<table>
<thead>
<tr>
<th><strong>Title</strong></th>
<th>The use of aspect markers in narrative in typically developing and language-delayed preschoolers</th>
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<td><strong>Other Contributor(s)</strong></td>
<td>University of Hong Kong</td>
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The use of aspect markers in narrative

in typically developing and language-delayed preschoolers

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A dissertation submitted in partial fulfillment of the requirements for the Bachelor of Science (Speech and Hearing Sciences), The University of Hong Kong, June 30, 2008.
Abstract

Recent cross-sectional research revealed developmental changes in the use of aspect markers in Mandarin narratives (Shu, 2004), and less facility in using aspecual forms in video narration was shown in Cantonese specific language impairment children (Stokes & Fletcher, 2003). This cross-sectional study aimed to profile aspecual development for typically developing children (age 3, 4 and 5) in total percentage of aspect markers used, ratio of different verbs with aspect markers to different verbs used, and the use of aspect markers with non-prototypes in fictional narrative. It also compared the performance of typically developing and language-delayed children. The results indicated that aspecual development did not complete during preschool years. Language-delayed children showed significant differences in comparing with typically developing peers in all measurements except the use of aspect markers with non-prototypes. It indicated that language ability was not a major factor influencing the use of aspect markers with non-prototypes.
Sentences consist of information that allows people to locate events and states in time in all languages despite each language has its own linguistic form (Smith & Erbaugh, 2005). Information about temporality can be coded by adverbial, tense, and aspect. Among them, tense and aspect are the most important grammatical systems for expressing temporal concepts in the world's language (Li & Shirai, 2000).

_Tense and aspect_

According to Comrie (1976), tense ‘relates the time of the situation referred to some other time, usually to the moment of speaking’ (1976: 1-2). On the other hand, aspect is related to ‘the internal temporal constituency of the one situation’ (Comrie, 1976: 5). English is a tensed language, for example, ‘She dressed beautifully.’ The suffix _–ed_ indicated that the act takes place in the past, i.e. before the speech time. In Cantonese, no marking is needed to show temporal meaning in the verb phrase, for example, 媽媽食飯 _ma4ma1sik6faan6_ ‘Mother eats rice’. There is no marking and no reference to speech time, and Cantonese is known as a tenseless language (Smith & Erbaugh, 2005). However, aspectual factors play an important role in giving temporal interpretation of sentences.

Aspectual systems have two components according to Smith’s two-component theory (1997): situation aspect and viewpoint aspect (see Appendix A).

Situation aspect is related to temporal properties of states or events that are denoted by verbs. The situation aspect can be distinguished by the following temporal properties:
The use of aspect dynamism, durativity and telicity (Smith, 1997). Dynamism denotes that energy is needed for the situation to exist or continue. Events are dynamic while states are static. Durativity denotes that the event takes time. Durative events take time while punctual events occur within a very brief period of time. Telicity denotes that there is an inherent endpoint. Telic events indicate the goal of the event; the event is completed once the goal is reached. On the contrary, atelic events do not state the goal and they are known as processes. Smith (1997), incorporating Vendler’s (1967) classification, classified verbs into five situation types: (1) state, encodes situation as static and without endpoints (e.g. 知道 zi1dou6 ‘know’), (2) activity, encodes situation which has duration without an inherent endpoint (e.g. 跑 pau2 ‘run’), (3) accomplishment, encodes situation which has duration and a natural endpoint (e.g. 跑一里 pau2jat7lei5 ‘run a mile’), (4) achievement, encodes situation as punctual with a natural endpoint (e.g. 贏比賽 jeng4bei2coi3 ‘win a game’), and (5) semelfactive, which encodes situation as punctual without an inherent endpoint (e.g. 敲 haau1 ‘knock’). Table 1 summarized the properties of each situation aspect (adapted from Smith, 1997, p. 20):

Table 1. Five categories of situation aspect characterized by temporal properties

<table>
<thead>
<tr>
<th></th>
<th>State</th>
<th>Activity</th>
<th>Accomplishment</th>
<th>Achievement</th>
<th>Semelfactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dynamic</td>
<td>−</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Durative</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>−</td>
<td>−</td>
</tr>
<tr>
<td>Telic</td>
<td>−</td>
<td>−</td>
<td>+</td>
<td>+</td>
<td>−</td>
</tr>
</tbody>
</table>
Viewpoint aspect is related to the temporal perspective taken by the speakers. There are three types of viewpoint aspect in Mandarin and Cantonese: perfective, imperfective and neutral (Smith, 1997). Perfective viewpoint gives explicit reference to the starting and ending of situation while imperfective viewpoint does not (Comrie, 1976). The use of aspect markers is optional in both Mandarin and Cantonese (Matthews & Yip, 1994; Smith, 1997). A clause without a viewpoint morpheme has neutral viewpoint and it allows flexible interpretation for the situation. Viewpoint aspects are marked by aspect markers. Cantonese has six aspect markers: (1) *zo2* (咗), a perfective aspect used to report a completion, (2) *gwo3* (過), a perfective aspect that states the experience which is not longer hold, (3) *gan2* (緊), a progressive aspect which applies to ongoing events only, (4) *zyu6* (住), a durative aspect which describes a continuous activity or state without change, (5) *hoi1* (開), a habitual aspect that denotes customary habit, (6) *haa5* (吓), a delimitative aspect. Both *zyu6* and *gan2* are imperfective aspect markers (Matthews & Yip, 1994). There are four aspect markers in Mandarin. Table 2 compares aspect markers in Mandarin and Cantonese (modified from Matthews & Yip, 1994).

