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## **LANGUAGE DISORDERS IN CHILDREN AND NON SPEECH SYSTEMS**

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## **LANGUAGE DISORDERS IN CHILDREN & NON SPEECH SYSTEMS**

### INTRODUCTION

This issue covers the use of sign and symbol systems with children whose principal handicap is a language disorder. In theory, at least, such children are of normal intelligence and any other problems they may have, such as hearing loss, or motor dysfunction, are contributory rather than casual factors in their communication difficulties. These are the children who may attend "language units", or in severe cases, special schools. The classification is a heterogeneous one, which embraces a wide range of disorders; receptive, expressive and phonological. Other terms currently in use include "developmental aphasia/dysphasia" and "congenital auditory imperception".

It is often difficult to separate developmental disorders from acquired, but the distinction may be important in terms of prognosis. Developmental language disorder here is assumed to refer to problems, which are genetic, caused in utero, through birth trauma, or other accident or illness in the first years, which interfere with the early development of language. Acquired language disorder is here assumed to refer to problems caused by extrinsic factors such as illness or accident, which occur after early language has developed normally.

In practice, the distinction is usually not functional for educational placement, which depends on the child's profile of abilities. Groups of such children used as research subjects will often contain both categories (e.g. Lambert 1978). For the purposes of this review, the distinction is made when and only when, the information about an acquired language disorder is provided. Where this is not the case, it is assumed that the problem is developmental (as in Jarro 1978).

You are reminded that my summaries are subjective and can provide guidelines only - do obtain relevant papers if you are interested.

### NOTATIONS USED THROUGHOUT ISSUES

\* Papers/Books available for reference from:

Royal National Institute for the Deaf, Library, 105 Gower Street, London WC1E 6AH  
Tel 01-387-8033

° Papers/Books available for reference from:

Mr. Roger Tallis

BIMH Information & Resource Centre, Wolverhampton Road, Kidderminster,  
Worcs.

Tel: Kidderminster 850251

## DEVELOPMENTAL LANGUAGE DISORDER

\* Hughes, J. (1975)

Acquisition of a non-vocal 'language' by aphasic children

Cognition 3 (1) 41-55

Cross-Reference

MVDP Research Information Service, Vol.1, No.5 PREMACK SYMBOL SYSTEM

### Summary

Aphasic children with serious language deficits were taught to communicate using the Premack system. They readily learned to express several fundamental language functions (word, sentence, class-concept, question, negation). The linguistic status of 'Premackese' is questioned, and it is suggested that it is better viewed as a communication system. The author suggests that the aphasic children lack some specifically linguistic ability.

### Critical Points

1. This is another early paper, which speculates about the linguistic status of non-verbal communication systems. It is worth noting that while we are now clear that sign languages are on a par with spoken languages, the status of a symbol system such as Premackese or NONSLIP is still very ambiguous, and the points made here are relevant.
2. The author argues that if aphasic children are assumed to lack the ability to acquire normal spoken language, then if they are able to learn certain language functions expressed through symbols, this must imply that the symbol system differs in some fundamental way - perhaps modality - from the spoken language.

There are two assumptions here which can be queried. First, that the children had failed to develop the functions in question naturally, and that their language ability was hence deviant. In fact, three of the functions taught are not characteristic of children at their stage of development.

Second, that the crucial variable in their learning of the concepts is the modality - i.e. the Premack system. Since no prior attempts were apparently made to teach the concepts through any other mode (sign - the children had been signing for six months - or speech), it could be the teaching in itself which was the major factor.

\* Jarrow, J.E. (1978)

Signing for communication in hearing youngsters: further support

The Deaf American, 30, 8, 13 (1978)

### Summary

Anecdotal account of the progress of a four year old girl with normal comprehension, but almost no expressive verbal language. During the first five months of teaching signs, she learned to use signs flexibly, combined them and

generalised their use to other settings. After six months training she spontaneously began to accompany signs with verbalisation, and then began to drop the signs.

The successful communication effected through signing led to improvements in behaviour - the child became more outgoing and confident and temper tantrums decreased.

### Clinical Applications

Although this account is anecdotal only, the development of spontaneous speech follows a similar pattern to that described by Schaeffer 1980 (MVDP Research Information Service, Vol.1, No.4) and it provides further evidence that signing is likely to facilitate, rather than prevent, the emergence of speech.

### Lambert, J. (1978)

A pilot investigation of factors influencing signing ability in a group of language disordered children using the Paget-Gorman Sign System  
Two volumes, M. Sc. in Human Communication, Guy's Hospital Medical School.  
Available from: The School for the Study of Disorders in Human Communication, 86 Blackfriars Road, London SE1

### Cross-Reference

MVDP Research Information Service, Vol.1, No.5 THE PAGET GORMAN SIGN SYSTEM

### Summary

A descriptive project analysing in some detail the relationship between spoken and signed language samples of 16 language disordered children of low normal-above average intelligence, at a school using Paget-Gorman Sign System.

