DOCUMENT RESUME

ED 216 510 FL 012 854

AUTHOR Barton, David
TITLE Literacy and Awareness of Segmental Structure in Adult Learners.
PUB DATE Dec 81
NOTE 8p.; Paper presented at the Annual Meeting of the American Association for Applied Linguistics (4th, New York, NY, December 27-30, 1981).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Adult Literacy; Adults; Children; Cognitive Development; *Reading Instruction; Student Attitudes; Syllables
IDENTIFIERS *Metalinguistic Awareness

ABSTRACT

This research investigates the amount of metalinguistic knowledge one can assume when teaching an adult to read. In addition, it questions the source of this awareness and whether it relates to general cognitive development, to schooling, or specifically to the act of learning to read. The subjects were sixty monolingual adults enrolled in a learning center. Primary interest is focused on those adults who read below the fourth grade level. Data collected through individual structured oral interviews provides insight into segmentation abilities--specifically, segmental awareness. It was found that adults do make errors of segmental awareness and that the number of errors is a function of literacy level. (JK)

Paper presented at LSA/AAAL meeting, New York, December 1981

Literacy and awareness of segmental structure in adult learners

David Barton,
Department of Linguistics,
University of Lancaster,
England.

Most people learning to read in the world are children and most research on reading is on children's reading. Theories concerned with learning to read are essentially theories of children's reading.

However, many adults do learn to read, both in our culture where there are schemes for those who have 'fallen through the net' and those learning a second language; and in other societies where adults are learning for the first time. Methods and materials for adults are often designed on the basis of theories and assumptions that derive from child research. There has been little research on adults' abilities, consequently our knowledge of adults falls between general research on adults who are literate and these theories of learning to read which are conceived for children.

One ability which is seen as important when learning to read is awareness of language. In general we are able to become aware of many aspects of our linguistic functioning; this awareness serves many uses, ranging from spontaneous self-correction in speech to sophisticated punning and joke telling. This wide range of abilities can be referred to as metalinguistic awareness. Specific types of metalinguistic awareness are seen as prerequisites for learning to read. Studies of children's ability to reflect when approaching to the task of learning to read refer to a 'cognitive confusion' which has to transform into a 'cognitive clarity' in order for the children to master the skill of reading. One aspect of this which has been widely researched in children is knowledge of the units of language. For example, studies have found that children at early stages of learning to read are not clear about the concepts 'word', 'sound', 'letter'. They often cannot adequately define these words and will accept concrete nouns as

words, while rejecting function words such as 'of' and 'the'. Such children usually cannot say how many words there are in a sentence, nor tap accurately for each word spoken. They have problems breaking sentences into words and words into syllables and sound segments; for example, they may treat noun phrases such as 'a drink' as one unit.

In these studies adults are assumed to be able to carry out the tasks perfectly. The child research assumes a baseline of perfect segmentation in adults. Adults are seen as literate, while children are seen as acquiring literacy. But what of adults who cannot read? What metalinguistic knowledge can one assume when teaching an adult to read? Further, what is the source of such awareness and does it relate to general cognitive development, to schooling, or specifically to the act of learning to read? It is these questions that we are addressing in our research. (Further details are given in Barton & Hamilton, 1980 and Hamilton & Barton, 1980.)

Our subjects were adults recently enrolled in classes at a learning centre in San Francisco, California. We were primarily interested in those with reading levels up to fourth grade. As a control group similar in background and years of schooling, we also studied adults with higher levels of literacy who were attending the centre. Our subjects, then, were schooled adults in a literate culture.

They were 60 monolingual adults; they had a minimum age of 18 years; they had been educated in the U.S. and had not attended school beyond high school. They were interviewed within one month of enrolling in adult education according to their reading level. Their grade equivalent reading levels were as follows:

Basic level	(20 subjects)	1.0 - 3.9	mean 2.7
Medium level	(20 subjects)	4.0 - 7.3	mean 5.8
High level	(20 subjects)	7.5 - 12.0	mean 9.1

We were interested in their metalinguistic awareness. The data were collected by means of structured oral interviews, which were conducted individually. The interviews contained items concerned with segmentation abilities, word definitions and knowledge of graphic items, as well as attitudes to literacy and knowledge of languages. Here I will talk only about the parts of the interview that deal with segmentation abilities; I will refer to this as segmental awareness.

The method for this part consisted of saying a sentence to the student such as Everything's going to be different and asking them to first repeat it word for word; then say it one word at a time; then count the number of words; and break certain words and phrases into smaller units. In this example they were asked to break 'everything' into parts and 'different' into parts.

There were six such sentences. The words we examined included:

- words with an ambiguous number of syllables such as 'different' and 'family'. 'Family' is typically spoken with two syllables but written with three. This has been studied in children.
- words composed of words, such as 'myself' and 'always'
- words and phrases beginning with a schwa -, 'around', 'enough', 'a lot'. The idea of investigating these two categories came from an examination of students' written work.
- phrases with a unitary meaning, such as 'more or less';
- and prepositional phrases, noun phrases, auxilary verbs and contractions.

What did we find? Turning to the results, we can see whether adults have problems with segmentation and we can examine whether this is a function of literacy level. In the table we start with an overall measure, Segmental awareness, which was calculated from the sixty-two instances where subjects were likely to exhibit

difficulties with segmentation or make errors of segmentation. It is clear that adults do make errors of segmental awareness and the number of errors they make is a function of literacy level.