Table 2. Aspect markers in Mandarin and Cantonese

<table>
<thead>
<tr>
<th></th>
<th>Perfective</th>
<th>Progressive</th>
<th>Continuous</th>
<th>Experiential</th>
<th>Delimitative</th>
<th>Habitual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mandarin</td>
<td><em>le</em> (了)</td>
<td><em>zai</em> (在)</td>
<td><em>zhe</em> (着)</td>
<td><em>guo</em> (過)</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Cantonese</td>
<td><em>zo2</em></td>
<td><em>gan2</em></td>
<td><em>zyu6</em></td>
<td><em>gwo3</em></td>
<td><em>haa5</em></td>
<td><em>hoi1</em></td>
</tr>
</tbody>
</table>
In the following sentence, 媽媽食緊飯 ma4ma1sik6gan2faan6 ‘Mother eat ASP rice’, 食 is the situation aspect while 緊 is the aspect marker that marked the viewpoint aspect. There are constraints in combining situation and viewpoint aspects. For situation with an end result for a very brief period time (i.e. achievement), one can only comment on it after its ending. For example, 他在贏比賽 ta zai ying bi sai (he ASP win a game) is semantically incorrect, thus, achievement cannot combine with imperfective aspect (Li & Shirai, 2000).

*Theoretical accounts on acquisition of aspect*

There are a number of perspectives explaining the acquisition of aspect. Since prototype theory was one of the most frequently discussed theories, it was explained in details below.

Prototype theory is based on the work of Rosch, as cited in Smith (1997). Rosch stated that all members of a category bear a family resemblance. Central exemplars of the category contain more characteristics properties than those marginal ones. Take an example, members of ‘bird’ can fly and have wings. Sparrows are better exemplars than penguins for this category as only sparrows can fly. Since sparrows have more properties for the category, they are central exemplars, which are also known as the prototypes of the category. Applying the prototype theory into linguistics, Shirai and Andersen (1995) proposed that there is a strong initial association between perfective with resultative verbs, which are members of achievement, and accomplishment in early language acquisition. They explained that it was because of the detection of prototypical meaning for perfective markers. Both achievement
and accomplishment verbs indicated an endpoint, which fit with perfective aspect as both of them indicate the ending of events. Thus, for combination with perfective aspect, achievement and accomplishment are the prototypes. Other situation aspects, state, activity and semelfactive are non-prototypes. For progressive aspect, activity is the prototype of the progressive category. Since achievement and state cannot be combined with progressive aspect, only semelfactive and accomplishment are called the non-prototypes (Li & Shirai, 2000). Children are believed to acquire linguistic category starting with prototype of category and then expand its application to less prototypical cases. Prototype theory was used to explain the development of aspectual system in English (Shirai & Andersen, 1995) and Japanese (Rispoli, cited in Li & Shirai, 1981). This study investigated whether this account can explain the development of aspectual system for Cantonese-speaking children.

**Aspect in narrative**

Temporal forms are used differently in different type of speech events (Shirai et al., 1998). A narrative requires foregrounding and backgrounding of events, and thus allows indication of temporal relations between states and events. Shu (2004) stated that narratives require organizing events in an aspectual way by its nature. A mature narrative has temporal linkages to link story elements to the central theme (Applebee, 1978). Thus, narrative is more likely to facilitate the use of aspectual system to express temporal information than conversation.

Besides, narrative is better than conversation in controlling the theme of production for
fair comparison among subjects. It is because pictures provided for each subjects will be the same for fictional narrative (Shirai et al., 1998). Different topics chosen by different subjects in conversation influence the use of aspect markers, leading to difficulties in achieving fair comparison among subjects.

*Research on aspect*

A longitudinal study which observed a Cantonese-speaking child from 21 to 45 months old revealed that the perfective marker *zo2* was the first one acquired in conversation, followed by imperfective markers *zyu6* and *gan2* (Leung, 1995). Tam (2002) discovered that Cantonese specific language impairment (CSLI) children had persistent constraint in applying grammatical aspect across verbs in conversation. Besides, CSLI children showed less facility in using aspectual forms in both video narration and conversation tasks than age-matched peers, despite they had similar ability in encoding aspect in repetition task (Stokes & Fletcher, 2003). In addition, CSLI children had more severely restricted deployment of aspect markers than language-matched children in conversation and narrative (Stokes & Fletcher, 2000). Furthermore, CSLI children were less likely to produce both perfective and imperfective aspect markers than typically developing children in elicitation task (Fletcher *et al.*, 2005).

