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<td><strong>Other Contributor(s)</strong></td>
<td>University of Hong Kong.</td>
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<td><strong>Author(s)</strong></td>
<td>Wong, Miu-kuen, Ruby; 黃妙娟</td>
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Cantonese-speaking Children's Comprehension Strategies for Active and Passive Sentences

Wong Miu Kuen, Ruby

A Dissertation in partial fulfilment of the requirements for the Bachelor of Sciences (Speech & Hearing Sciences).

The University of Hong Kong. April 28, 1995.
Abstract

People use their knowledge of language and the world to comprehend sentences. This study asked how children used their linguistic and nonlinguistic knowledge in comprehension. Ninety children aged three, four, five, six and seven acted out meanings of twenty-four reversible and non-reversible active and passive sentences with toys. Three and four year old children showed significantly better performance in the non-reversible sentences. Thus, evidence showed that they used the contrast of animacy to work out semantic roles in sentences. They employed unsuccessful word order strategy for ambiguous non-reversible passive. Five years old children responded according to the syntactic forms and relied few on nonlinguistic knowledge. They consistently used word order strategy and made consistent errors in both reversible and non-reversible passive. Children showed mastery of the passive sentences at age six and seven. The shift away form strategies based on world knowledge to more decontextualized, linguistic approaches to language processing parallels other development in child’s processing repertoires. These included the development in cognitive, linguistic and metalinguistic knowledge.
Introduction

Need of Linguistic and Non-linguistic Knowledge in Sentence Comprehension

To comprehend sentences, we use our knowledge of syntax, semantics and pragmatics to interpret meanings. Listeners use the information or cues in sentences to sort out which is the agent and which is the recipient. These cues include: word order, animacy and S-V agreement in English (Taylor and Taylor, 1990). For correct interpretation, we make use of these cue by our knowledge of linguistics and non-linguistic. Our linguistic and non-linguistic knowledge govern the use of these cues to attain correct interpretation.

For instance, when we comprehend the sentence 'John buys the books', how can we know that the actor is 'John' but not 'books'? Firstly, we may apply the sequence of actor-action-recipient for the canonical form of noun-verb-noun in English. Also, the third person singular subject 'John' agrees with the verb 'buys'. Our semantics knowledge codes 'John' as [+ animate] and 'books' as [- animate]. From our world knowledge, it is more probable for an animate object to perform actions on an inanimate one than the reverse. All these cues indicate that the first noun 'John' is the actor.

Comprehension Strategies

Children's sentence comprehension was extensively investigated in the past twenty years. There was cumulative
evidence showing that before children have full mastery of the knowledge of the linguistic system which is needed to interpret the cues in sentence, they employ comprehension strategies (Harris and Coltheart, 1986; Paul, 1990).

What are Comprehension Strategies? "A comprehension strategy is a shortcut, heuristic, or algorithm for arriving at the meaning of a sentence without full marshalling of the information in the sentence and one's linguistic knowledge" (Chapman, 1977). Comprehension strategy serves as a device to make sense out of language before complete linguistic processing is achieved (Paul, 1990). Thus, it will sometimes yield the incorrect interpretation. Comprehension strategies play an important role in children's apparent successes as listeners in the early years of life; they continue to play such a role in children's response to more complex constructions, like relative clauses and conjoined sentences, in school-age years (Chapman, 1988). These strategies derive from children's ability to integrate world knowledge with their developing capacity for processing words and sentences and the strategies change as more linguistic skills are developed (Paul, 1990).

Lack of Studies in Cantonese-speaking Children

Comprehension strategies were studied extensively in the past because it gives implications about the children's internal processing systems and their knowledge base (Carrow-Woolfolk, 1988). There were numerous studies evidenced the use and developmental change of comprehension
strategies by English-speaking children (Bever, 1970; Chapman, 1977; Chapman and Kohn, 1978; Strohner and Nelson, 1974). Other studies also revealed use of comprehension strategies in children speaking different languages, like German, Hebrew, Italian & Japanese (Bates, MacNew, MacWhinney, Devescovi and Smith, 1982; Bates, MacWhinney, Casilli, Devescovi, Natalie and Venza, 1984; Bates and Slobin, 1982; Frankel and Arbel, 1981; MacWhinney, Bates and Kliegl, 1984). There were a few studies in Mandarin and Cantonese-speaking children (Chang, 1986; Miao, Chen and Ying, 1984; Ng, 1994). The present study was aimed at seeking preliminary information about the development of comprehension strategies in Cantonese-speaking children.

