Title
Differences between Covert and Overt Repairs in the Speech of Non-stuttering Young Children

Author(s)
TOKAIRIN, Eiji; ITO, Tomohiko

Citation
東京学芸大学紀要. 第1部門, 教育科学, 56: 335-339

Issue Date
2005-03-00

URL
http://hdl.handle.net/2309/2088

Publisher
東京学芸大学紀要出版委員会

Rights
Differences between Covert and Overt Repairs in the Speech of Non-stuttering Young Children

Eiji TOKAIRIN*, Tomohiko ITO**

Department of Education for Children with Handicap

(Received for Publication; October 29, 2004)

Introduction

The structure of self-repairs is shown in Fig. 1 (Levelt, 1983; p. 45). First comes the original utterance, followed by a moment of interruption. After the interruption, there is a pause of varying duration, which is often filled with such editing terms as "uh." Following this pause, the repair proper begins.

Self-repair has been said to manifest a planning error. Kolk (1991) and Kolk and Postma (1997) hypothesized that stuttering was a covert repair reaction to an abnormal phonetic plan. Their hypothesis is called Covert Repair Hypothesis (CRH). Kolk (1991) and Kolk and Postma (1997) hypothesized that the phonological encoding of stutterers is slower than that of normal speakers. They reported that normal children apparently developed their phonological skills fast enough to accommodate their growing communicative needs. However, they also indicated that stuttering children may develop these skills later. Stuttering typically emerges during preschool years, and in most children it disappears sometime before puberty. Kolk and Postma (1997) said that children whose phonological skills develop later would be those who recover; those who do not would become adult stutterers. Moreover, CRH views the phonological encoding of stutters differing only quantitatively, not qualitatively, from that of non-stutterers. This means that the encoding errors of stutterers are subject to the same factors as those of normal speakers.

If CRH is right, we need to study covert repairs in non-stuttering children systematically to better understand the onset and recovery from stuttering. However, the nature of covert repairs in non-stuttering children has not been studied in detail. In this study, we focused the relationship between covert and overt repairs in young non-stuttering children. According to CRH, covert repairs occur in close relationship to the phonological encoding or phonetic plan. If CRH is an appropriate hypothesis, it is natural to think that the phonological encoding or phonetic plan is thus
affected by linguistic units. Words and phrases are typical linguistic units. So, we used these two types of units. Compound nouns and noun phrases were selected as the target linguistic units. The purpose of this study was to investigate whether the relationship between the frequency of covert repairs and two types of linguistic units (words and phrases) would be different from that of overt repairs.

**Method**

1. **Subjects**

   Subjects were 80 non-stuttering children aged 2 to 4. They were all members of seven nursery schools in Kodaira City in Tokyo.

2. **Procedure**

   Compound nouns composed of two words were selected as a unit of words. Noun phrases composed of two words were selected as a unit of phrases. Examples of compound nouns and noun phrases are as follows.

   (2) a.  Ichigo keeki  (a compound noun)
        strawberry cake

   b.  Akai fuusen  (a noun phrase)
        red balloon

Four compound nouns and four noun phrases were used as a target of the production task. Compound nouns used in this study were “Ichigo keeki” (strawberry cake), “Chocoreeto keeki” (chocolate cake), “Ringo juusu” (apple juice) and “Orenji juusu” (orange juice). Noun phrases used were “Chiisai kame” (small turtle), “Ookii kame” (big turtle), “Akai fuusen” (red balloon) and “Aoi fuusen” (blue balloon).

The children were tested individually in a room at their schools. An elicited production task was used. First, a pair of picture cards was presented to each subject and the subject named each picture. Then, both pictures were hidden, then one of them presented, and the subject was asked to name it. If no response was observed, the experimenter presented the stimulus picture again and asked the child to name it. Each card was presented twice in a pseudo-randomized order to all the children.

**Results**

Table 1 shows the mean of correct responses in producing compound nouns and noun phrases. No significant difference was found between compound nouns and noun phrases on the mean of correct responses. Moreover, no significant differences were revealed among ages.

| Age | Compound nouns | | Noun phrases | |
|-----|----------------|---------------------|
| | N | Mean | SD | Range | N | Mean | SD | Range |
| 2 | 12 | 5.07 | 2.84 | 0-8 | 12 | 5.27 | 2.49 | 1-8 |
| 3 | 16 | 6.20 | 2.04 | 2-8 | 16 | 5.80 | 2.04 | 2-8 |
| 4 | 14 | 6.67 | 1.87 | 3-8 | 14 | 5.58 | 2.27 | 1-8 |

Figure 2 shows the mean frequency of covert and overt repairs in the production task of compound nouns and noun phrases. In the frequency of overt repairs, no significant difference was observed between compound nouns and noun phrases. In contrast, a significant difference was observed in the frequency of covert repairs between compound nouns and noun phrases ($F (1, 78) = 8.08, p < .01$). No significant differences were observed among ages in either covert or overt repairs.
Table 2 shows the typical data of child A. In the production of noun phrases, four repairs were observed, all of which were covert repairs. However, four repairs were also observed in the production of compound nouns, all of which were overt repairs.