Berman and Slobin (1994) reported that the use of –*ing* form declines in narrative while the use of other morphemes increase with age for English-speakers. Shu (2004) conducted a cross-sectional study to investigate the use of aspect markers in fictional narrative for
Mandarin-speakers. She studied three of the four aspect markers in Mandarin (zai, zhe and le) and found that the use of zai (progressive aspect) declines with age while the use of zhe (durative aspect) and le (perfective aspect) increases. Her findings are similar to Berman and Slobin’s study, i.e. developmental changes occurred in the use of aspect markers in narrative.

**Limitations of previous studies on acquisition of aspect**

Apart from Stokes and Fletcher’s study (2003), investigation of aspect using narrative is rare. The uses of aspectual marking in early parent-child interaction are different from the later uses of the same marking in narratives (Berman & Slobin, 1994). Hence, findings in narrations will give more information about the acquisition of aspect.

The Stokes and Fletcher’s study (2003), however, did not give information about developmental changes in narration. Acquisition of aspect markers were studied by Leung (1995) using conversation, however, his study ceased at 45 months old of the child. Shu (2004) and Berman and Slobin (1994) had proved that there were developmental changes during the preschool years (i.e. before age 6) in the use of aspect in narration in Mandarin and English respectively. It is hypothesized that Cantonese will show similar trends in aspect usage. This study explores the developmental changes for using the aspectual system.

Besides, studies on the use of aspect for children with language problems mainly focused on CSLI children. It is worth investigating to see if children with other language problems like language delay encounter similar difficulties in learning to use aspect. Children with SLI
have fast mapping deficit and morphological weakness but not language-delayed children (Ratner, 2001). Despite this, it is hypothesized that, like CSLI children, language-delayed children lag behind typically developing children in the distribution of aspect markers across different verb types and situation aspects because of poor language ability.

Since perfective and imperfective aspects have been investigated cross linguistically, only perfective and imperfective aspects (i.e. gan2, zyu6 and zo2) will be investigated in this study for the ease of comparison with other languages.

To sum up, this study investigated the following areas:

1. How does the use of aspect markers in narrative differ in frequency among different age-groups of native Cantonese-speakers? More specifically, how does the distribution of aspect markers across different verb types and situation aspects change as age increases?

2. How does the use of aspect markers in narrative differ among typically developing children and children with language delay?

Method

Participants

A total of 129 subjects were recruited to participate in this research project. There were four age-groups, 3-, 4-, 5-year-old and adults. For 3-, 4- and 5-year-old groups, there were one typically developing (TD) group and one language-delayed (LD) group for each age group. Each group had 20 subjects except LD 3-year-old group which had 9 subjects.
For TD group, children scored at least 0.6 standard deviations below the mean for expressive language score of the Reynell Developmental Language Scales - Cantonese version (RDLS) (Reynell & Huntley, 1987). This criterion was modified from Fletcher et al. (2005) as expressive language score was used instead of receptive language score. For LD group, children scored lower than -1.25 standard deviations below the mean for expressive language score of the RDLS (Fey, 1986). All preschoolers were recruited randomly from three local kindergartens. All adults participants recruited were 18-year-old or above, and were local university students. In addition, all subjects recruited were born in Hong Kong, use Cantonese as their first language, had normal hearing ability, normal cognition and no significant medical history. Information of the participants was summarized in Appendix B.

**Materials and Procedure**

First, the case histories of children were collected in the form of a brief questionnaire filled out by their parents. Second, a standardized language test, RDLS (Reynell & Huntley, 1987), was carried out for preschool subjects. Third, a wordless picture book, ‘Frog, Where are you?’ (Mayer, 1969), was used to elicit fictional narratives. The subjects were presented with a story book and told to read with the following instruction: “Here is a story book about a boy, a dog and a frog. I would like you to read through it once and tell me the story.” (呢度有一本故事書，係關於一個男仔，一隻狗仔同埋一隻青蛙。我想你由頭到尾睇一次，然後講個故事俾我聽。). They were given enough time to read all the 24 pictures in the book.
After they finished reading, they were asked to tell the story in Cantonese with the book opened. The researcher made neutral comments throughout the task and the storytelling was tape-recorded.

Data coding and Measurements

The audiotapes of the storytelling were transcribed in Chinese characters. All spontaneous utterances produced by the subject were counted except the followings:

a) Repetition of the investigator’s production in previous turn.

b) Immediate self-repetition of the production in exactly the same way within one picture.

c) Utterances which are irrelevant to the picture.

