

L1 Attrition and Recovery – A Case Study

Juliet B. Hubbell-Weinhold
University of Zurich, Switzerland

In today's world, it is not uncommon for children to leave their monolingual environment and move to a region or country in which they must learn a new language. In the case of many sequential bilingual children, the first language is often 'set on the back burner' as the child experiences the new L2 dominant environment and focuses on achieving competency in the new language. But what happens to the first language? Is it lost; does it become dormant? L1 attrition has been described and documented in the literature for decades, but what happens with L1 if it is 'put back on the front burner'? Recovery of a first language that has experienced attrition is a topic which has received much less attention; this author is aware of only three studies on the subject: Slobin et al (1993), Berman (1979) and Dahl and Rice (2000). In this study, three siblings who had become sequential bilinguals returned to an L1 dominant environment and their language skills were assessed after a seven month 'recovery/reacquisition' period. Results are compared to the subjects' previous monolingual and bilingual data. Since standardized tests were used, there is quantitative information to compare. Only the Slobin et al study involves a subject who was initially monolingual, became a sequential bilingual and then subsequently returned to an L1 dominant environment. I will compare results and comment on some of the conclusions in the Slobin et al study, with particular focus on comprehension.

1. Description of subjects and their language environment

The subjects were three sisters. Their mother was a speech-language pathologist and had done language assessment when they were preschoolers, at ages 5;5, 4;2, and 4;10. These test scores have serendipitously provided baseline data for this study. When the children were 11-5, 10-2, and 8-7, they moved to Switzerland and were immersed in Swiss German, with L1 being spoken only in the home, and primarily just to the parents. All three girls achieved conversational L2 competency within six months, and they were at or above average in all academic subjects by the end of their second year of schooling in the Swiss system. They spoke Swiss German among themselves an estimated 80% of the time, and two of the three were observed speaking Swiss German in their sleep. After two years, nine months of L2 immersion, their L1 (English) skills were reassessed. Four months later, after the children had been immersed in L2 for three years, one month, they returned to the United States to live for 7 months. There, the use of Swiss German diminished rapidly and they were exposed to L1 almost exclusively. At the end of this period of L1 (re)immersion, the subjects were again reassessed.

2. Test instruments and analysis

The following standardized tests were used to assess language competency, according to the childrens' chronological ages at the time of testing: Test of Language Development: 2 Primary (TOLD: 2P), Test of Language Development: 2 Intermediate (TOLD: 2I), Test of Adolescent and Adult Language: 3 (TOAL-3). Each test consisted of six to eight subtests, standard scores for which were cross-compiled to derive composite scores in the areas of: receptive language (comprehension), expressive language (production), semantics, and syntax. Articulation and phonological skills were not considered in this study. Table 1 summarizes the subtests used from each test to obtain the composite scores for the four core areas listed above. Note that some subtests provide information applicable to more than one core area, and are therefore cited more than once. Appendix 1 gives sample items for each subtest.

Table 1
Subtests Used to Obtain Composite Scores in Four Core Areas of Language

	TOLD: 2P	TOLD: 2I	TOAL: 3
RECEPTIVE	Picture Vocabulary Grammatic Understanding Word Discrimination	Vocabulary Grammatic Comprehension Malapropisms	Listening/Vocabulary Listening/Grammar Reading/Vocabulary Reading/Grammar
EXPRESSIVE	Oral Vocabulary Sentence Imitation Grammatic Completion	Sentence Combining Word Ordering Generals	Speaking/Vocabulary Speaking/Grammar Writing/Vocabulary Writing/Grammar
SEMANTICS	Picture Vocabulary Oral Vocabulary	Vocabulary Generals Malapropisms	Listening/Vocabulary Speaking/Vocabulary Reading/Vocabulary Writing/Vocabulary
SYNTAX	Grammatic Understanding Sentence Imitation Grammatic Completion	Sentence Combining Word Ordering Grammatic Comprehension	Listening/Grammar Speaking/Grammar Reading/Grammar Writing/Grammar

3. Results

Table 2 shows the average change in language skills for the four core areas, measured by the difference in averaged standard scores across the three subjects.

Table 2
Gains and Losses in Averaged Standard Scores for L1

	ATTRITION L2 DOMINANT ENVIRONMENT FOR 33 MONTHS	RECOVERY/REACQUISITION L1 DOMINANT ENVIRONMENT FOR 7 MONTHS
Receptive	-3.07	+1.39
Expressive	-2.75	+0.81
Semantics	-4.83	+1.11
Syntax	-2.77	+1.16

3.1 Initial L1 attrition

Subjects lost skills in all areas tested. The greatest loss was in the area of semantics, but it is quite clear that L1 had experienced significant attrition across the board.

