

Acquisition of Clausal Comparatives by Parameter Setting

Variation in *than* Complement: Some languages including Japanese (Ishii 1991), Hungarian (Snyder 1995) and Russian (Berezovskaya 2013) are reported to disallow a subordinate sentence following “*than*” when degrees of adjectives are compared (Degree Clausal Comparatives: DCC) while allow it when quantities are compared (Quantity Clausal Comparatives: QCC). Japanese examples are shown in (1). The cross-linguistic variation is explained by proposing a parameter whether the DCC is possible in a language or not, i.e. [\pm DCC]. Languages like English, which allow both QCC and DCC, would have a positive value for the parameter, i.e. [+DCC].

The Subset Principle and Prediction: From the learnability point of view based on the Subset principle (Manzini and Wexler 1987), English learner should learn the QCC first and then switch to the more marked value [+DCC]; start producing/comprehending the DCC. The subset principle is a learning method for specifying a markedness hierarchy when alternative values yield languages which are in a subset relation. Suppose less marked value i of the parameter p yields a language $L(p(i))$ and more marked value j yields $L(p(j))$, where $L(p(i))$ is a strict subset of $L(p(j))$ as in (2). The subset relation here is crucial to overcome the learnability dilemma (Wexler and Hamburger 1973) that there is no way (given only positive data and no negative data) to correct the overgeneralization if the child ever picks a parameter setting which gives too large a language which is a superset of the correct target language s/he is learning. Thus, for the DCC parameter, English-learner would acquire QCC comparatives ($p(i)$) first and then switch the value to j (+DCC) after getting positive evidence from the language $L(p(j))$. In particular, for a comprehension task, the percentage of the correct answer of English-learning individual children should be higher for QCC items than (or equal to) DCC counterparts.

Previous Study and Problem: Snyder et al. (1995) conducted an experiment using the truth value judgment task (TVJT; Crain and McKee 1985) on 8 children (4;1-5;1, mean age 4;7), examining their comprehension of various clausal comparatives. In the study, they checked differences between noun (quantity) versus adjective (degree) comparison, and the result was that there is no significant difference between them (percentages correct: 54% vs 67%). The difference was, however, tested only with (full) comparative deletion, as shown in (3). The problem is that children could comprehend the sentences as phrasal comparatives, ignoring the last word of the sentences, and still can judge the truth value of the sentences with the correct answer. Thus, due to the test sentences, the experiment cannot confirm if children can comprehend degree-clausal comparatives.

The Experiment: To avoid the problem, the current study conducted a similar TVJT experiment on 15 monolingual English-learning children (3;3-5;10, mean age 4;5), with unambiguously clausal comparatives (both quantity and degree) using the “subdeletion” (Bresnan 1975) sentences, where ignoring the last part and comprehending them as phrasal comparatives would change the truth value of the sentences. Stories were presented as animation on a tablet screen narrated by one of the experimenters. After each story, Cookie Monster (CM) the puppet acted by another experimenter say 3-4 test sentences about the story (1 practice and 7 test stories). The subject were asked to give a cookie to the puppet when he was right. The sample stories are shown in (4) for the QCC and (5) for the DCC. The pictures here show the final slides the child would look at when CM utters the test sentences. In both cases, the correct answers correspond to negative answer. If the subject child has the adult grammar (both QCC and DCC), it is expected that they will answer with “no” to CM. On the other hand, if they don’t have the grammar, they would disregard the second clause in the test sentences and interpret them as phrasal comparatives as shown in (4’)(5’), thus answer with “yes.”

Result and Conclusion: As shown in graph (6), there was a general directionality between correct percentages of QCC items and that of DCC items, i.e. $QCC \geq DCC$. The directionality was statistically significant by Wilcoxon signed-rank test ($n_{\text{sr}} = 11$, $W = 54$, $Z = 2.38$, two-tailed $p = .0173$). The result of the study supports the parametric view on cross-linguistic variation in comparatives based on the Subset Principle, where I proposed that there is a parameter p regarding the complement selection by comparative preposition *than*, for which less marked value i is [-DCC] while more marked value j is [+DCC]. The Children seem to learn quantity-clausal comparatives first, and then degree-clausal comparatives after they get positive evidence of the latter.