There were three measures for this study, starting from a general usage of aspect markers to the distribution of aspect markers. The first measure was the percentage of aspect markers used. It was calculated by the number of aspect markers produced divided by the total number of verbs that could be modified by any aspect markers. Since functional verbs, such as 係 hai6 (is), could not be marked by any aspect marker, verbs of this subclass were excluded so as to avoid under-estimation of the use of aspectual forms (Tam, 2002). The second measure was the ratio of different verbs with aspect markers to different verbs used; it was calculated by the number of different verbs marked with an aspect marker divided by the total number of different verbs that could be modified by an aspect marker. The third measure was used to determine how the use of aspect markers was influenced by the situation aspect
of the verbs. It was calculated by the number of aspect markers with non-prototypes divided
by the total number of aspect markers used in the sample.

The coding method listed in Appendix C helps determining each situation aspect and was
mainly focused on the three semantic features of each semantic category (i.e. dynamism,
telicity and punctuality). The verbs that can be associated with the aspect markers will be
coded according to the categorization of Smith (1997). Besides, guidelines for encountering
some special constructions were listed in Appendix C.

Inter-rater reliability

Ten percent of transcription was randomly selected and coded by another rater. Cohen’s
kappa statistic was used to measure the agreement between the two raters: \( \kappa = 0.89, p < .05. \)

Results

The use of aspectual system was examined from two perspectives. The first part studied
the development changes for TD children using adults’ performance as a reference. The
second part compared the performance of TD and LD children.

The use of aspect markers in narratives among different ages

a) Percentage of aspect markers used

The means of the percentage for each aspect marker used in the samples by TD
preschoolers and adults are shown in figure 1. Among the three aspect markers, only \( zo2 \)
showed an increasing use with age. The other two aspect markers, \( gan2 \) and \( zyu6 \), did not
show developmental change of usage across age.

One-way ANOVA was carried out to investigate the age factor for the total percentage of aspect markers. The results indicated there were significant differences between different age groups \( F (3, 76) = 20.81; p < .01 \). The Tukey post hoc test indicated there were significant differences among age 3 and 5, age 3 and adults, age 4 and adults as well as age 5 and adults \( (p < .05) \). Figure 1 also shows the development change of the total percentage of aspect markers used in narratives. Despite that there was no significant difference between age 3 and 4 as well as age 4 and 5, the total percentage use of aspect markers increased with age.

**Figure 1.** The mean percentage for each aspect marker and total percentage of aspect markers used in typically developing children and adults

b) Ratio of different verbs with aspect markers to different verbs used

The results from one-way ANOVA for age factor indicated that there was significant difference between TD children and adults \( F (3, 76) = 11.83; p < .01 \). The Tukey post hoc test indicated there were significant differences between age 3 and adults, age 4 and adults, and age 5 and adults. Figure 2 shows the developmental trend of ratio of different verbs with
aspect markers to different verbs used. No significant difference was found among the children at different age groups despite that there was a gentle increase in the ratio between age 4 and 5. Adults group obtained a higher ratio because adults marked more different verbs when comparing with children groups. Adults group marked 16.8 different verbs with an aspect marker on average while children at 5-year-old marked 9.1 different verbs with an aspect marker on average.

![Figure 2. Mean ratio of different verbs with aspect markers to different verbs used in typically developing children and adults](image)

c) Aspect marker with non-prototypes

One-way ANOVA was carried out to investigate the age factor for the proportion of aspect marker with non-prototypes. The results indicated that there was significant difference between different age groups \( F(3, 76) = 7.56; p < .01 \). The Tukey post hoc test indicated there were significant differences between age 3 and 5, age 3 and adults, age 4 and 5 as well as age 4 and adults. Children at 5-year-old group performed like adults group as no significant difference was found between these groups. Table 4 shows the mean of proportion of each combination of aspect marker with non-prototype and total proportion of aspect
The use of aspect marker with non-prototype used across age. A higher proportion of aspect markers with non-prototypes were used with age increases. Besides, it was observed that progressive aspect marker gan2 emerged later than perfective aspect zo2 in non-prototypes.

Table 4. *Mean proportion of each non-prototype and total proportion of non-prototypes used in typically developing children and adults*

<table>
<thead>
<tr>
<th>Age group</th>
<th>Non-prototypes (activity / semelfactive / state) + zo2</th>
<th>Non-prototypes (semelfactive / accomplishment) + gan2</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;00</td>
<td>0.08</td>
<td>0.00</td>
<td>0.08</td>
</tr>
<tr>
<td>4;00</td>
<td>0.09</td>
<td>0.00</td>
<td>0.09</td>
</tr>
<tr>
<td>5;00</td>
<td>0.19</td>
<td>0.00</td>
<td>0.19</td>
</tr>
<tr>
<td>Adults</td>
<td>0.16</td>
<td>0.01</td>
<td>0.17</td>
</tr>
</tbody>
</table>

