1. Introduction

English permits various ‘complex-predicate’ constructions, including adjectival resultatives, verb-particle constructions, perceptual reports, *put*-locatives, and *to*-dative constructions, as in (1).

(1) a. John painted the house red. (Resultative)
   b. Mary picked the book up. (Verb-Particle)
   c. Fred saw Jeff leave. (Perceptual Report)
   d. Bob put the book on the table. (*Put*-locative)
   e. Alice sent the letter to Sue. (*To*-dative) (Snyder 2001)

In these complex-predicate structures of (1), the main verb co-occurs with another syntactic constituent, resulting in a complex predicate that semantically functions as a single word. For example, in (1b), the main verb *picked* and the particle *up* form a complex predicate (i.e., *picked up*). Snyder (1995) suggests that in complex-predicate structures, the main verb and the secondary predicate form a morphological compound at the point of semantic interpretation. Therefore, Snyder (1995) argues that the complex-predicate structures in (1) all require the marked value of the Compounding Parameter in (2). According to Snyder (1995), a language permitting these structures should also permit highly productive root compounding.

(2) The Compounding Parameter (TCP):
The grammar \{disallows*, allows\} formation of endocentric compounds during the syntactic derivation. [*unmarked value]

One major argument for the link between the ‘complex-predicate’ constructions and compounding comes from child language acquisition (e.g. Snyder 1995, 2001, 2007; Stromswold & Snyder 1995; Hanink & Snyder 2014).
For example, Stromswold and Snyder (1995) found that English-speaking children acquired (1b-e) as a group, sometime before age 3. Moreover, Snyder (1995, 2001, 2007) has shown a strong correlation between the acquisition of novel N-N compounds and the acquisition of the complex predicates of (1b-e).

However, the evidence is incomplete. The acquisition of adjectival resultative constructions in English was less studied. Stromswold and Snyder (1995) and Snyder (1995, 2001, 2007) did not check the acquisition of resultatives like (1a). It is unclear when and how children acquiring English know that resultative constructions are available in English. This paper aims to address these questions. In particular, this paper reports a corpus study of English-speaking children’s spontaneous production for resultative constructions and novel N-N compounds, to explore the link between the acquisition of the two structures.

This paper is organized as follows. Section 2 reviews the theoretical background and previous studies. Section 3 reports a corpus study of children’s spontaneous production of novel N-N compounds and resultatives. Section 4 summarizes the findings and concludes the paper.

2. Background

The link between compounding and ‘complex-predicate’ constructions was first proposed by Snyder (1995), with comparative morphosyntactic evidence. In particular, Snyder (1995) observed that all the Germanic languages allow bare-stem endocentric compounds, and that resultative constructions and verb-particle constructions are also available in these languages. However, none of the major Romance languages have creative, bare-stem endocentric compounding. Importantly, resultative constructions and verb-particle constructions are also absent in these major Romance languages. This cross-linguistic variation indicates a close link between compounding and resultative/verb-particle constructions (Snyder 1995).

More evidence for the connection between compounding and complex predicates comes from child language acquisition. For example, Snyder and Stromswold (1997) relied on longitudinal corpora and found that English-acquiring children acquired verb-particle constructions, perceptual-report constructions, put-locatives, and to-datives as a group, sometime before age 3. Furthermore, Snyder (1995) found that the ages of acquisition of verb-particle constructions, perceptual constructions, put-locatives, and to-datives are strongly correlated with the age of acquisition of novel N-N compounds. However, these acquisition studies have never checked English-speaking children’s production of resultatives, given that resultatives are very low in frequency.

Hanink and Snyder (2014) have examined the link between verb-particle constructions and compounding in child German. They looked at the longitudinal corpora from 10 German-acquiring children for their first-of-regular uses (FRU) of novel N-N compounds and their FRUs of verb-particle constructions. The results showed that the ages of FRUs of novel compounds were strongly correlated with the ages of FRUs of verb-particle constructions.
Sugisaki and Isobe (2000) explored the link between resultative constructions and compounding in child Japanese. They tested 3- and 4-year-old Japanese-speaking children with a cross-sectional approach: an elicited production task for novel N-N compounds, and a comprehension task for adjectival resultatives. The results revealed a significant contingency between the acquisition of these two structures.