Studies in English-speaking Children

Previous studies commonly employed passive sentences for the study of children’s comprehension because of its reversed order of the agent and recipient. Its particular construction could reveal how children acquire word order rules that play major role in English syntax.

Use of Non-linguistic Knowledge Cumulative evidence showed a developmental primacy of semantic strategies than word order strategies. Children acquired non-reversible passive earlier than the reversible passive (Bever, 1970; Chapman and Kohn, 1978; Roberts, 1983; Golinkoff, Hirsh-Pasek, Cauley and Gordon, 1987). Bever (1970) explained the results of three-year-old children’s use of proper-event strategy. The contrast in animacy of the two nouns help the
child to eliminate the inanimate noun as the actor as it will against their internalized scripts of actions. Thus, the semantic non-reversible passive like 'The flower is being watered by the girl' was easy. The reversible with both animate nouns equal likely to be the actor makes the role assignment more difficult.

**Use of Word Order Strategy** Children by three and four years of age used canonical word-order strategy (Bever 1970). Children applied actor-action-recipient sequence for noun-verb-noun in reversible passive in which they could not apply the probable event strategy. There were systemic mistakes in the reversible passive sentence found in children in three and four year-old. For instance, when the children were given a sentence like 'The car was pushed by the truck', they made the cat push the truck. She explained it as use of word order strategy from generalization of abstract rule that noun-verb-noun refer to actor-action-recipient for active sentences.

At the later stage of development, theses syntactic strategies of word order overcome the semantic strategy (Bever, 1970; Keller-Cohen, 1987). Children rely too much on the word order strategy leading incorrect interpretation in passive sentences.

**Studies for Mandarin-speaking Children**

There were different findings in Mandarin-speaking children. By analyzing children's response patterns in
comprehending passive and active sentences, there was no overuse of noun-verb-noun strategy (Chang, 1986). Mandarin-speaking children depended mainly on the semantic knowledge in comprehension except in the age from five to seven (Miao, Chen and Ying, 1984).

**Studies for Cantonese-Speaking Children**

Studies on comprehension strategies used by Cantonese speaking children are limited. Ng (1994) studied children's acquisition of simple active sentences and showed that children from three-year-old onward give responses based on word-order strategy.

**Present Study**

The author is interested in how world knowledge and linguistic knowledge influence children's performance on sentence comprehension. The investigation was on Cantonese-speaking children's comprehension of active and passive sentences. The aim was to answer the following questions:

- Do children use world knowledge in comprehension?

Young children's dependence on semantic and pragmatic knowledge in comprehension was evidenced in different languages such as Mandarin and Italian (Bates, MacWhinney, Caselli, Devescovi, Natale and Venzaet. al., 1984; Chang, 1986). There was a universal in language acquisition that there was a developmental primacy of semantic strategies than word order strategies (Bates, MacWhinney, Caselli, Devescovi, Natale and Venza, 1984).
Similar dependence on the semantic strategies was expected in the Cantonese sentence. How do children respond to different syntactic structures? Will they employ word order strategy? Table 1 shows the comparison of the English and Cantonese active and passive sentences. Both Cantonese and English have canonical form of noun-verb-noun for actor-action-recipient in the simple active sentences. Comprehension of passive sentences was more difficult than the active because of children need to perform the cognitive process of transformation during interpretation of passive sentences. Cantonese-speaking children were expected to acquire active sentence before the passive sentence. Similarly, the orders of case roles were revered in active and passive constructions in both languages. According to Ng (1994), Cantonese-speaking children showed word order knowledge of noun-verb-noun as young as the age of three. Children at this age might start generating word order strategy and make consistent reversal mistakes in assigning case roles when comprehending passive sentences. How does sentence comprehension skills change across age? Use of comprehension change across age as their cognitive and linguistic knowledge increase. Change was also expected for Cantonese-speaking children.
**Table 1**