<table>
<thead>
<tr>
<th>Linguistic units</th>
<th>Responses</th>
<th>Types of repairs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noun phrases</td>
<td>(a) A, aoi, aoi fuusen. Blue, blue balloon.</td>
<td>Covert repairs</td>
</tr>
<tr>
<td></td>
<td>(b) Aoi, aoi fuusen. Blue, blue balloon.</td>
<td>Covert repairs</td>
</tr>
<tr>
<td></td>
<td>(c) Okkii, okkii kame. Big, big turtle.</td>
<td>Covert repairs</td>
</tr>
<tr>
<td></td>
<td>(d) Okkii, okkii kame. Big, big turtle.</td>
<td>Covert repairs</td>
</tr>
<tr>
<td>Compound nouns</td>
<td>(e) E, ringo / mikan. Ah, apple / orange.</td>
<td>Overt repairs</td>
</tr>
<tr>
<td></td>
<td>(f) Na —— / uh ——, mikan, mikan juusu. Pe / uh—, orange, orange juice.</td>
<td>Overt repairs</td>
</tr>
<tr>
<td></td>
<td>(g) Nashi / ringo juusu. Pear / apple juice.</td>
<td>Overt repairs</td>
</tr>
<tr>
<td></td>
<td>(h) N——, na / ringo juusu. N——, pe / apple juice.</td>
<td>Overt repairs</td>
</tr>
</tbody>
</table>
Discussion

The relationship between stuttering and speech disfluency in young children has long been studied (Wingate, 1962; Sasanuma, 1968; Helmreich and Bloodstein, 1973; Bloodstein, 1974; Colburn and Mysak, 1982a, 1982b; Gaines, 1991; Yairi, 1992). However, we have not had a conclusive answer to this problem as yet. However, the psycholinguistic and phonetic study of stuttering has found some interesting facts (Postma et al., 1990; Dell et al., 1991; Nelson and Bauer, 1991; Ujihira and Kubozono, 1994).

Lately, Kolk (1991), Postma and Kolk (1993) and Kolk and Postma (1997) hypothesized that stuttering was a covert repair reaction to an abnormal phonetic plan (CRH). CRH views phonological encoding of stutterers differing only quantitatively from that of non-stutterers. Next, we need to study covert repairs in young, non-stuttering children systematically to better understand the onset and recovery from stuttering. However, the nature of covert repairs in non-stuttering children has not been studied in detail. In this study, we focused on the relationship between covert and overt repairs in young non-stuttering children. The purpose of this study was to investigate whether the relationship between covert repairs and two types of linguistic units (words and phrases) was different from that of overt repairs.

In this study, no significant difference was observed between compound nouns and noun phrases on correct responses. This result indicates that there is no difference in the difficulty of acquisition between compound nouns and noun phrases.

An interesting difference was observed in the mean frequency of covert and overt repairs. The frequency of covert repairs was significantly higher in noun phrases than compound nouns. However, we could not find such a difference in overt repairs. These results indicate that the nature of covert repairs is different from overt repairs in that covert repairs may occur in close relationship to the phonological programming of phrases.

In linguistics, compound nouns are treated in morphology (or word formation), and noun phrases are treated in syntax. So, we can say that compound nouns are processed differently from noun phrases. Covert repairs are said to reflect planning problems. If so, the results of this study indicate that covert repairs are caused by phrase or sentence planning problems.

Therefore, the results of this study suggest that covert repairs are different from overt repairs in that the former is more sensitive to phrase-planning problems than the latter.

Conclusion

The purpose of this study was to investigate the nature of difference between covert and overt repairs in non-stuttering young children. The frequency of covert and overt repairs was compared between noun phrases and compound nouns. The elicited production task was used. Subjects were 80 non-stuttering children aged from 2 to 4. The results were as follows. 1) The frequency of covert repairs in the production of noun phrases was significantly higher than that in producing compound nouns. 2) We did not find such a difference in overt repairs. These results suggest that covert repair is different from overt repair in that the former is more sensitive to phrase-planning problems than the latter.

Acknowledgment

We would like to express our gratitude to all the children and the director of the Onuma, Suzuki, Ogawa, Ogawanishi, Tsuda, Kihei, and Hanakoganei nursery schools of Kodaira City in Tokyo.

References


Helmreich, G. H. and Bloodstein, O. (1973). The grammatical factor in childhood disfluency in relation to the continuity
hypothesis. *Journal of Speech and Hearing Research, 16*, 731-738.