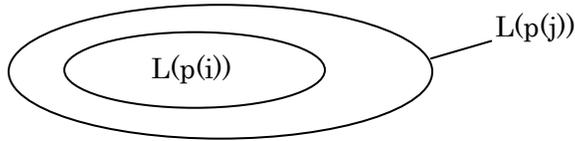
(1) a. Degree Clausal Comparatives (DCC)

*Kono teeburu-wa [CP ano doa -ga hiroi] yori nagai
 This table-Top that door -Nom wide than long
 'This table is longer than that door is wide'

b. Quantity Clausal Comparatives (QCC)

John-wa [CP Mary-ga zassi -o utta] yori takusan hon-o katta
 -Top -Nom magazine -Acc sold than many book-Acc bought
 'John bought more books than she sold magazines'

(2)



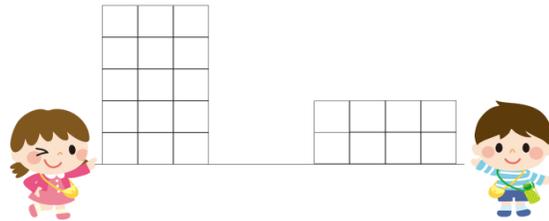
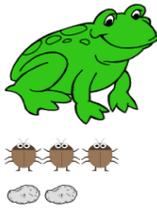
(3) a. The troll has more soap than Homer *has*.
 b. The troll is bigger than Homer *is*.

(4) Quantity subdeletion item (for QCC):

Context: Frog found 3 bugs and 2 rocks; Smurf found 1 bug and 4 rocks
 CM: Oh, I know. The frog found more bugs than Smurf found rocks. (0)

(5) Degree subdeletion item (for DCC):

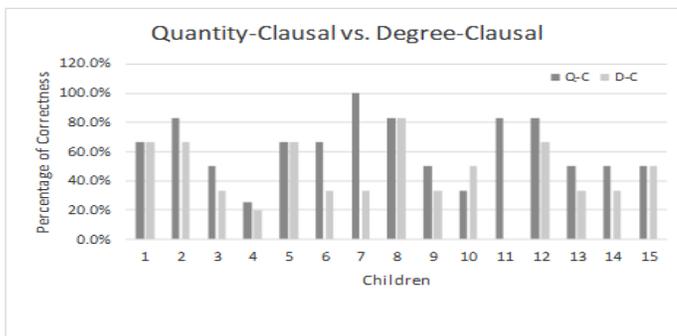
Context: Girl built 5 bricks high × 3 bricks wide wall; Boy built 2 bricks tall × 4 bricks wide wall
 CM: "So, the boy's wall is wider than the girl's wall is tall?" (0)



(4') The frog found more bugs than [DP Smurf] found rocks. (1)

(5') The boy's wall is wider than [DP the girl's wall] is tall. (1)

(6)



Selected References: Bresnan, J. 1975. Comparative Deletion and Constraints on Transformations. *Linguistic Analysis* 1, 25-74. Ishii, Y. 1991. Operators and Empty Categories in Japanese. Ph.D. Dissertation, University of Connecticut. Manzini, R. and K. Wexler. 1987. Parameters, Binding Theory and Learnability. *Linguistic Inquiry* 17, 413-444. Snyder, W. 1995. Language acquisition and language variation: the role of morphology. Ph.D. Dissertation, MIT. Snyder, W., K. Wexler, and D. Das. 1995. The syntactic representation of degree and quantity: Perspectives from Japanese and child English. *Proceedings of the WCCFL 13*, 581-596.