**Comparison of the active and passive contractions in English and Cantonese**

<table>
<thead>
<tr>
<th></th>
<th>English</th>
<th>Cantonese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ACTIVE SENTENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>* Example</td>
<td>The bear kicks the table.</td>
<td>熊仔 踢 檔仔 the bear kicks the table</td>
</tr>
<tr>
<td>*Order of case roles</td>
<td>Actor</td>
<td>Action</td>
</tr>
<tr>
<td></td>
<td>Action</td>
<td>Recipient</td>
</tr>
<tr>
<td>*Case marker</td>
<td>Absent</td>
<td></td>
</tr>
<tr>
<td>*Subject-verb agreement</td>
<td>Present</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>PASSIVE SENTENCE</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>*Example</td>
<td>The table was kicked by the bear.</td>
<td>檔仔 僭 熊仔 踢 the table bei the bear kick</td>
</tr>
<tr>
<td>*Order of case role</td>
<td>Recipient</td>
<td>Verb</td>
</tr>
<tr>
<td></td>
<td>Actor</td>
<td>Action</td>
</tr>
<tr>
<td>*Case marker</td>
<td>Absence</td>
<td></td>
</tr>
<tr>
<td>*Subject-Verb agreement</td>
<td>Present</td>
<td></td>
</tr>
</tbody>
</table>

When will children correctly comprehend the passive construction?

Referring to Table 1, it shows that English passive was marked more clearly than the Cantonese because of the use
of subject verb agreement and the by-phrase. Cantonese syntax was more flexible and the same meaning can be denoted even when the marker was omitted. Thus, Cantonese passive was expected to be acquired later as compared to the English passive.

Method

Subjects

Ninety native Cantonese-speaking children from two local kindergartens and two local primary schools participated in the study. They were reported to have normal speech, language, hearing and intellectual abilities. Equal numbers of boys and girls were assigned into five groups in Table 2.

Table 2

Summary Information of the Subject groups

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Age Range</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3:03 - 3:05</td>
<td>3:04</td>
<td>0.71</td>
<td>18</td>
</tr>
<tr>
<td>4</td>
<td>4:01 - 4:06</td>
<td>4:04</td>
<td>1.35</td>
<td>18</td>
</tr>
<tr>
<td>5</td>
<td>5:02 - 5:05</td>
<td>5:04</td>
<td>1.08</td>
<td>18</td>
</tr>
<tr>
<td>6</td>
<td>6:01 - 6:06</td>
<td>6:04</td>
<td>1.64</td>
<td>18</td>
</tr>
<tr>
<td>7</td>
<td>7:01 - 7:06</td>
<td>7:04</td>
<td>1.17</td>
<td>18</td>
</tr>
</tbody>
</table>
Stimuli

A total of twenty-seven sentences were used. Three of them were instructional and twenty-four were experimental. Each of the sentences include an actor, a recipient and an action. All the sentences are five or six syllables in length.

Experimental Sentences There were four types of experimental sentences which were devised by variation of the voice (active and passive) and reversibility (reversible and non-reversible) of sentences.

1. Non-reversible active

   e.g. 马子 踢 桌子
   Horse kick table
   'The horse kicks the table.'

2. Reversible active

   e.g. 马子 踢 熊子
   Horse kick bear
   'The horse kicks the bear.'

3. Non-reversible passive

   e.g. 桌子 俾 马子 踢
   Table by horse kick
   'The table is kicked by the horse.'

4. Reversible passive

   e.g. 熊子 俾 马子 踢
   Bear by horse kick
   'The bear is kicked by the horse.'
Six replications of each sentence types were created through random assignment of appropriate lexical items into the sentence frameworks. Three non-aggressive animals (bear, horse and dog) and two objects (table and apple) that were common in children's world knowledge were selected. Three action verbs (kick, push and bite) were used for their distinct actions for the act-out procedure. All the sentence stimuli are shown in Appendix.

**Instructional sentences**

Three training items of non-reversible active sentences were used for illustration of the task and test of subjects' comprehension of the three action verbs.

**Toys and props**

Toy animals and props of relatively the same size corresponding the animals and objects in sentences stimuli were used.