3.2 Recovery/reacquisition of L1

Subsequent to the return to an L1 dominant environment, the subjects were able to recover, or reacquire, a good portion of attrited language in the seven month (re)immersion period. It is noteworthy that this seven month period represents roughly one fifth of the amount of time it took to lose the skills initially, and in this context, the recovery/reacquisition could be considered to be rapid. Gains were noted in all areas, but perhaps it is most enlightening to consider these gains with respect to the amount of improvement relative to the amount that had been originally lost. Figure 1 illustrates

the averaged losses in relation to averaged gains in the four core language areas. Figure 2 expresses this data in terms of the percentages of skills which were regained in the core areas.

Figure 1
Attrition and Recovery of L1

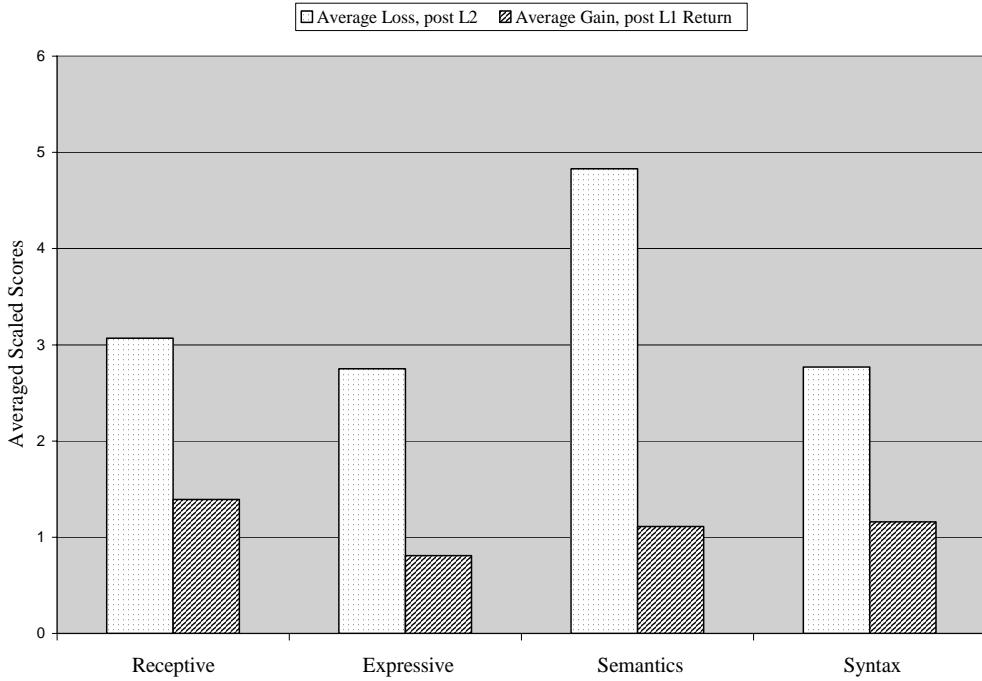
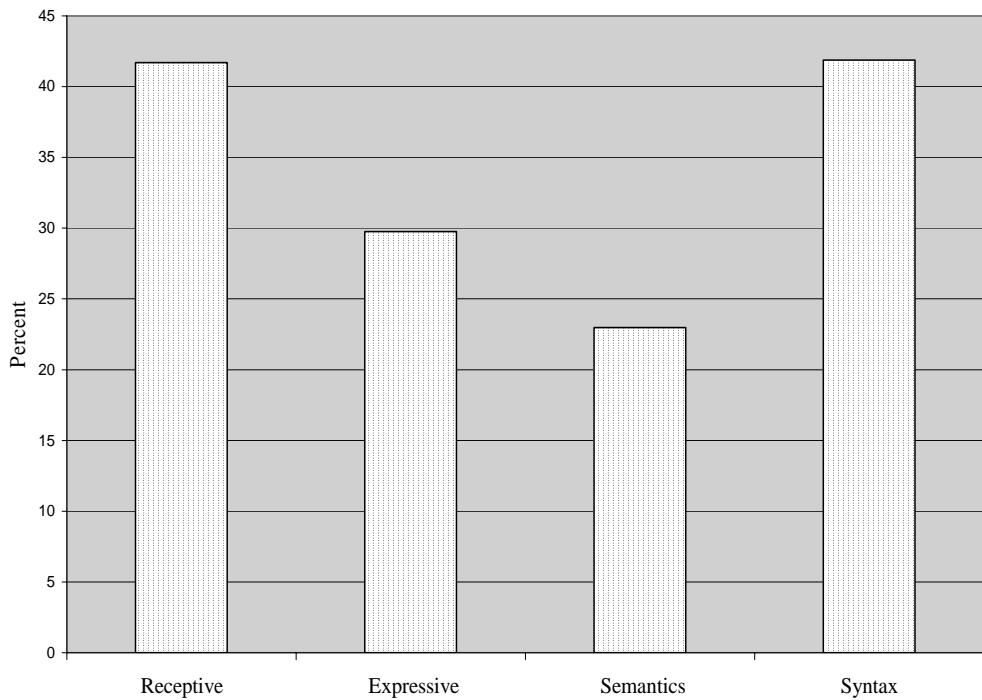