Overall segmental awareness

Mean number of errors per subject	basic	medium	high	sig.level
	13.40	10.35	7.40	p .001

Components of segmental awareness.

Percentage of errors for each component

	basic	medium	high	sig.level
Errors identifying number of words in phrases.	52.5	41.3	17.5	p .001
Identifying specific words in a sentence.	32.0	12.0	16.0	p .001
Errors segmenting sentences into words.	22.0	19.3	12.0	p .005
Difficulty syllabifying multi-syllabic words.	30.0	18.0	8.0	p .025
Forgetting part of a sentence.	10.0	7.5	1.7	p .02
Difficulty breaking mono-syllabic words into parts.	50.0	35.0	32.5	n.s.
Difficulty repeating sentence word for word.	4.2	0.8	0.8	n.s.
Inconsistency in segmentation.	23.3	23.3	11.7	n.s.
Difficulty slowing down.	16.7	16.7	18.3	n.s.
Difficulty counting number of words.	16.7	11.7	18.3	n.s.
Errors in counting number of words.	15.0	6.6	15.0	n.s.
Difficulty giving first sound in words.	10.0	21.3	15.0	n.s.

Let us look more closely at these results, by looking at the type of errors that were made. The overall measure was composed of twelve distinct tasks or components. Looking at the results for these, some vary with literacy level while others do not.

Thus, identifying a specific word, such as the first word or the sixth word, was much more difficult for the non-literates than the literates (The second component in the table.) In general, the tasks which gave more difficulty for the non-literates can be characterised as those where the task involved identifying units within units, whether it be words within sentences or syllables within words. Usually, the smaller the unit being broken into parts, the greater the difficulty. An exception to this was giving the first sound in words. This apart, if we look at the nature of these tasks we see that the difficult tasks involve skills which are most specifically associated with literacy, in the sense that they are activities that people engage in primarily when reading and writing.

Other tasks were equally difficult for literates and non-literates alike. These were problems such as counting the number of words in a sentence and experiencing difficulties slowing down to say a sentence one word at a time. These gave a similar level of errors in all groups. These tasks which showed no differences, although related to literacy, are ones which can be seen as aspects of more general skills; memory, attention, etc. The existence of tasks where errors are made but where there is no difference between the groups suggests that in some ways the subjects were functioning at similar levels; it supports our contention that other difficulties, such as identifying units within units, can be associated specifically with literacy. (These results are discussed in greater depth in Barton & Hamilton, 1980.)

We now turn to look at the content of one of these components, the specific errors that adults make when segmenting sentences into words. Firstly, these are not random errors or 'slips of the mind'; specific types of errors are found, and they turn up consistently. Typical errors are treating 'myself' as two words or 'today' as two words. We refer to these errors as conventional errors - where an element of orthographic arbitrariness enters into the decision as to whether or not the form should be written as

one word. Even among the non-literate adults there were very few examples of other errors of segmentation into words.

I want to take this result as an example of our data and examine what the implications of this are for our knowledge of adults' abilities.

Why do such errors occur? We can best answer this question by looking at the criteria which are normally used when analyzing speech. The task we set our subjects is similar to that which linguists face. Linguists decide if a sequence of speech in a language constitutes a word by combining grammatical information with the fact of whether the form can occur freely in a sentence or whether it is always bound to another form. It is not always a simple matter to apply these criteria. One of the places a linguist would experience difficulty in segmenting the English language into words is precisely with cases producing the errors of convention mentioned above. These exist as problems because the grammatical information and the distributional criteria do not give a clear-cut solution to the particular segmentation problem. Thus, in making conventional errors, our subjects are grappling with the same problems of segmentation which linguists typically find difficult. That our subjects made few other errors suggests that they utilize the distributional criteria and the grammatical information of the language correctly; to this extent they demonstrate awareness of the segmental structure of the language.

In as far as we can compare the results of the non-literate adults with the errors reported for children, we can see that there are qualitative differences in the segmental awareness of children and adults. The segmental errors adults make are predominantly the conventional ones. A wider range of errors is found with children. Children make conventional errors - they have to learn the conventions - but they also make other types of errors, like collapsing a drink into one unit, mentioned earlier. In

this situation children are failing to apply grammatical information efficiently. If children genuinely regard these phrases as a single unit, then they have a problem of segmental awareness which may interfere with their learning to read.

This difference between children and adults is an example of the different knowledge which children and adults bring to the task of learning to read. Adults are more sophisticated in their segmental awareness. They do not have perfect segmentation abilities but they can correctly use their linguistic knowledge to break sentences into words. Children's ability to make their linguistic knowledge accessible, however, is still developing. To answer our original questions, adults learning to read do differ from children learning to read in their awareness of language. Adults differ qualitatively from children in the knowledge and abilities that they bring to the task of learning to read, and such differences need to be taken into account when designing materials for adults. Among adults, there are wide differences in the extent to which their language is accessible to reflection. Some aspects of these differences which I have given examples of, are related to their level of literacy.

Barton, D. and Hamilton, M.E., 1980. 'Awareness of the segmental structure of English in adults of various literacy levels.'

Hamilton, M.E. and Barton, D., 1980. 'A word is a word: meta-linguistic skills in adults of varying literacy levels.'