occurrence than that of *orientation, complicating action* and *resolution,* as they 'served only as "sparkles" in a narrative' (P.439). The discrepancy was hypothesized to be the results of the cultural difference in terms of teaching style and socio-functional use (Wong, 1995). Cantonese-speaking school-age children generally learnt from their teachers that *Evaluation* and *Coda* served the essential purpose of signalling the end of narratives and self-reflecting on the narratives told.   Chong's (2010) study also confirmed that the use of *Coda* was commonly found in Cantonese-speaking pre-school children in both their personal and fictional narrative productions As a result, the use of the two high point elements was found to develop significantly and served as an obligatory element by Cantonese-speaking children in personal narrative production.

The use of *Introducer* and *Orientation* required children to have perspective-taking ability. Children needed to determine how much background information did the listeners know, and think how the listeners would feel towards to the narrative. This role-taking ability would require development in psychological and cognitive abilities stakes and therefore might appear later in narrative development.

Apart from quantitative analysis, there are also qualitative inter- and intra-group differences in the production of macrostructures. It was found that memory effect and amount of personal exposure were the contributing factors in determining the macrostructure scores of a child.

Memory effect. As the example of personal narrative given by the investigator prior to the sampling was structurally designed for the use of high point elements, children with better short-term memory and retrieval skills tended to achieve higher macrostructure scores. McCabe (1999) proposed a complex linkage between telling and remembering of narratives, in which telling involves certain degree of cognitive organization skills to facilitate subsequent recalls. However, it should be noted that the use of rote memory skills should not solely account for the rise in macrostructure scores, as narrative production involved cognitive processing that was more than short-term memory. The higher-order cognitive functioning of understanding meaning between sentences, concepts and referent switching were necessary to produce logical stories. The transcriptions in Appendix E illustrated how the use of high point elements was similar to the sample story. In the sampling, the 8-year-old participant told a typical personal narrative with slight modification of the sample story, in which a story with minor amendments of *orientation* and *resolution* told.

Difference in personal exposure. In addition to memory effect, there were children who produced event description instead, which involved a focus on features of a particular scene like washing hands or cooking (Hudson & Swadener, 1991). As event description did not necessarily consist of various macrostructure components, lower macrostructure scores were resulted. The transcriptions in Appendix E were extracted from two participants in the 7-year-old group with similar scores in the Cantonese grammar test. Having similar general language abilities, the two

participants yet shared their personal experience of a trip with different number of

high point elements used.   This result matched Liles' (1999) findings that the level of

complexity of personal narratives was not exclusively determined by the client's

narrative skills, but also the amount of personal exposure to the theme.

Analysis of Microstructure Level

For the microstructure level, this study concluded that the use of conjunction

was more age-sensitive to that of referencing. Older children in this study were found

to produce a variety of conjunctions in the personal narratives. For instance, the

conjunctions of concession (e.g. "Although") and replacement (e.g. "or else") were

commonly noted in the 7- and 8-year-old groups, but was used by none of the

participants in the 6-year-old group. With reference to the primary curriculum in the

Education Bureau (2011), the number of conjunctive devices taught was significant in

junior classroom practice of narration, especially in the use of concessive.   It is

therefore not surprising that the participants use greater number and varieties of

conjunctions across grade level.

For the use of referencing, the scores were found to be comparable in the three

age groups in this study.   The six-year-old group demonstrated an overuse of

pronominal anaphors, in which they produced anaphors like "This" or "It" without

acknowledging the referents at first. Though children in the seven- and eight-year-old

groups tended to use more nominal anaphors, inappropriate use of pronominal

anaphors was still frequently noted. As a result, naive listeners therefore had

difficulties in resolving the intended referent. This finding supported To (2006)'s

developmental study on the use of referencing markers, in which she concluded that

proper use of pronominal anaphors was generally observed until the end of primary school years. Because of its insignificant difference in children aged 6 to 9, the use of referencing did not serve as a sensitive age indicator.

Relationship between Macro- and Micro-structure Levels

The second research question investigated the degree of correlation between macrostructure and microstructure levels. Though both macrostructure and microstructure scores both increased with age, the correlation between the two scores was positive and weak ($r(60) = .235, p = .073$). Qualitative analysis in the narrative samples also demonstrated that high marks in the macrostructure level did not necessarily conduce to better performance in the microstructure level, and it is the same for the reversed pattern. In this study, there were approximately 50 to 70% of participants in each age group who could produce narratives with high macrostructure scores (i.e. 5 out of 6 marks), yet with poor conjunctive linkages and referencing markers, resulting in low microstructure scores (i.e. 1 out of 4 marks). Shaprio (1991) suggested that oral narrative production required great cognitive and linguistic demand. Children might therefore concentrate on constructing the episodes of the narrative, while other children might spend most of the mental effort in achieving the coherence during sentence formulation. As a result, there was no clear relationship between the development of macrostructure and microstructure, given that great individual variance existed across groups.

Relationship between Personal narrative production and General Language Ability

The third question addressed the issue of correlation between personal narrative production and general language ability of school-age children. The

Personal Narrative Scores and Cantonese Grammar scores were found to have a statistically significant positive, moderate correlation, r (60) = .852, p < .001. This was not surprising because the proficiency in the use of Cantonese grammar generally supports greater syntactic complexity in oral narrative production, with inclusion of more high-point elements and syntactic markers such as conjunction and referencing. Snow (1995) identified a similar pattern and argued that higher-order language and cognitive skills, such as the understanding of mental states, were important for formation of coherent narratives. It was also noted that the correlation between Cantonese grammar and personal narrative scores in this study (r = .765) was significantly greater than that between the Cantonese grammar and fictional narrative scores in HKCOLAS (r = .682).

Towards the use of personal narratives in clinical assessment

The above results demonstrated that personal narrative production could be an effective context for screening and assessing the language development in Cantonese-speaking School-age children aged 6 to 9. Compared with the traditional method of story retelling, personal narrative elicitation had high ecological validity, developmentally sensitivity and inter-rater reliability. It also involved clear task administration, which embraced easy scoring, required less than 10 minutes to complete the task and did not require detailed transcription.

For future practice of personal narrative assessment, other parameters of the microstructure level in Table 1, beside the use of conjunction and referencing, could be examined for their sensitivities of age. Apart from the approach suggested by McCabe and Bliss (2003), Paul (2007) also recommended that 'Richness of Vocabulary' was a powerful indicator in determining children's semantic complexity

and also their narrative skills at a deeper level.   Their age sensitivity towards Cantonese-speaking school-age children could therefore be examined.

Further Research Directions

Possibility of using the present narrative protocol to assess narrative performances of school-age children was indicated, as no ceiling effect was noted in the participants even at the age of 9 years. Extending the number of participants and the age range of targeted participants to the entire primary school population will therefore be suggested. Development of an effective scoring matrix will also be recommended, especially at the microstructure level.   The current study adopted the use of Narrative Assessment Profile designed by McCabe and Bliss (1998), in which the range of scoring of microstructure components was limited (with ordinal level of score 0, 1 and 2) to reflect the variation of the participants' abilities with greater precision and concision.

Conclusions

This study provided preliminary developmental information on personal narrative production in Cantonese-speaking children between the age of 6 and 9 years. The three language measures, including the Total Personal Narrative Score, Macrostructure and Microstructure scores were statistically powerful in differentiating the children in different age groups. Given the high age sensitivity of the three language measures, it is suggested that personal narrative production could serve as a developmental measure of expressive language abilities of Cantonese-speaking school-age children with typical language development.

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