Figure 2
Percent of L1 Losses Recovered after 7 Months of Reimmersion in L1



3.3 Individual results:

Figures 3, 4, 5 and 6 illustrate the individual results in each of the language areas considered. As is evident from the figures, all three subjects experienced attrition of L1 in all areas. Subjects one and three exhibited improvement in all four areas after (re)immersion in L1; subject two showed improvement in receptive language and syntax. For subject two, attrition of L1 appears to have continued in the areas of semantics and expressive language, though an averaging of all three subjects' scores indicated that the trend was still toward recovery. Subject two will be further discussed in the next section.

Figure 3
Receptive Language Skills

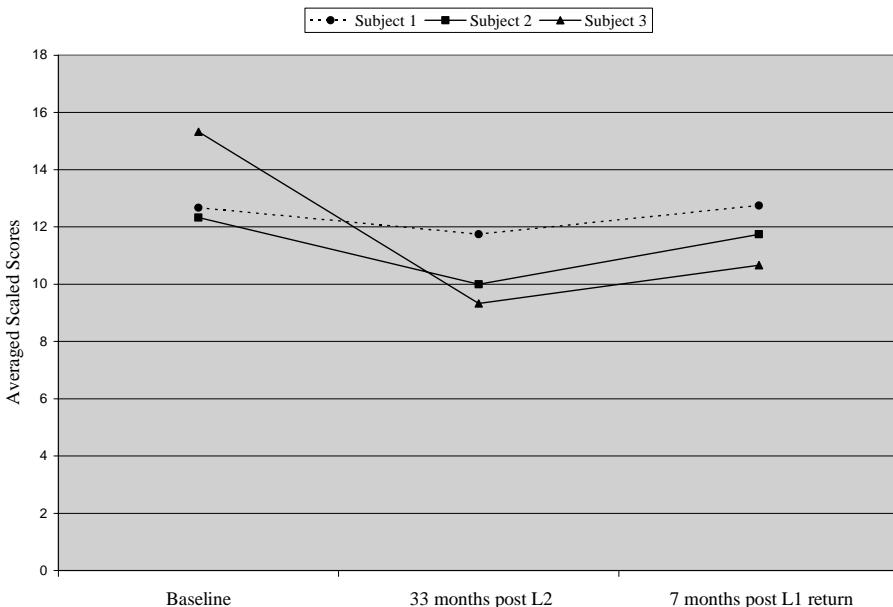


Figure 4
Expressive Language Skills

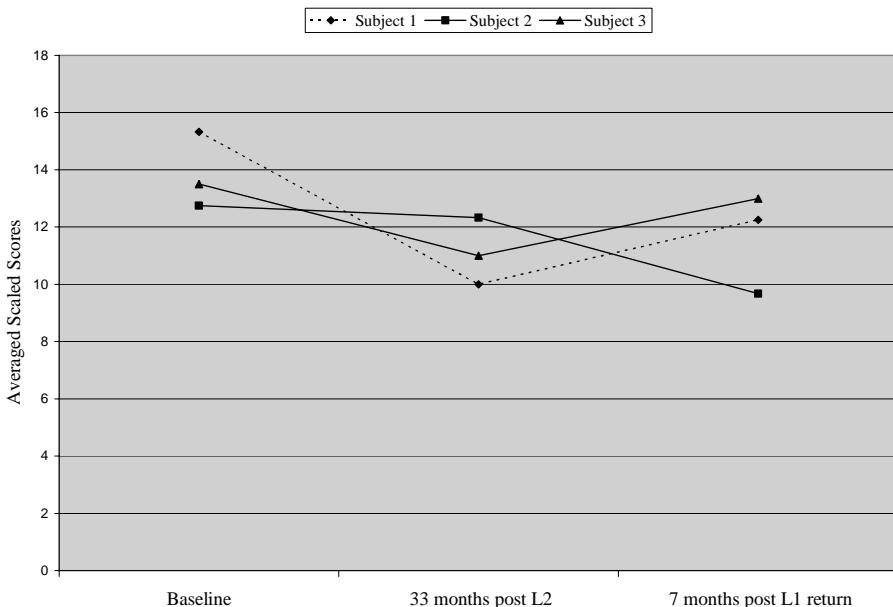


Figure 5
Semantic Skills

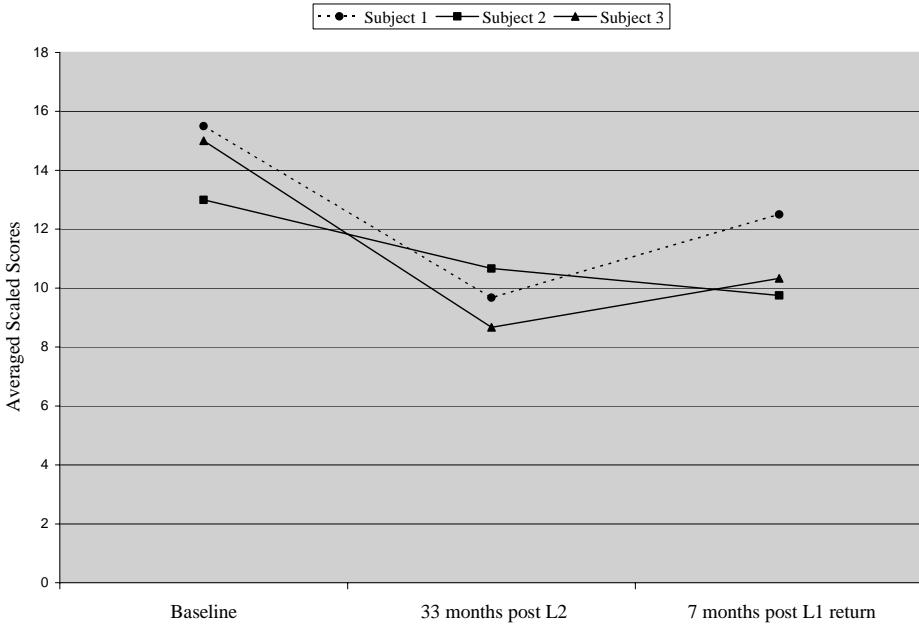
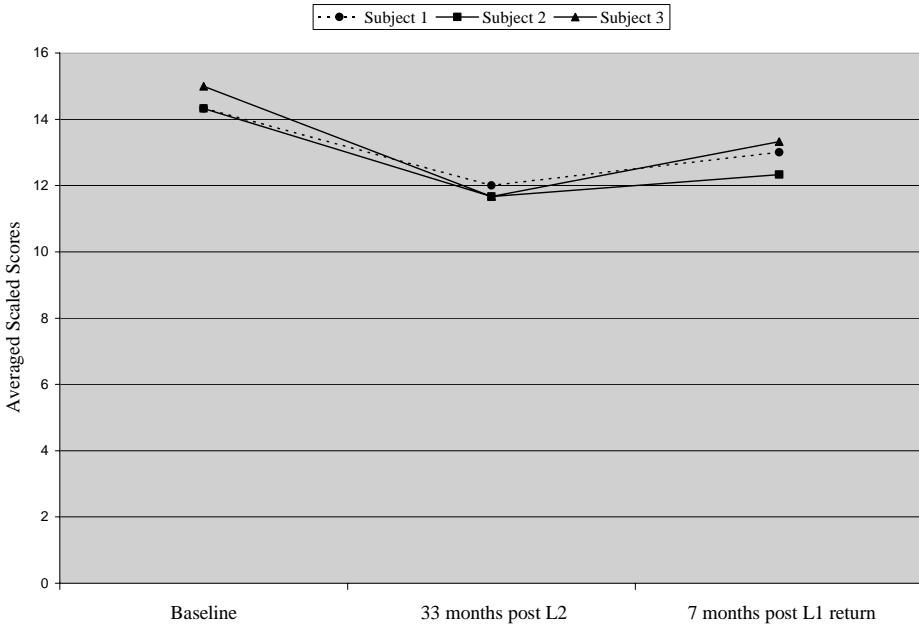