**Procedure**

The subjects were tested individually in quiet rooms in the kindergartens or schools. In the beginning, the experimenter introduced the toys one by one and encouraged the subjects to play with them. Pre-test was administered to ensure the subjects can recognize all the toys. The subjects had to point to the toy animals said by the experimenter. Then, they were told to act out what the experimenter had said. In the three warm-up sentences, the subjects would be asked to perform three actions. The test
would terminate if the subjects failed to either recognize the animals or acting out the three actions.

In order to eliminate the cognitive demands in selecting toys, only the two toys relevant for the specific sentences were placed in front of the subjects before each trial. The experimenter placed the toys in a random manner to eliminate the effect of use of position preference that young children might use. Stimuli were repeated if the subjects requested. The whole test lasted for about twenty minutes.

Scoring

Subjects' responses were recorded into three categories: (1) Correct means correct interpretation; (2) Incorrect means reversal of semantic roles; and (3) Others means other responses, for instance no response, "don't know" or using self as actor.

Results

1. Overall Performance

Table 3 summarizes the overall percentage scores of each age group. It shows that children aged six and seven had the highest score followed by the three and four years old. The five-year-olds performed the worst in the test.
Table 3

Mean Percentage Scores of Five Age Groups

<table>
<thead>
<tr>
<th>Age group</th>
<th>Percentage Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>77.50%</td>
</tr>
<tr>
<td>4</td>
<td>78.96%</td>
</tr>
<tr>
<td>5</td>
<td>67.08%</td>
</tr>
<tr>
<td>6</td>
<td>92.04%</td>
</tr>
<tr>
<td>7</td>
<td>91.58%</td>
</tr>
</tbody>
</table>

1. Effects of age, voice, reversibility and their interactions

Figure 1 shows the percentage scores in the four sentence types. The two active sentences were relatively easy while the most difficult one was the reversible passive. Table 4 shows the results of analysis of variance. Analysis of variance shows significant effects and interactions of age, voice and reversibility.

![Figure 1](chart.png)

**Figure 1** Percentage Score of Accuracy in Four Sentences Types
Table 4

Effects of age, voice, reversibility and their interactions

<table>
<thead>
<tr>
<th>Main effects/Interactions</th>
<th>df</th>
<th>df</th>
<th>F</th>
<th>p-level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>4</td>
<td>85</td>
<td>14.04</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Voice</td>
<td>1</td>
<td>85</td>
<td>148.40</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Reversibility</td>
<td>1</td>
<td>85</td>
<td>109.47</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age x Voice</td>
<td>4</td>
<td>85</td>
<td>16.56</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age x Reversibility</td>
<td>4</td>
<td>85</td>
<td>8.84</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Voice x Reversibility</td>
<td>4</td>
<td>85</td>
<td>68.85</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Age x Voice x Reversibility</td>
<td>4</td>
<td>85</td>
<td>5.75</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>

3. Effect of Reversibility

Figure 2 shows the percentage scores of accuracy in reversible sentences compared with non-reversible sentences.
Non-reversible sentences were generally easier. When the accuracy in the two sentence types within each age group were compared using the post-hoc Scheffe test, significant difference in performance \( (p < .001) \) of the three and four-years-old group were found. It shows that children aged three and four have better understanding as there was only one pragmatically probable actor in the non-reversible sentences.

4. Effect of syntactic form

To reveal the effect of syntactic form, scores in reversible active and passive were compared (Graph 3).

One-way analysis of variance revealed effects of age \( F(4,85) = 15.51; p < .0001 \) and syntactic form \( F(1.85) = 193.74; p < .0001 \) and their interaction \( F(4.85) = 14.58; p \)
Results of Scheffe test show that subjects aged three ($p < .05$), four and five ($p < .001$) scored significantly higher in reversible active sentences.