These acquisition studies have provided support for the proposal that the availability of ‘complex-predicate’ constructions requires the positive setting of TCP. However, there is one remaining question: How do children acquiring English know that adjectival resultatives are available in English? Stromswold and Snyder (1995) and Snyder (1995) have never checked English-speaking children’s production of resultatives, given that resultative constructions are very low in frequency for both English-speaking adults and English-speaking children.

One recent work relevant to this point is Wang et al. (submitted). There we employed a Truth Value Judgment task and found that children who could do the task also comprehended adjectival resultatives at an adult-like level (down to age 3;02). In addition, we examined the longitudinal corpora of maternal speech, to see how much direct evidence of resultative constructions is available in a child’s input. The results showed that children acquiring English received extremely few examples of resultatives in the input. Therefore, we suggested that English-speaking children have acquired resultative constructions quite early with little direct evidence in their input. We further argued that children exploited a ‘parameter-based’ approach to acquire resultatives (i.e., inferring the availability of resultatives from other ‘+TCP’ structures like verb-particle constructions).

Nonetheless, due to the task-specific difficulties of TVJ task, in Wang et al. (submitted) could not test younger children and thus could not directly assess whether the acquisition of resultatives happens earlier than age 3;02. As discussed above, English-speaking children acquire other ‘+TCP’ constructions, like verb-particle constructions, perceptual constructions, *put*-locatives, and *to*-datives, as a group, sometime before age 3 (Stromswold & Snyder 1995). Thus if resultatives are also taken to be ‘+TCP’, it is important to see whether the acquisition of resultatives happens earlier than 3;02. Moreover, in Wang et al. (submitted) we did not directly assess the link between the acquisition of resultatives and the acquisition of compounding.

3. Corpus study

This study aims to answer two big questions: (i) When do children acquiring English begin to produce adjectival resultatives? (ii) Is the acquisition of adjectival resultatives linked to the acquisition of compounding? This paper relies on the longitudinal corpora of English-speaking children’s spontaneous production for adjectival resultatives like (1a) and novel N-N compounds.
3.1. Spontaneous production of resultatives

Since adjectival resultatives are very low in frequency for both English-speaking adults and English-speaking children (e.g., Stromswold & Snyder 1995; Snyder 1995, 2001, 2007; Wang et al., submitted), we decided to locate children’s first clear use of adjectival resultatives, rather than the commonly used first-of-regular-uses (FRU). More details will be given below.

We selected longitudinal corpora for 20 English-speaking children (CHILDES; MacWhinney 2000). First, we ran the CLAN programs ‘FREQ’ and ‘FREQMERG’ to create a list of words that were used at least once by at least one child. Second, after removing proper names, we hand-searched for all words that can possibly function as an adjective. Third, we used the ‘COMBO’ command to locate every child utterance containing a possible adjective preceded by at least two other words. Finally, the resulting lists were hand-searched for every possible resultative construction. We checked the context to exclude imitations, formulaic routines, idioms, and unclear utterances. Moreover, candidates were excluded if the main verb was a closed-class causative verb, like make, get, or have. These are causative constructions, which are available in ‘-TCP’ languages.

Given that resultatives are low-frequency, it is expected that some children may use more resultatives than other children. We found clear uses of resultatives for 10 of the 20 children. The ages of the first clear use of resultatives for these 10 children were located. As shown in Table 1, most children began to use resultatives around the age of 2.5 years. To be specific, 7 of the 10 children showed clear uses of resultative constructions before 2.5. Another 2 children began to use resultatives shortly after 2.5 (before the age of 3). The age of the first clear use of resultatives for Sarah was relatively late (3.88 years).