Figure 6
Syntactic Skills



4. Discussion

It is no surprise that the subjects in this study experienced attrition of L1. What is interesting to note is how similar the losses amongst the subjects were; in fact the losses in the area of syntax were almost identical. Numerous studies have examined the attrition of L1, but relatively few have looked

at the recovery, or reacquisition of L1 skills subsequent to a return to an L1 dominant environment, (Berman, 1979, Slobin et al, 1993; Dahl and Rice, 2000). All three of these studies describe losses and recovery in the areas of expressive language, and the former two studies describe such variables in receptive language as well. None of the studies examined semantic and syntactic attrition and recovery. Examination of Figure 1 reveals that far more semantic competency was lost than syntactic. In fact, the most dramatic losses in this study were experienced in semantic skills. Why were the losses in semantic comprehension and production so much greater than the other losses? A possible explanation is to consider the size of the language subset 'semantics' compared to the subset 'syntax'. The inventory of syntactic items, while possibly more complex, is debatably finite; the inventory of semantic items is almost infinite. So, perhaps more was lost because there was more to lose. Also, there exists slight variability in how a thought might be expressed or interpreted syntactically, but much greater variability in the vocabulary realm. The vast lexicon of English enables speakers to communicate subtle differences and shades of meaning through their word choice. Conversely, a speaker can communicate using a diminished semantic inventory and still be quite functional, even though they might not use the 'perfect' word to express their thought. The listener who does not know a given word is often able to comprehend the whole of a sentence by using contextual cues, and therefore a loss of semantic comprehension might not be fully reflected by overall receptive language competency.

Subject 2 had somewhat anomalous results in the semantic and expressive language categories. She experienced attrition in the post L2 condition, but did not experience reacquisition in the return to the L1 dominant environment. Perhaps the continued decline in skills was a sort of delayed response to the attrition begun in the bilingual setting, and one could conjecture that if she had been tested after a longer period in the L1 (re)immersion mode, she would have exhibited a delayed 'recovery' as well. Another theory is that this subject was somehow 'different' in her language learning. Though she was above average in the areas of language tested at the outset of the study, she had, as a preschooler, had a moderate phonological disorder. It is possible that future data on this individual will provide more clarity.

Syntax and receptive language were most resilient to recovery/reacquisition. Figure 2 shows quite clearly the higher percentages of gains; they were almost double the gains noted in semantics and expressive language. Referring to the discussion about semantics versus syntax above, one could conclude that since the amount of syntactic information to be recovered is less than semantic, it would be recovered at a faster rate. Or, since the set of grammatical constructions is smaller, the subject in the (re)immersion mode has opportunity to practice a higher percentage of the total set, and can therefore post greater gains than in semantics. With respect to receptive language, we would expect to see gains in receptive language before expressive language; this is what we know and expect from our observation of first and second language acquisition.

Throughout this study I have used the terms recovery and reacquisition interchangeably. At this time I would like to suggest that they are not the same. Indeed it seems that 'recovery' would suggest that skills are not really lost, but that they have become dormant in some way. 'Reacquisition' on the other hand, seems to imply that the skills in question *were* lost, and must be completely relearned. If this were the case, differences in recovery/reacquisition might be accounted for. A skill might be more quickly and more completely regained because it was dormant and somehow became reactivated. This would be recovery. If a skill were less completely and more slowly regained, that could be an indication that the skill was lost, and acquisition had to begin anew. With this in mind, it is possible that syntactic and receptive skills in this study were not lost, just dormant, and they experienced recovery. Conversely, perhaps the semantic and expressive skills were lost, and had to be reacquired.

