

## APPENDIX

# Scoring Criteria

The scoring criteria used for these series of studies draw heavily from the scoring criteria established by the Language Acquisition Research Group of the Department of Human Development at Cornell University. The main purpose was to follow an established scoring methodology that enables other researchers to replicate the experiments, and/or compare the results.

### A. MEASURE FOR CORRECTNESS:

1. Sentences were scored as incorrect in all substudies if they involved:
  - a. Substitutions
    - (i) substitutions of one stuffed animal for another
    - (ii) substitutions of one prop for another
  - b. Incorrect binding relations
    - (i) in the Base Study, binding the reflexive pronoun to a referent not the subject of the sentence
    - (ii) in the Base Study, binding the non-reflexive pronoun in object position to the subject of the sentence

- (iii) in the Inflection study, binding the subject of the subjunctive clause to the subject of *decir*
  - (iv) in the Lexical Class Study, binding the subject of the complement of a volition verb to the matrix subject
  - (v) the use of self as agent of an action in all sentence types
  - c. Acting-out only the first clause
    - (i) in the Base Study, not acting-out the prepositional phrase
    - (ii) in the Inflection and Lexical Class Studies, acting out only the main clause
  - d. Incorrect or insufficient actions
    - (i) merely picking up an animal and a prop, and not performing an action was no indication that the animal was the agent of the action.
    - (ii) carrying out a different action than the one described in the sentence (e.g. washing for scratching)
  - e. Repetitions given upon request of the child after an action had been carried out.
  - f. Ambiguous transcripts.
2. The following responses were scored as correct:
- a. acting-out only the embedded clause action in the Inflection or the Lexical Class studies.
  - b. action similar to the one described in the stimulus sentence, which reflect that the child understood the nature of the action.

#### B. MEASURE FOR (NON-)COREFERENCE:

1. Responses which involved substitution of a prop or an

animal were retained for scoring of (non-)coreference judgments.

2. Sentences in the Base Study for which a prepositional phrase containing a (non-)reflexive pronoun was not acted-out were not scored for coreference judgments.
3. Sentences in the Inflection and the Lexical Class Studies for which only the matrix clause was acted-out were not retained for scoring of (non-)coreference judgments.
4. (Non-)coreference judgments were coded as follows:
  - (a) Base Study:
    - (i)  $d_i - d_i$ : same animal was used for subject and for (non-)reflexive pronoun
    - (ii)  $c - d_i$ : child acted as agent of the action, and animal (= subject of the stimulus sentence) was used as patient
    - (iii)  $d_i - d_j$ : one animal was used to represent the subject, and a different one to represent the (non-)reflexive pronoun
    - (iv)  $d_i - \text{obj}$ : an animal was used to represent the subject, and an object as the patient of the action
    - (v)  $d_i - \Phi$ : the prepositional phrase was not acted out. Not scored for (non-)coreference.
    - (vi)  $\Phi$ : insufficient action or no response. Not scored for (non-)coreference

Cases (i) and (ii) were grouped under the rubric of 'coreference with subject'; cases like (ii) reflect that the subject was interpreted as the referent of the pronoun, although the child took over the role of the agent. Cases (iii) and (iv) were grouped under the rubric of 'non-coreference with the subject'. Cases like (iv) were in many

cases also correct since the direct object pronoun *la* may refer both to an animate or inanimate feminine entity.

b. Inflection Study: Although for the most part both matrix and complement clauses were acted out, it was the complement clause that was used to determine (non-)coreference judgments.

- (i) S = coreference with the subject of the matrix
- (ii) O = coreference with the object of the matrix
- (iii) C = self as agent
- (iv)  $\Phi$  = insufficient or no response

Case (i) was scored as 'coreferent with the subject'; case (ii) as 'non-coreferent with the subject'. Case (iii) was not scored for (non-)coreference, since there was no way of determining was referent the child was replacing as the agent. Case (iv) was also not scored.

c. Lexical Class Study:

- (i)  $d_i - d_j$ : same animal was used for the subject of matrix and subject of complement.
- (ii)  $d_i - d_j$ : an animal was used to represent matrix subject and another one to act-out complement clause.
- (iii)  $\Phi - d_i$ : an animal different from the one mentioned in the stimulus sentence used to act-out complement clause; matrix subject not represented.
- (iv)  $\Phi - c$ : child acts out complement clause
- (v)  $d_i - \Phi$ : only matrix clause acted out not acted out.
- (vi)  $\Phi$ : insufficient action or no response.

Case (i) was scored as 'coreferent with subject'; case (ii) as 'non-coreferent with subject'. The rest of the cases were not scored, for the following reasons: in (iii) the response

is ambiguous, since it could either be 'non-coreferent with the subject' or just the result of an erroneous substitution of animals. Only 1% of the responses were of this type. In case (iv) there is no way of knowing in behalf of which animal the child acts out as agent. Cases (v) and (vi) do not offer sufficient information for a (non-)coreference score.

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ISBN 90-277-1495-9
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