From the samples, zo2 was the most commonly used aspect marker in samples; therefore, combinations of zo2 with different situation aspects were further investigated. Figure 3 shows the mean of proportion of different situation aspects with perfective aspect marker zo2. Since no subject combined zo2 with semelfactive, this combination was not presented in the graph. The pattern of age 3 and 4 was similar whereas age 5 and adults had similar pattern. For all of the groups, zo2 with prototype was the dominant combination. The proportion of usage of zo2 with achievement and accomplishment decreased when children were at age 5. At the same time, the use of zo2 with activity increased and they started to combine zo2 with state.
Difference among typically developing children and children with language delay

Two-way ANOVAs (between-subjects designs) were carried out to see if there are interaction effect and/or main effect for the six preschoolers groups. Since the aim was to compare TD and LD children, and the effect of age factor was reported in previous session. Therefore, only main effect of language ability was presented below.

a) Percentage of aspect markers used

From the results of $2 \times 3$ two-way ANOVA, there was no interaction effect of age $\times$ language ability [$F (2, 103) = 1.77; p < .05$]. The main effect of language ability was statistically significant [$F (1, 103) = 29.58; p < .01$]. Further analyses were conducted using t-test for each age group to see if there were significant differences between TD and LD groups. Table 5 indicates comparisons for age groups 3, 4 and 5. The results showed that for all the three age groups (3, 4 and 5), TD children used significantly more aspect markers than LD children. By comparing the means for LD groups, there was increasing use of aspect markers across age, which had a similar growing pattern when comparing with TD group.
Table 5. *Comparison of mean of percentage of aspect markers used for preschool children*

<table>
<thead>
<tr>
<th>Age group</th>
<th>Typically developing group</th>
<th>Language-delayed group</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;00</td>
<td>26.54</td>
<td>14.08</td>
<td>3.02**</td>
</tr>
<tr>
<td>4;00</td>
<td>29.45</td>
<td>16.30</td>
<td>3.97**</td>
</tr>
<tr>
<td>5;00</td>
<td>33.32</td>
<td>27.66</td>
<td>2.25*</td>
</tr>
</tbody>
</table>

* p < .05, **p < .01

b) Ratio of different verbs with aspect markers to different verbs used

The results revealed from 2 × 3 two-way ANOVA indicated that there was no interaction effect of age × language ability [F (2, 103) = 0.87; p < .05] while language ability was a main effect [F (1, 103) = 23.83; p < .01]. Further analyses were conducted using t-test for each age group to see if there were significant differences between TD and LD groups (see Table 6).

The results showed that for age group 3, 4 and 5, TD children used significantly more

Table 6. *Comparisons of mean ratio of different verbs with aspect markers to different verbs used for preschool children*

<table>
<thead>
<tr>
<th>Age group</th>
<th>Typically developing group</th>
<th>Language-delayed group</th>
<th>T-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;00</td>
<td>0.35</td>
<td>0.18</td>
<td>3.32*</td>
</tr>
<tr>
<td>4;00</td>
<td>0.36</td>
<td>0.22</td>
<td>3.02**</td>
</tr>
<tr>
<td>5;00</td>
<td>0.42</td>
<td>0.34</td>
<td>2.13*</td>
</tr>
</tbody>
</table>

* p < .05, **p < .01
aspect markers than LD children. By comparing the mean for LD groups, there was increasing use of aspect markers with age increasing, which had a similar growing pattern when comparing with TD group.

c) Aspect marker with non-prototypes

The results of $2 \times 3$ two-way ANOVA showed that neither interaction effect age $\times$ language ability nor main effect was statistically significant ($p > .05$). Figure 4 compares the use of zo2 with prototypes and non-prototypes between TD and LD groups. The results of $2 \times 3$ two-way ANOVA indicated that no significant difference was found for each combination among TD and LD children ($p > .05$). From the graph, it shows that LD 5-year-old children did not combine zo2 with state while TD children at this age used this combination.

![Figure 4. Comparison for the mean of proportion of different situation aspects with zo2 for typically developing and language-delayed children](image)

Summary

For age groups 3, 4 and 5, significant differences were found in the total percentage of aspect markers used as well as in the ratio of different verbs with aspect markers to different
The use of aspect verbs used between TD and LD children. There was no significant difference among TD and LD children in the proportion of aspect markers used with non-prototypes.

Discussion

The use of aspect markers in narrative among different ages of native Cantonese-speakers

The analysis revealed that the total percentage of aspect markers usage increased with age. It can be explained by the fact that when children mature, they have better narrative skills. The development of narrative matures gradually in terms of linkage of story elements. For young children, they label and describe events without a central theme (Applebee, 1978). When children grow, they have a better ability in relating events around the core of narrative using temporal sequence. Moreover, it is more likely to focus on the initial boundary of the event for narrative than picture description (Shirai et al., 1998). Shirai and his colleagues reported that full acquisition of the temporal system involves flexibility in choosing ‘event construals’ or ‘perspectives on events’. Since older children are more likely to develop a well-formed structure for narrative, thus, they use more aspect markers to indicate temporal information. On the other hand, young children tend to comment on an immediate situation without planning for future reference, therefore, they are less likely to use aspect markers.