In further consideration of L1 receptive language recovery/reacquisition, I would like to look at the other studies of bilinguals who have returned to an L1 dominant environment. Dahl and Rice (2000) looked primarily at expressive language of their subject. In Berman's study (1979), her subject was a simultaneous semi bilingual who understood both languages but spoke only one. This subject reportedly lost all comprehension of the more dominant of the two languages when residing in the non dominant language environment. In these two studies the subjects were simultaneous bilinguals. It is hard to draw parallels with the subjects in this study, since they did not lose all comprehension, and also since they were sequential bilinguals. The subject studied by Slobin et al (1993) is more similar to the present subjects; all were monolingual speakers of English before their immersion into an L2 environment. An important difference which may play a role is that the Slobin et al subject (named

Shem) became bilingual in early childhood; the subjects in this study were in mid to late childhood at the time of their L2 acquisition. Slobin et al maintain that Shem did not lose his comprehension of his L1 (English) or his L2 (Turkish). This was measured by monitoring the correctness of his responses to questions in conversation, using a 75% correct criterion. I would suggest that the subjects in this study also correctly responded to questions in conversation with 75% accuracy, though there is no data to this effect. Though Shem clearly did maintain comprehension competence, in contrast to the subject in the Berman study, the present data suggest that his receptive language, if evaluated more comprehensively, would have shown declines in some aspects of comprehension. It is clear from the subjects' results in this study that comprehension was compromised, yet it was regained relatively quickly, as in Shem's case. I suggest that neither the three sisters nor Shem actually lost receptive language; it simply became dormant, and they were able to *recover* comprehension skills rather quickly.

The current data provide both a comprehensive, qualitative look at several aspects of language competency and a quantitative description of attrition and recovery of linguistic skills in the pre-bilingual, post-L2 immersion, and L1 re-immersion contexts. Data described here begin to answer the questions: "Can speakers recover/reacquire attrited language?" and, "How much? How well?" There are, perhaps, differences in the way receptive language and syntax are stored and processed compared to expressive language and semantic information.

After the seven month re-immersion period, the subjects moved back to Switzerland and remained there for 12 months, after which they returned to the U.S., to reside permanently. At the time of this writing, they have been re-(re)-immersed for 17 months. Follow up testing is planned within the next year to assess how language recovery/reacquisition over a longer time period compared to the initial 7 month period of re-immersion.

Appendix 1

Sample items for each subtest of the TOLD: 2P, TOLD: 2I, and TOAL: 3

TOLD: 2P

Picture Vocabulary: "Show me (point to) the mirror". Child selects one of four pictures.

Oral Vocabulary: "What's a bird?" Verbal response required.

Grammatical Understanding: "Show me the picture that matches, 'She went quickly'." Child selects one of three pictures.

Sentence Imitation: "Say what I say: 'Her friends walked to school'." Child repeats verbatim.

Grammatical Completion: Child fills in the blank. "A lady likes to drive. Every day she _____."

Word Discrimination: "Listen carefully: cat – can. Are they the same or different?"

Word Articulation: not used for this study

TOLD: 2I

Sentence Combining: Child is to make one sentence out of two to four sentences presented auditorally. "I like cake. I like ice cream." Child responds, "I like cake and ice cream."

Vocabulary: "I am going to say two words. Tell me whether they mean the same, are opposites or neither: automobile...car."

Word Ordering: Child listens to words presented in random order, makes them into a meaningful sentence. "Picked, some, we, flowers." Child responds: "We picked some flowers."

Generals: Child is instructed to tell how a set of words is alike. "Red, brown, green." Child responds that they are all colors.

Grammatical Comprehension: Child tells whether a sentence is correct or incorrect. "He dranked the cola." Child responds: "Incorrect."

Malapropisms: Child listens to a sentence which contains a mistake, and is asked to give the correct word. "Shakespeare wrote beautiful poultry." Child responds: "Poetry."

TOAL: 3

Listening/Vocabulary: From a field of four pictures, child is to point to the two which best represent that word. Sample items: palm, bank.

- Listening/Grammar: Child is presented three sentences auditorally. Child tells which of the three (A, B, or C) mean almost the same thing.
- Speaking/Vocabulary: Child is presented a word spoken by the examiner and asked to use it in a sentence.
- Speaking/Grammar: "Say exactly what I say: 'The red ship sailed into the sunset'."
- Reading/Vocabulary: Child is presented with three words printed in a box, which are related semantically. They are then asked to mark which two, of four additional words would belong to the same set. Example: red green blue . Child is to choose from: yellow, circle, orange, light.
- Reading/Grammar: Child is presented with five sentences in writing and asked to identify two which have almost the same meaning.
- Writing/Vocabulary: Child is presented with a list of written words and asked to write a sentence for each, using the word correctly.
- Writing/Grammar: Same as Sentence Combining in TOLD: 2I above, except that the sentences are presented in writing and the child is asked to write their responses down.

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