Abstracts from the 3rd International Conference on Language and Cognition in Down Syndrome
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POSTER PRESENTATIONS

The reading skills of children with Down syndrome

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The study is concerned with the reading skills of children with Down syndrome attending mainstream schools in Leeds and York.

The study is longitudinal in design.

Phase 1 consists of assessing the reading skills of a population of 45 children aged between 7-17 years.

Phase 2 consists of teaching a sample of the children, assigning them to 1 of 2 different forms of reading intervention.

Phase 3 consists of analysing the results of the teaching intervention.

The theoretical issues underpinning the study are:

1. Children with Down syndrome can learn to read
2. The reading of children with Down syndrome shows use of phonological skills
3. Children with Down syndrome can benefit from being taught reading with an emphasis on phonological awareness training.

Language, gestural and symbolic abilities in children with Down syndrome

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Research on children with Down syndrome in the early stages of language acquisition has shown that there is a dissociation between cognitive and verbal abilities and a preference of non-verbal modality of communication. Few studies analysed language, gestural and symbolic abilities in later stages of development. The aim of this study is to investigate the relationship between gestural and vocal production and the ability to imitate sequences of symbolic play in Italian children with Down syndrome (4 to 7 years).

Fifteen children with Down syndrome participated in this study matched with fifteen typically developing controls on the basis of mental age (29-30 months). To each child was presented a set of objects in order to elicit gestural and verbal labelling. Each child was also requested to reproduce episodes of pretend play accompanied with verbal comments. Results will be discussed underlining similarities and differences between the two groups.

Role of speech and language therapy: Models of service delivery with people with Down syndrome

Tessa Duffy
Specialist Speech and Language Therapist
Managing Director Symbol UK Ltd. (Email: symboluk@compuserve.co.uk)

Deirdre Clark
Specialist Speech and Language Therapist
Leela Baksí
Specialist Speech and Language Therapist

This poster presentation describes a model of service currently delivered within four Education Authorities within England and is proposed as a model of good practice. The presentation will include a review of the clinical outcomes achieved with the children served and the resource requirements for the provision as described.

Early years: focus on developing an appropriate communication environment at home, developing early speech, language and communication skills

Primary school (KS 1 and 2): supporting school staff to promote the child’s overall development (educational, social, personal) focusing on building the child’s skills in respect of accessing opportunities at school, both learning and social; continued development of speech intelligibility, language and communication skills. To share specialist knowledge and evidence based practice concerning Down syndrome and to assist staff in developing strategies to support communication.

Secondary school (KS 3 and 4): enabling and supporting the child’s participation in learning situations at school; sharing specialist knowledge concerning Down syndrome and effective strategies for staff. Continued development of speech intelligibility, language and communication skills.
Investigating abuse in children and young people with Down syndrome - The impact of language and cognition

Tessa Duffy
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This poster presentation will describe the work of an investigation into alleged abuse in a service for children and young people with learning disabilities over a seven year period. Although not over represented within the cohort, 50% of the subjects interviewed by the Investigating team had Down syndrome. Participants were selected on the basis of an agreed inter agency vulnerability criteria. This suggests a greater concern as to their susceptibility to potential abuse within the general learning disability population.

The paper will present the vulnerability factors as perceived within the cohort.

The paper will propose that the same factors which in the experience of the investigation team put the clients at risk of abuse, create barriers to investigation.

The poster presentation describes the process of undertaking videotaped interviews.

The presentation will describe the stages of the interview and the language and cognitive difficulties presented by the young people with Down syndrome.

The presentation will detail the strategies that we have developed to assist the subjects to share their experiences.

The presentation will detail the outcomes of the interviews. The paper will explore the interplay between cognitive abilities, language skills and the impact of facilitation techniques.

The acquisition of signed and spoken language by twins with Down syndrome: A longitudinal perspective

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This study will report on the unique case of hearing twins with Down syndrome born to parents who are profoundly deaf, who are functionally bilingual in speech and sign. The children separated language use by context, using speech exclusively to each other and at school, but sign language when in the presence of their parents. Extensive assessment data was collected in both languages when the children were 10 years old (Woll & Grove, 1996). Results from tests of their intelligence and spoken language were as follows:

- nonverbal cognitive skills were in advance of verbal skills.
- phonology and articulation were delayed, affecting intelligibility
- nonverbal cognitive skills were in advance of verbal skills. In particular, both children scored highly on tests of gesture production.

These results suggested that visual and motor skills were relative strengths for the children. It might therefore be predicted that their skills in sign grammar, which deploys space and movement in linguistically constrained ways, would be greater than their skills in the grammar of spoken English. However, a test of BSL production and comprehension showed some specific delays and impairments, particularly in the marking of spatial locations, suggesting that one of the underlying difficulties lay in the area of spatial representation. Sign language, as opposed to a sign lexicon, may be no easier for children with Down syndrome to acquire than is spoken language, although the profile of strengths and weaknesses will differ depending on modality constraints.

Data have now become available on the children’s communication at the age of 3. This poster will present the results from an analysis of their language development in speech and sign.


This study was funded by a grant from the Down’s Syndrome Association.