There were a number of interesting results, of which only a few will be summarised here.

A within groups analysis, comparing the signed and spoken language of each child, using a modified LARSP indicated that more advanced development was shown on the signed sample. The children were apparently capable of increasing linguistic complexity of expression through using a sign system.

A between groups analysis compared the performance of "good" and "poor" signers (Mean Length of signed utterance provided the criteria here).

It showed that verbal performance was closely related to signing performance. There was a lot of individual variation among the poor signers. Lambert suggests that there may be a sub-group of children whose difficulties lie in motor processing. Children whose speech was unintelligible and who had very poor comprehension, did particularly badly. (There were, however, a number of unintelligible children in the group of good signers.)

A qualitative analysis of the profiles revealed a number of deviations in the signed sample, consisting of omissions, additions, substitutions of the wrong sign, and

inversions of Paget sign order. Inversions, were the most important. The parameters which determined the order of signing seemed to stem from the visual dominance of the signing medium; the priorities of meaning (i.e. the semantic relationships) taking precedence over the syntax.

Eg:                   Daddy big house in work  
                          (Daddy works in a big house)

Lambert claims that “in a verbal language, the relationships in the grammar are time based, and grammar rather than psychological requirements determine the form of the relationships. In the visual language, time-dependent sequences have no central part and non-linguistic factors... (such as chronological order of events, visual prominence, and emotional factors) ...are paramount”.

(It is becoming increasingly clear that the syntax of sign languages is linguistic in nature, but Lambert is correct insofar as the constraints determining sign order are different from those of spoken word order.)

The children in this sample were using Paget-Gorman Sign System more like a natural sign language than a signed version of spoken English. This was particularly true of the poor signers operating at levels where the visual order of events is more evident in the expression of relationships. They produced most of the deviant strings. However, the better signers (who were of course also better verbally) seemed more able to make use of the spoken English grammar. The implication is that their grasp of spoken English grammar helped them to construct correct Paget-Gorman Sign System utterances rather than the reverse.

(Very similar results were found by Fenn, 1976, MVDP Research Information Service, Vol.1, No.3, 11).

Lambert concludes that language disordered children can benefit from the use of a sign system. In some cases, this provides the main communication channel, both receptive and expressive. For others, it can enable them to express more complex constructions and augment verbal language.

The fact that the children’s signing skills paralleled, rather than greatly exceeded, their verbal abilities, suggests that developmental aphasia causes problems which are not limited to auditory processing. However, these children were exposed to signing relatively late, and may have reached a ceiling in development. Studies should be carried out on children who learnt to sign very early.

### Critical Points

This study is a good example of how a small exploratory project may have quite serious methodological flaws, but nevertheless yield more potentially interesting and useful results than a limited design with tighter control. Some of the flaws in this project are spelt out appropriately by the author (e.g. samples of language which were signed and spoken were disregarded in the analysis, thus losing valuable information).

## Clinical Applications

1. Lambert's attempt to isolate subgroups (of good and poor signers) is rather unique in the field. Further investigation is needed, but it may well be that, at any rate, where children with specific language disorders are concerned, those with especially poor verbal skills may also have difficulties with visual sequencing and therefore with sign order (in signed speech).
2. Another group of children may have motor processing problems. Lambert suggests screening for these using tests of motor ability, including speed and accuracy of oral movements (diadochkinetic rate).
3. Anyone interested in research into aspects of the learning and use of signs would find this project very stimulating.

## **ACQUIRED LANGUAGE DISORDER**

\* Abkarian, G.G., Dworkin, J.P. & Brown, S.R (1980)

Signed English as a transitional step in the treatment of a child with Reye's syndrome<sup>^</sup>

Human Communication, 5, 23-28, 1980

### Summary

Case study of the use of Signed English with a child suffering from severe dysparthria after contracting the illness <sup>^</sup>

Vocalisations were used more freely and with less frustration as therapy progressed. A classmate was included in the training sessions, and peer group training seems to have been successful in promoting acceptance by classmates of the boy's handicap. At the end of treatment he could occasionally string three or four words together, but usually used isolated high information signs to convey basic needs - mainly, it was felt, because of limited manual dexterity.

<sup>^</sup> (Reye's syndrome: A viral illness which may result in cerebral oedema and cause brain damage)

\* Brookner, S.P. & Murphy, N.O. (1975)

The use of a Total Communication approach with a nondeaf child: A case study  
Language Speech & Hearing Services in Schools, 6, 131-139, 1975

### Cross-Reference

MVDP Research Information Service , Vol.1, No.5 AMERICAN SIGN LANGUAGE AND SIGNED ENGLISH SYSTEMS

### Summary

One of the early descriptions of sign learning by a boy with severe mental retardation as a result of an accident. He was exposed to a lot of oral language training and could follow written instructions, but it was only when signs were introduced that he began to communicate spontaneously.