When the use of each aspect marker was analyzed individually, it was found that the use of zo2 increased with age while no developmental changes were found for zyu6 and gan2. The findings did not match with Berman and Slobin’s (1994) findings in English, which
reported that the use of progressive form –*ing* dominate for children at three-year-old and then decreased gradually. It can be explained by the difference of the aspeclual forms in English and Cantonese. In English, the progressive form can be applied to both past and present events. However, the progressive aspect marker *gan2*, has a more restricted use in Cantonese. It can only describe present ongoing events unless a past time adverb is used (e.g. 嚸陣時 *go2zun6si4* ‘at that moment’) (Matthews & Yip, 1994). Besides, the use of aspect is optional in Cantonese while it is obligatory in English. Therefore, the use of progressive form is less frequent in Cantonese than in English. In addition, current findings partially agreed with Shu’s study (2004) which investigated narrative in Mandarin. Both Shu’s study and this study suggested that the use of perfective aspect increases with age. Older children tend to use more perfective aspect for story telling as it helps maintaining the cohesion of story (Shu, 2004). For progressive aspect, Shu reported a decreasing trend of usage, however, no trend was found in this study. Despite the similarity in the aspect systems of Cantonese and Mandarin, different patterns for progressive aspect were found. The difference could be explained by the difference in language forms. Progressive aspect *zai* appears in a pre-verbal position while *gan2* is a post-verbal aspect marker (Smith & Erbaugh, 2005). In Cantonese, *hai2duo6* (喺度), which can occur in a pre-verbal position like *zai* in Mandarin, also had the meaning of ‘in the process of’ (see Appendix D for examples). Despite *hai2duo6* had an ambiguous meaning, which can be associated with place, it can be an alternative means of
describing ongoing action. It competes with gan2 in indicating progressive meaning, leading to a reduced use of gan2 in narrative (Chan, 1996).

To explore the distribution of aspect markers across different verb types, we measured the ratio of different verbs with aspect markers to different verbs used. Adults obtained a significantly higher ratio in comparison with children. By comparing the number of different verbs with aspect markers, adults marked nearly double the amount of different verbs of 5-year-old group. It indicated that adults were able to apply aspect markers to a higher proportion of different verbs that they used in story telling. Typically developing children at different age groups performed similarly as no significant difference was found. The results suggested that the development of applying aspect markers to a range of verb diversity was not obvious during the preschool years. Preschoolers did not seem to fully understand the relationship between situation and viewpoint aspects, resulting in limited deployment of the aspect markers across verbs (Stokes & Fletcher, 2003). Older children start to generalize the deployment to more different verbs which can be combined with aspect markers. Yet, the generalization to mark divergence of verbs had not completed in preschool years, leading to a gap between the performances of adults and children groups.

In the use of aspect markers with non-prototypes, young TD children tended to use aspect markers with prototypes as indicated by a low proportion of aspect markers with non-prototypes. They acquire a few very good example of combination of aspect marker with
verb and use them as central exemplars. They generalize the use of aspect marker to prototypes first as they share the same properties with the central exemplars (Shirai & Andersen, 1995). In order to study the distribution of aspect marker across different situation aspects across age, we focus on the imperfective aspect zo2 for further analysis because it is dominant in the samples for all of the age groups, and it has potential to combine with all situation aspects in Cantonese (Li & Shirai, 2000).

When the children increased in age, they were able to combine perfective aspect marker zo2 with non-prototypes more frequently. This finding matched with Shirai and Andersen’s (1995) study which investigated the acquisition of past morphology for English-speaking children. It showed that children extend the use of past tense to non-prototypes when they mature. It indicated that they were able to manipulate viewpoint aspect and situation aspect independently when they grow up (Stokes & Fletcher, 2003). According to the prototype theory proposed by Shirai and Andersen (1995), perfective aspect could combine with prototypes (i.e. achievement and accomplishment verbs) first, followed by activity verbs and finally state verbs. Our results showed that activity verbs with zo2 appeared at age 3 whereas state verbs with zo2 emerged later at age 5. This may be due to the fact that both activity verbs and accomplishment verbs have duration and are dynamic, while state verbs only have duration. State contains the least properties with the central exemplar, thus, children acquire this combination late. Furthermore, in the current study, there was no significant difference
among TD children at age 5 and adults. The results indicated that TD children at age 5 had
adult-like performance in using aspect marker with non-prototypes in narrative. They had the
ability to combine situation aspect and viewpoint aspect as flexibly as adults in narrative.

