Researchers
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Aim
To assess prosodic ability ('tone of voice' and verbal punctuation) in children with autism: is it reduced and/or deviant compared with controls, and is it related to other language skills?

Project Outline/Methodology
31 children (target: 30) aged 6-13 with high-functioning autism (but not Asperger's syndrome) and 72 typically-developing controls were matched for verbal mental age and assessed for prosodic ability. The children with autism were also assessed for other parameters that affect communication, namely their ability to understand grammar, to express themselves in speech and to articulate consonants clearly and correctly; their non-verbal or cognitive ability and pragmatic skills were also tested.

Key Results
Prosodic skills vary from child to child, but there are significant areas of difficulty in children with autism, namely understanding and producing affect/emotions by means of prosody; producing contrastive stress; and hearing and imitating prosodic differences. Language skills varied, but most of the children had deficits in at least one aspect of language, with expressive language most severely impaired. Prosody correlated highly with receptive and expressive language skills, but no aspect of it correlated with articulation, non-verbal ability or pragmatic skills. Some children had atypical articulation.

Conclusions
Prosodic deficit is likely to be present in autism and to cause communication difficulties and social barriers.

What does this study add to the field?
Little was known about prosody in autism (16 studies in the last 20 years), and it was generally thought that articulatory skills were preserved. There was no accepted means of assessing prosodic ability comprehensively. The study provides knowledge of several aspects of prosody in autism, including possible links with Theory of Mind skills; insights into articulatory skills; ideas for strategies to increase prosodic awareness; a tool for assessing prosodic skills, and normative prosodic data.

Implications for Practice or Policy
The study shows that investigating prosody in autism is clinically important because of our conclusions; and prosodic problems are often life-long even if other areas of language improve. Speech and language therapists need to be more aware of the communicative and social problems of disordered prosody; also that articulatory skills may be disordered in children with autism. Since prosodic skills correlate with other language abilities, linguistic strengths are unlikely to compensate for prosodic deficits. Receptive prosodic impairment may have implications for the development of language and social comprehension as well as for understanding the many functions of prosody. A pilot therapy programme showed that activities to increase prosodic awareness can be devised.

Where to next?
As a result of this project, the following projects have been initiated: 1. Further research into prosody in autistic spectrum disorders (children with Asperger's syndrome, funded by ESRC); 2. Investigation of the longitudinal development of prosody in autism and its relationship to Theory of Mind skills; 3. Intervention targeting awareness of the role of prosody in language; 4. Developing the prosody test for use by clinicians as well as researchers; 5. Gathering a repository of worldwide normative data on the prosody of spoken English.

Further details from
Our website: http://sls.qmuc.ac.uk/research/autism/index.htm

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