5. Individual Response Patterns

Table 5

**Frequencies and Response Patterns**

<table>
<thead>
<tr>
<th>Response Patterns</th>
<th>Number of Children (n=18)</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversible Active: Full knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversible Passive:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full knowledge</td>
<td></td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>12</td>
<td>11</td>
<td>$X^2 = .284$</td>
</tr>
<tr>
<td>Partial knowledge</td>
<td></td>
<td>7</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>6</td>
<td>df = 8</td>
</tr>
<tr>
<td>No knowledge</td>
<td></td>
<td>2 $^<em>$11 $^</em>$13</td>
<td>2</td>
<td>1</td>
<td></td>
<td>$p = .0000$</td>
<td></td>
</tr>
<tr>
<td>Reversible Active: Partial Knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversible Passive:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full knowledge</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$X^2 = .249$</td>
</tr>
<tr>
<td>Partial knowledge</td>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>df = 1</td>
</tr>
<tr>
<td>No knowledge</td>
<td></td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>$p &lt; .001$</td>
</tr>
<tr>
<td>Reversible Active: No knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reversible Passive:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full knowledge</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Partial knowledge</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>No knowledge</td>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Note: Full knowledge = correct interpretation in 6/6 or 5/6
Partial knowledge = correct interpretation in 4/6 or 3/6
No knowledge = reversal of semantic roles in 5/6 or 6/6
Table 5 summarizes the response patterns in comprehending reversible active and passive sentences for each age group. It shows that there were significant numbers of four and five year old subjects consistently understood active sentence but reversed the semantic roles in the passive. They consistently treated the first nouns in sentences as actors regardless of the difference in word order, but not the syntactic roles.

6. Effect of reversibility in passive sentences

To show the effect of reversibility for comprehension of passive sentences, scores in reversible and non-reversible passive sentences were compared in Figure 4.
Analysis of variance shows the effects of age $F(4, 85) = 17.11; \ p < .000$, reversibility $F(1, 85) = 103.61; \ p < .000$ and their interaction $F(4, 85) = 8.09; \ p < .000$ were significant. The results of Scheffe test shows that non-reversible passive was significantly easier for three and four-year-old subjects ($p < .000$). It shows that four-year-old children are less susceptible to choose the first noun but use the contrast in animacy to comprehend non-reversible passive. However, five-year-old children did not make use of the contrast.

Discussion

1. Three Stages in Development of Comprehension Skills

Compared with the study by Ng (1994), similar results are obtained. Three-year-old children employed their word order knowledge in comprehending simple actives. Children in all age group had good accuracy in both the reversible and non-reversible active sentences.

Examining the performance in passive sentences, three stages of development of comprehension skills showed in children aged from three to seven.

STAGE 1: Three and four years old. Children firstly rely on their world knowledge and use the contrast of animacy to work out the semantic roles in the non-reversible passive. Even for the reversible passive which is ambiguous because of the equal plausibility for both nouns as actors, they employ the word order strategy. Hence, they
consistently perform poorly in comprehension of reversible passive sentences.

Stage 2: Five years old. Children responded according to the two syntactic forms and give significant differently accuracy in active and passive sentences. They rely on the word order strategy rather than the world knowledge and animacy. They apply the word order strategy to both reversible and non-reversible passive sentences even regardless of the animacy cues in the non-reversible passive sentences. They show over-reliance of the syntactic cue.

Stage 3: Six and seven year old. Children show good mastery of both active and passive sentences and showed good comprehension for all four sentences types.

2. Universal in Language Acquisition?

The present study gave some similar findings as compared to those in English-speaking children. It confirmed development of comprehension strategies across age in Cantonese-speaking children. There was the developmental primacy of the semantic strategies. Moreover, they correctly comprehend active sentences before the passive. Word order strategy was devised in the course of comprehension development to augment their partial linguistic knowledge. Children actively generate rules in their acquisition of language. They can comprehend passive correctly until six years old.
3. Hypothetical Explanations for the Development of Comprehension Skills

Children's development of comprehension skills may be explained by other parallel changes in the processing repertoires. These include the development in cognition, linguistic and metalinguistics.

**Cognitive Development.** With limited cognitive processing capacity, young children can only attend to limited features of language which are most salient (Slobin, 1973). This explains why young children focus on contrast of animacy during comprehension.

In the Piagetian theory, children aged six and seven transits from the pre-operational stage to concrete operational stage. In the pre-operational stage, children lack reversibility and are self-centred. This lack of reversibility may hinder children in comprehending the passive form in which the recipient is made focus in the sentence (Matthew and Yip, 1994). At the concrete operational stage children decentralize and start thinking of an event from different perspectives. This cognitive ability develop in parallel with children in stage three who show good comprehension in passive.