**Difference among typically developing and language-delay children in using aspect**

When total percentage of aspect markers used was measured, LD groups were found to
use significantly fewer aspect markers than TD peers. Similar with young TD children, LD
children tend to treat each scene as an isolated event, i.e. heap story (Applebee, 1978), and
they are less able to create connections using aspect markers than TD peers.

When the ratio of different verbs with aspect markers to different verbs used was studied,
the results showed that TD children had a higher ratio of different verbs with aspect markers
to different verbs used when comparing with LD children for each of the age groups. This
finding was similar to previous studies on CSLI children, showing that they used aspect
markers with fewer different verbs in the video-narration task than their age-matched peers
and language-matched peers (Stokes & Fletcher, 2000, 2003). This suggested that LD
children have more restriction in attaching aspect markers to verbs, relative to TD children.

Stokes and Fletcher (2003) reported that the use of restricted combination was one of the
strategies used by CSLI children. In this study, similar strategy was used by LD groups. LD
children tended to apply aspect markers to verbs that have a maximal semantic match, i.e.
achievement verbs and perfective aspect. 跌咗 *dit8zo2* ‘fallen’ and 唔見咗 *m4gin3zo2*
‘lost’, in which _dit8_ and _m4gin3_ are achievement verbs, were combinations that frequently appeared in the story telling of LD children.

In addition, Stokes and Fletcher’s (2000) study reported CSLI children had a restricted range of verb types which were modified by aspect. Unlike CSLI children, LD children performed like TD children in combining aspect markers with non-prototypes as no significant differences were found. It suggested that LD children had similar ability in the deployment of aspect markers relative to TD children. In other words, language ability, as measured by RDLS, was not a major factor influencing the extension of aspect to different situation aspects. Other factors like special weakness on usage of grammatically morphemes and fast mapping deficit which CSLI children usually have are possible explanations for the limitation of extension use of aspect markers.

As discussed above, LD children lagged behind their age-matched peers in two out of the three parameters used in this study. There are four indicators for predicting whether LD children will have more sophisticated use of aspectual system: (1) frequency of using aspect markers comparing with adult, (2) range of diversity of verbs that can be combined with aspect markers, (3) independent use of situation and viewpoint aspects and (4) apply more than one type of aspect markers to the same verb (Stokes & Fletcher, 2000). The fourth predictor was not studied as current procedure did not elicit these combinations effectively. Language-delayed children seemed to have poor performance in (1) and (2). However, no
interaction effect for age × language ability was identified in the three measures used in this study; it proved that the development patterns for LD children and TD children were similar in all the aspects studied. Their performances had not yet reached a plateau. By comparing 5-year-old LD and 3-year-old TD children, it was noted that the means of total percentage of aspect markers used and the ratio of different verbs with aspect markers to different verbs used were similar. It could be concluded that LD children performed like younger TD children.

Implication of the Study

The current findings presented the developmental trend for Cantonese-speaking TD children in narrative. Clinically, it provided a reference for selecting treatment targets for expanding children's syntactic complexity in the area of aspect production. Besides, the data obtained for LD children indicated that they have weakness in applying aspect markers to new verbs flexibly and the use of aspect markers when comparing with age-matched peers. It provides directions in planning treatment goals if aspectual system is an area of concern.

Limitations and Further studies

Narrative tasks include fictional narrative, video sequence, story retelling and description of personal events (Hesketh, 2004). Different narrative tasks have different constraints. For example, static fictional narrative is less likely to elicit progressive aspect than dynamic video narrative. However, it requires less memory burden and reduces the burden of processing
The use of aspect capacities, optimal performance of children is likely to be obtained (Berman & Slobin, 1994).

In this study, only the use of aspectual system in fictional narratives was investigated. Other narrative tasks can be investigated so that we can obtain thorough information about the use of aspectual system in narratives.

Besides, pictures provided in fictional narratives may confine the choice of verbs, leading to difficulties in eliciting certain verb type like semelfactive verb. Experimental tasks, for example, by viewing a series of video clip with specific events, may elicit different situation and viewpoint aspects through controlling the videos.

It was noted that TD children did not have a complete grasp of Cantonese aspectual system during the preschool years. Therefore, further studies should involve primary school children so as to obtain a complete developmental trend in aspectual system in narrative. Besides, LD children increased in different areas of aspectual system like the total percentage of aspect markers used as TD children during the preschool years. It is worth tracing their development of aspectual system during primary years to see if there is a development plateau at a certain stage.

