

Morphological Learning and Root Infinitives

Problem The Root Infinitive (RI) phenomenon has occupied a central place in the generative studies of language acquisition (Rizzi 1994, Wexler 1994, Hoekstra & Hyams 1998). Yet there are several aspects of RI that have not received adequate theoretical consideration. First, RI is *optional*: children use a mixture of RIs, decreasing in frequency, along with finite verbs. This suggests that RI cannot be due to a categorical discontinuity in the grammar. Second, cross-linguistic distribution of RI is *gradient* (Guasti 2002): in the acquisition of languages such as Italian, Catalan, and Spanish, there is a very short RI stage if one at all, whereas English, Dutch, and German children have a much longer period of RI use, sometimes extending over three years. This suggests that RI cannot be due to performance or maturational constraints, which would presumably affect all populations equally. Finally, the distribution of RI is grounded in the *verbal morphology* of the target language: the propensity and duration of RI across languages are strongly correlated with the morphological “complexity” of the verbal system (Phillips 1995). This suggests that morphological learning must play a crucial—and quantitative—role in the explanation of RI.

Proposal Adopting the variational framework of language acquisition (Yang 2002), we approach the RI problem with two specific proposals. First, the optionality and gradual decline of RI reflect the presence of a grammar such as Chinese—call it a [-T] grammar—which does not manifest tense marking. A [-T] grammar, which typically uses aspect for temporal anchoring (Enç 1987), may also explain the aspectual interpretation of RI in child language (Hoekstra & Hyams 1998, Becker 2000). Second, the elimination of the [-T] grammar is achieved through the learning of the morphosyntactic system of the target language. This explains how quantitative differences in morphological complexity lead to the cross-linguistic variation in the RI stage.

Consider how the morphosyntactic input to the child provides evidence for the [+T] versus [-T] grammar. When the tense marker is null—such as “I run” in the English present tense—the [-T] grammar will be incorrectly rewarded. We conjecture that the [+T] option may also be punished, for it requires the postulation of a phonologically null morpheme for present tense, which, for independent reasons, must be dispreferred. Thus, null tense patterns prolong the RI stage. What kind of morphological patterns punish [-T] grammar and thus drive the learner toward the [+T] target? Here both primary and secondary exponence of tense features must be taken into account (e.g., Harley & Noyer 1999). Obviously, any overt marking of tense (e.g., English past tense morpheme “ed”) pushes the learner toward [+T]. However, [+T] is also rewarded in morphological environments that do not mark tense but nevertheless implicate the tense feature. For example, although the English third person singular marker (“s”) does not contain an overt morpheme for tense, it only surfaces in the context of present tense. Both kinds of morphological data contribute to the elimination of the [-T] grammar.

Results We present corpus studies of child-directed speech of Spanish, French, and English (MacWhinney 1996). We measure the quantity of morphological evidence for [+T] as the difference between the percentage of input sentences that unambiguously implicate [+T] (i.e., the primary and secondary exponence discussed above), and the percentage of input sentences that favor [-T] (null tense patterns, like “I run”). We found these measures to be 54.4% for Spanish, 39.8% for French, and only 8.8% for English. These numbers strongly correlate with the duration of the RI stages in these languages (Grinstead 1994, Phillips 1995, Rasetti 2003).

We conclude by noting that the present account offers a principled explanation for the extended RI stage in the SLI population (Rice & Wexler 1996). We conjecture that the extended RI stage is not due to a grammatical deficit (contra Rice, Wexler & Hershberger 1998). As is well known, the SLI children have difficulty with morphological learning (Leonard et al. 1992, Rice et al. 2000). For us, the extended RI stage is thus due to a prolonged existence of the [-T] grammar, which simply takes longer to be eliminated for slow morphological learners.

References

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