Adults with Down syndrome: An investigation of the effect of reading on language skills

Christine Jenkins, John MacDonald, and Sue Buckley
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Communication difficulties are recognised as a major factor limiting participation in the community for people with Down syndrome. This 2 year study is designed to investigate the effect of teaching reading skills to adults with Down syndrome as a means of enhancing language competence. Whereas research has underlined the role of reading in accelerating language development in young children and adolescents with Down syndrome, there have been few studies into the application of this approach with adults. Fowler (1994) suggests that reading could be introduced beyond adolescence, and that there may be many advantages to this. The presentation will describe the intervention where reading was used to support a structured language programme for with a group of people with Down syndrome and their progress compared with a group receiving the language programme alone. Interim results indicate that both groups made significant progress with aspects of language, and that some people with Down syndrome can acquire reading skills as adults. Results from the second year of the study will also be included.
Difficulties in children with Down syndrome. It has been part of her research into the underlying causes of speech. The profile was designed originally by Pat Le Prevost, as Oxford, England (Email: PatriciaPrevost@aol.com)

This research investigated visual memory in individuals with Down syndrome compared to typically developing children matched for receptive vocabulary. A colour memory experiment contrasted memory for basic colours with memory for non-basic colours. Colour memory research would suggest that, for the typically developing children, the more easily named basic colours should be better remembered than non-basic colours. However, since the individuals with Down syndrome were not expected to use a verbal strategy to remember the colours, they were expected to perform equally well on both colour memory tasks. As predicted, basic colour memory was more successful than non-basic colour memory for the typically developing children. Although the individuals with Down syndrome had better Corsi spans, and had equivalent levels of colour knowledge to the other children, they did not outperform them on the memory tasks. As predicted, individuals with Down syndrome produced similar memory scores for the two sets of colours.

Down syndrome profile for speech production

Pat Le Prevost
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The profile was designed originally by Pat Le Prevost, as part of her research into the underlying causes of speech difficulties in children with Down syndrome. It has been modified and updated by Speech and Language Therapists – Leela Baks, Deborah Pugh and Deidre Clarke.

It monitors all the aspects of speech development, the influences on the development, and on the outcome. It takes into consideration – articulation, phonological development, motor planning dyspraxia, and the maintenance of intelligibility in connected speech.

It is completed by the clinician and the parents together, and takes onto consideration the fact that the children do not necessarily follow the usual developmental pattern of speech acquisition.

It places the results upon a scheme that not only monitors progress, but also provides a programme for remediation.

There are several papers that indicate the underlying difficulties and the need to take them all into consideration when planning a programme for remediation.

“Children with Down syndrome take much longer to develop the ability to produce clear speech, and some have more difficulty than others in developing this ability” (Miller and Leddy). “The speech intelligibility of individuals with Down syndrome limits the effectiveness of their messages” (Miller, Leddy and Leavitt).

“It would be prudent to use intervention methods that focus on oral motor integrity during the early period of development” (Miller)

“A survey of 937 parents found that 95% of their children with Down syndrome sometimes of frequently had difficulty being understood” (Kumin, 1994)

Miller and Leddy (1998) argued that people with Down syndrome have intelligibility impairments that are due to both biological speech factors and specific linguistic production problems affecting fluent speech.

“Intervention involving the speech intelligibility of children with Down syndrome necessitate a multifaceted approach involving techniques associated with a variety of disorders” (Rosin and Swift)

“The use of drill and an emphasis on functional language are not mutually exclusive” (Camarata, 1995)

The profile will be presented.

Life skills and literacy for the non-reader: How to make a start

Wendy McHugh
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This poster session will provide delegates with a demonstration of the new piece of lifeskills software - ‘Out and About’ and a brief explanation of the rationale behind each module.

‘Out and About’ has been developed in collaboration with The Home Farm Trust and Keele University as a result of the need for appropriate software for older learners which still has strong educational content. Following the new National Basic Skills Curriculum closely, the modules are aimed at the Entry Level 1-3 ability group and include basic literacy and numeracy activities, problem solving, spatial awareness and visual/perceptual discrimination (essential pre-reading skills).

Extensive use has been made of real-life signs, symbols, photos and video and the software is intended for use in schools, colleges, community education and social services with users from the age of 16 – 60+ !

Also, delegates will have the chance to preview another new product ‘Assessability’ - still in its ‘trialling’ stage. This is an educational assessment program aimed at those users with learning disabilities working at Entry Levels 1-3. It is being produced in association with NFER/Nelson, who are market leaders in the educational assessment field.
Development of counting in children with Down syndrome: A longitudinal study

Joanna Nye, Mike Fluck, and Sue Buckley

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Results are presented from a two year longitudinal study of the development of counting and cardinal understanding in children with Down syndrome, with particular reference to the role of parent-child interaction. 21 children with Down syndrome (3–7 years old at Phase 1), and their parents were observed while engaged in two types of counting activity: object counting, and a ‘give x’ task. The count task was performed in two conditions – with and without parental support. Significant progress has been made by the children with Down syndrome over the two years, both at object counting and at applying counting to the give x task, indicating an understanding of cardinality. The children were able to count larger sets of items than they were able to give, as is the case in typically developing children. Parental involvement was found to improve the children’s counting performance significantly.

Communicative competence in adults with learning disabilities

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Data from naturalistic conversations between twelve adults with learning disabilities (five with Down syndrome) and resource centre staff provide evidence supporting the proposal that adults with LD are at risk for experiencing frequent communication breakdown (Brady, McLean, McLean & Johnson, 1995). Eighty six percent of conversation episodes contained metalinguistic discourse maintenance strategies (MDMS): requests for clarification (RQCLs) and repairs. Thirty five percent of utterance turns contributed to prevention or alleviation of misunderstandings rather than topic progression (Abbedutto & Rosenberg, 1992). Staff produced a significantly higher proportion of RQCLs which may reflect their dominant social role (Verschueren, 1999) as well as adherence to the co-operative principle (Grice, 1975) in negotiating utterance meaning. The high incidence of specific RQCLs represents an asymmetrical shift in responsibility for conveying the message away from the speaker onto the listener thereby reducing the participants’ perceived communicative competence (Sperber & Wilson, 1986) and increasing opportunities for learned helplessness (Donahue, 1984).