Apart from the developmental trends, error patterns can be investigated. It was noted that both syntactic and semantic errors were present for children’s narrative. Since it was outside the scope of this study, error patterns were not discussed. Further studies could focus on analyzing error patterns for children with different age and language ability.
References


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Appendix A

Tree diagram for Two-component theory of aspect (Smith, 1997)

Aspect

Situation aspect

Static

Dynamic

State

Durative

Punctual

Viewpoint aspect

Perfective

Imperfective

Neutral

Accomplishment

Activity

Achievement

Semelfactive

(1) Dynamic: consist of successive stages occur at different moment
(2) Durative: the events take time
(3) Telic: has a final endpoint

Static: consists of a single, undifferentiated period
Punctual: the events happen within a very short period of time
Atelic: does not have an endpoint, simply a process
### Table 3. Information of subjects

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of subjects (M / F)</th>
<th>Age range</th>
<th>Mean of age</th>
<th>Range of SD in RDLS expressive part</th>
</tr>
</thead>
<tbody>
<tr>
<td>LD 3;00</td>
<td>9 (3 / 6)</td>
<td>3;03 – 3;11</td>
<td>3;07</td>
<td>-3.00 – -1.30 SD</td>
</tr>
<tr>
<td>LD 4;00</td>
<td>20 (7 / 13)</td>
<td>4;00 – 4;11</td>
<td>4;06</td>
<td>-3.40 – -1.30 SD</td>
</tr>
<tr>
<td>LD 5;00</td>
<td>20 (6 / 14)</td>
<td>5;00 – 5;11</td>
<td>5;05</td>
<td>-3.40 – -1.35 SD</td>
</tr>
<tr>
<td>TD 3;00</td>
<td>20 (9 / 11)</td>
<td>3;01 – 3;11</td>
<td>3;06</td>
<td>-0.60 – 2.3 SD</td>
</tr>
<tr>
<td>TD 4;00</td>
<td>20 (10 / 10)</td>
<td>4;02 – 4;10</td>
<td>4;06</td>
<td>-0.60 – 0.8 SD</td>
</tr>
<tr>
<td>TD 5;00</td>
<td>20 (12 / 8)</td>
<td>5;00 – 5;10</td>
<td>5;06</td>
<td>-0.60 – 1.0 SD</td>
</tr>
<tr>
<td>Adults</td>
<td>20 (10 / 10)</td>
<td>20:00-29;00</td>
<td>23;10</td>
<td>---</td>
</tr>
</tbody>
</table>

Key:

LD: Language-delayed group

TD: Typically developing group
Appendix C

Steps taken to code situation aspect (step 1-2 were adopted from Shirai & Andersen (1995)).

1. Read a small subset of discourse until you are sure about the interpretation of the utterance being coded

2. Remove grammatical aspect marker from the utterance

3. Go through the Tree Diagram, according to the categorization of Smith (1997), to decide the situation aspect of the utterance

Tree Diagram

Key:

Dynamic: indicates that energy is needed for the situation to exist or continue

Durative: indicates the event takes time

Telic: there is an inherent endpoint for the event
The verb count used to derive the percentages was based on a few guidelines while encountering some special constructions:

- **Resultative verbs are counted as a single verb**
  
e.g. 男仔 擡起 咗 隻 鞋  
  lam4zai2 lo2hei2 zo2 ze3 hai4  
  Boy pick up ASP CL shoe

- **Reduplicative verbs are counted as a single verb**
  
e.g. 跑 跑 跑  
  paau2 paau2 paau2  
  run run run

- **Verbs in serial verbs construction are counted as separate verbs**
  
e.g. 男仔 爬 咗 上去 叫 佢  
  lam4zai2 paa4 zo2 soeng5heoi3 giu3 keoi5  
  Boy climb ASP up yell it

- **No two aspect markers can be used together (張洪年, 2007), the morpheme immediately after the verb will be considered as complement**
  
e.g. 男仔 握 住 咗 樹枝  
  lam4zai2 zuk7zyu6 zo2 syu6zi1  
  Boy hold COM ASP branch
Verbs with particles like *mou5* (無), *mei6* (未), and *m4* (唔) was not counted as they cannot be modified with an aspect marker except *mou5zo2* (無咗) and *m4kin3zo2* (唔見咗) (張洪年, 2007).
Appendix D

Below are examples for progressive aspect *zai* and *gan2*, and *hai2duo6*:

In Mandarin

1) 他在吃饭
   
   Ta zai chi fan
   
   He ASP eat rice
   
   (Progressive aspect marker *zai* appear pre-verbally)

In Cantonese

2) 佢食紧飯
   
   heoi5 sik9 gan2 faan6
   
   He eat ASP rice
   
   (Progressive aspect marker *gan2* appear post-verbally)

3) 佢喺度食飯
   
   heoi5 hai2duo6 sik9 faan6
   
   He HAI eat rice
   
   (*hai2duo6* appears appear pre-verbally)

*Noted that hai2duo6 had an ambiguous meaning, it can be interpreted as ‘in the process of’ or associated with place (Chan, 1996). When the speaker interprets *hai2duo6* as ‘in the process of’, *gan2* will be replaced by it.*
Acknowledgements

I would like to give my earnest gratitude to my supervisor, Dr. Leung Cheung Shing, for his valuable advice and guidance. I am grateful to the participants in the study. Besides, I devote my thanks to my friends and family for their support and inspiration.