Table 1: Ages of the first clear use of resultatives

<table>
<thead>
<tr>
<th>Name</th>
<th>John</th>
<th>Naomi</th>
<th>Liz</th>
<th>Gail</th>
<th>Carl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of first clear use</td>
<td>1.96</td>
<td>2.05</td>
<td>2.23</td>
<td>2.35</td>
<td>2.26</td>
</tr>
<tr>
<td>Name</td>
<td>Shem</td>
<td>Lily</td>
<td>Aran</td>
<td>Adam</td>
<td>Sarah</td>
</tr>
<tr>
<td>Age of first clear use</td>
<td>2.31</td>
<td>2.64</td>
<td>2.37</td>
<td>2.59</td>
<td>3.88</td>
</tr>
</tbody>
</table>

The results show that most of these English-speaking children acquired resultative constructions quite early, around age 2.5. The results are compatible with the findings for other ‘+TCP’ complex-predicate constructions (e.g., Stromswold & Snyder 1995). As discussed above, English-speaking children acquire verb-particle constructions, perceptual constructions, put-locatives, and to-datives, as a group, sometime before age 3 (Stromswold & Snyder 1995).
Therefore, our results provide support for the proposal that adjectival resultatives are another ‘+TCP’ construction.

3.2. Spontaneous production of N-N compounds

In order to further investigate the link between adjectival resultatives and compounds, we examined the longitudinal corpora of the same 10 children for their spontaneous production of novel N-N compounds.

For these 10 children we obtained the age of the FRU for novel N-N compounding. The ages for 9 of the children came from Snyder (2007). For the remaining child (not discussed in Snyder 2007) we searched her corpus, using the same procedure as in Snyder (2007). Specifically, we hand-searched all child utterances containing at least two words, and located all the instances of two consecutive words that could both function as a noun in English. In each case, we next checked the context of utterance to judge whether it was indeed a novel N-N compound. We excluded any example that was an imitation of another speaker, was a formulaic routine, or had been marked as unclear by the transcriber. Finally, we identified the first apparent use of a novel N-N compound that was followed soon after (within four weeks) by additional, distinct uses of N-N compounds; this was selected as the FRU, and the child’s age at the time of production was noted.

The results for these 10 children are given in Table 2. All 10 children produced N-N compounds quite early. In particular, 9 of the children began to use N-N compounds regularly before age 2.5. Once again Sarah was the outlier, with an FRU of N-N compounding at the age of 2.59 years.

Table 2: Ages of FRU of N-N compounds

<table>
<thead>
<tr>
<th>Name</th>
<th>John</th>
<th>Naomi</th>
<th>Liz</th>
<th>Gail</th>
<th>Carl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of FRU of N-N compounds</td>
<td>2.00</td>
<td>1.92</td>
<td>2.04</td>
<td>2.01</td>
<td>1.96</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Name</th>
<th>Shem</th>
<th>Lily</th>
<th>Aran</th>
<th>Adam</th>
<th>Sarah</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of FRU of N-N compounds</td>
<td>2.25</td>
<td>1.70</td>
<td>1.99</td>
<td>2.26</td>
<td>2.59</td>
</tr>
</tbody>
</table>

As predicted by TCP, the first uses of novel N-N compounds were either concurrent with, or prior to, the first uses of resultatives. Moreover, there was a significant correlation between the ages of FRU of novel N-N compounds and the ages of the first clear use of resultatives ($r^2=.475$, $p=.027$), as shown in (5). Therefore, the results provide support for Snyder’s (1995) proposal that resultatives require the marked setting of TCP.
4. General discussion and conclusion

We examined the longitudinal corpora of 20 English-speaking children and found clear uses of adjectival resultatives for 10 of them. The results showed that these 10 English-speaking children began to use adjectival resultatives quite early, around age 2.5. The findings were compatible with the findings about the acquisition of other ‘+TCP’ constructions by Stromswold and Snyder (1995).

The ages of FRU of N-N compounds for these 10 children were also calculated. The results showed that the first uses of novel N-N compounds were either concurrent with, or prior to, the first uses of resultatives. Moreover, there was a significant correlation between the ages of first novel N-N compounds and the ages of first adjectival resultatives.

These findings are all compatible with the predictions of TCP. While these findings do not necessarily establish that children used a ‘parameter-based’ approach (i.e., inferring the availability of resultatives from the presence of other ‘+TCP’ structures in their input), the evidence points in that direction.

References