**Linguistic Knowledge.** Children devise the word order strategy for new and unknown syntactic structure. Children get continuous success by assigning the first nouns as actors in active sentences which they usually come across in daily life. Because of their overgeneralisation of
linguistic knowledge from simple active sentence, children tend to interpret the first noun as actor when applying the word order strategy. When acquiring new syntactic forms, children use some of the knowledge based on his existing linguistic knowledge (Harris and Coltheart, 1986).

As children's linguistic knowledge develops, they noticed the new passive syntactic form. They apply the word order strategy consistently to this new syntactic form to constrain interpretation. They put apply the rules on trial and devise new ones if these rules were not valid. Finally, they have devised a set of rules which give them consistent success and reinforcement. These rules were then retained and to-be-used by the children.

Meta-linguistic knowledge. Children aged four and five give syntagmatic response through word association. For example, they will say 'run' when presented with 'dog'. Until age six to seven, they shift to give paradigmatic response (Gleason, Pan and Pease, 1989; Israel, 1984). Children aged five may focus on the syntactic relation of words. Their awareness to the difference in two syntactic forms may drive them to apply the word order strategy when attempting to comprehend the passive sentences.

Kleeck (1982) states that children in the preoperational stage focus on only one aspect of a linguistic form. They focus either on the syntactic form or the meaning denoted in the sentences. However, as they pass to the concrete operational stage, they are capable of
manipulating linguistic form and retaining the semantic information at the same time. Children at this stage become aware that an active sentence and its passive counterpart both denote the same single event. This metalinguistic performance correlates with their high accuracy in interpreting passive sentences at the age of six and seven.

Conclusion

To conclude, this study gives preliminary information about the developmental change in comprehension strategies that Cantonese Speaking children use. Hypothetical explanations to the change focus on the parallel development of their processing repertoires and the comprehension skills were given. Figure 5 summarizes how children develop their comprehension strategies then in parallel with their development in processing repertoires including non-linguistic, linguistic and metalinguistic knowledge.
PROCESSING REPERTOIRES

1. NONLINGUISTIC
   linguistic
   metalinguistic

2. nonlinguistic
   LINGUISTIC
   metalinguistic

3. nonlinguistic
   LINGUISTIC
   METALINGUISTIC

(Adapted from Kleck, 1994; p.89)

COMPREHENSION SKILLS

Stage 1: 3 & 4 years old
- use of world knowledge
  (contrast of animacy)
- augment by word order strategy
  ✓ non-reversible active
  ✓ reversible active
  ✓ non-reversible passive
  ✗ reversible passive

Stage 2: 5 years old
- over-reliance of word order strategy
  ✓ non-reversible active
  ✓ reversible active
  ✓ non-reversible passive
  ✗ reversible passive

Stage 3: 6 & 7 years old
✓ non-reversible active
✓ reversible active
✓ non-reversible passive
✓ reversible passive

Figure 5. Parallel Development of Comprehension Strategies and Processing Repertoires.

Clinical Implication
When assessing children's comprehension skills, clinicians need to be careful in planning and take into account the
current cognitive level and the possible comprehension strategies used. What children understand may be assessed using paraphrase and demonstration.

During remediation program, clinicians should be sensitive to children’s dependence on the non linguistic, linguistic and metalinguistic knowledge and provide multiple cues based on normal developmental sequence. Contextual support geared to children’s level of comprehension skills is necessary. Moreover, comprehension strategies appropriate to children’s developmental level should be incorporated into the goals of remediation.

Limitation and Further Studies

The reason why children favour one comprehension strategy rather than another is an important focus for future research. Because of limited resource and studies on development of Cantonese-speaking children, the present study only hypothesized explanations for comprehension development across age. In the present study, children of equal age was assumed to have similar cognitive abilities that the individual difference of subjects was not accounted. To confirm the results, subjects might undergo tests to reveal their cognitive abilities before they are assigned to groups according to the different stages in the Piaget’s cognitive development.

Further studies may also extend to other populations. The strategies used by language-disordered children may
provide further information about children's disability and direction of intervention.

In addition, similar study using other stimuli will give further important information. Children's use of word order strategy in the absence of semantic cues may be further investigated by using carefully controlled stimuli such as two inanimate nouns. Sentence type of topicalization might be included.

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References


Appendix

Stimuli used in the Study:

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