

Best behaviour

Largely misunderstood by the public, autism affects not only children but adults, and it has a massive impact on those who care for them. A new study at Southampton's School of Psychology has been looking at improving the life chances of autistic children through early intervention.



IN the early 1970s, leading behavioural psychologist Dr O. Ivar Lovaas proposed that children with autism could benefit from early intervention aimed at teaching a range of cognitive, language and self-help skills using reward-based methods.

At the time, such claims seemed fanciful but, throughout much of the 1970s and 80s Lovaas worked to develop intensive intervention strategies based on a form of psychological learning theory known as applied behavioural analysis (ABA). The resulting report, published in 1987, had a major impact on how researchers, clinicians and parents perceived the nature of autism. What Lovaas claimed to have shown was that, after three or more years of home-based intensive intervention starting in the pre-school years, 47 per

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cent of the children treated 'achieved normal intellectual results and educational functioning, with normal-range IQ scores and successful first grade performance in public schools.' This compared with just two per cent in his comparison groups, which received less intensive ABA treatment or treatment as usual over the same period.

Fast forward to 2006 and the University of Southampton has been assessing Early Intensive Behavioural Intervention (EIBI), based on Lovaas' ideas, to inform education and healthcare policy in the UK. It's all being done in response to a recent groundswell of interest in Lovaas' work from the parents of autistic children.

Professor Bob Remington, who is leading the study at

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Southampton's School of Psychology, explains that interest grew massively as parents began to access the Internet. 'A few years ago, we suddenly started receiving enquiries from the parents of autistic children who could see how positively Lovaas' research was viewed by educators in the USA, and how much interest it had generated,' he says. 'Understandably, they wanted to know what was happening in the UK and whether any similar research was happening here. At the time there was nothing; and most Local Education Authorities (LEAs) didn't offer ABA, seeing it as just one approach among many.'

With the need for further research established, Bob and his colleagues approached the first obvious source of funding. ▶

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'We talked to the LEA at Southampton City Council about the prospect of starting a research project here,' he recalls. 'They responded very positively and, after a scoping study, the project was funded by a consortium including ten additional LEAs in the south of England.'

With the support of funding from the LEAs, Bob, and co-grant holders Professor Richard Hastings and Dr Tony Brown, assembled a team of ABA experts, led by Francesca degli Espinosa, and identified 24 children with autism, aged around three years, to form the Intervention group. At the same time the Health Foundation awarded the team a grant to monitor a Comparison group of 21 children, each receiving the LEA standard preschool provision. The Southampton Childhood Autism Programme (SCAMP) was born.

For ethical and practical reasons, the team did not contemplate randomly assigning the children to the Intervention and Comparison group. Instead, their parents chose what kind of pre-school intervention suited them best and the study was essentially a field evaluation of the EIBI. 'We recruited comparison children through local parental and other support groups, offering regular assessments of their children,' explains Hanna Kovshoff, who joined the team in 2001 to lead the assessment arm of the project. 'We needed to find children in the right age band because intervention is claimed to be most effective when children are young and learning potential is high.'

The children in both groups met explicit criteria. They had to be formally diagnosed with autism, be around three years old and have no health problems that could skew the results. Intervention needs time to work. SCAMP had initial funding for three years to provide two years of intervention for each child. The costs were great due to the intensive nature of the intervention process.

Inside the Intervention group

For each child, the team first trained parents and up to four hands-on tutors — often psychology students gaining clinical experience — to deliver the intervention for around 30 hours each week. 'The sessions themselves were conducted in the home environment,' explains Bob. 'Francesca and her team then visited for further training and to review progress every one or two weeks.' 'It was a hard slog to provide a quality service,' adds Francesca, 'We had to travel all round the South of England, from Poole

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Professor Bob Remington

in the West, to Hastings in the East and High Wycombe in the North. But the changes we produced for many children made it very worthwhile.'

While mainstream children are able to develop and learn without special help, children with autism need a helping hand to achieve their potential. EIBI provides that help. As Corinna Grindle, another member of the team explains, for EIBI you need high levels of interaction between children and tutors at every step. 'For every child the tutor team organised carefully planned daily teaching sessions,' she says. 'Skills like language and communication develop only gradually — so each new task is based on what the child can do already and the programme just builds.'

'With ABA you break every task down into component parts so that the child can absorb the information easily,' adds Hanna. 'We make it fun too. Reward, play and imitation are the main educational tools. Because autistic children pick up basic skills slowly, this is a process that takes time.'

'We aimed to give the children 30 hours of intervention per week from the tutor and their parents, so the child learns and practices new skills in real life situations.'

Measurement and results

To keep scientific tabs on how both groups of children were progressing, the team used standard tests to measure how IQ, language, and adaptive skills were changing over time. 'Adaptive skills and social functioning are harder to assess than IQ as they require different kinds of tests involving parent interview and observation,' says Hanna. 'Despite this, we were still able to identify strong trends in each.'

'The results of the testing were pretty strong for IQ change,' adds Bob. 'We showed clearly that the children receiving EIBI gained

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significantly in IQ when compared to children receiving standard provision. These differences were the result of intervention — the groups did not differ in average IQ score before we began.'

'Six of the children in receiving EIBI showed large increases in IQ that took them way beyond the expected range of improvement based on the group's baseline scores and none deteriorated in this way,' adds Hanna. 'Only three children in the Comparison group showed such large positive changes and, unfortunately, another three Comparison children in that group showed a similarly large deterioration in IQ.'

Bob adds that the children receiving EIBI also displayed a greater level of adaptive skills and language than those in the Comparison group.

Using the data

'The SCAMP team are all very positive about the findings,' says Bob. 'Our work extends earlier US research to the UK educational context; it confirms that systematic teaching can enhance the life chances of children with autism.' Another tranche of funding, this time from the Esmée Fairbairn Foundation, is allowing the team to follow up the children at school, two years after the end of the programme. The data from this new study will help to establish how long-lasting the effects of treatment are. 'We will be looking at how we can maximise and extend the benefits,' Hanna comments, 'perhaps by developing new methods of intervention and using new technology to reduce costs.'

Another issue for SCAMP concerns the family unit — how do parents and other members of the family cope with the intensive intervention regime? Do the Intervention group families have more or less stress than their Comparison group counterparts? The results so far have been largely reassuring. 'We looked at this two ways,' says Corinna. 'Statistically, parents in the two groups don't

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differ much on standard measures of stress and mental health. But we wanted more qualitative information and the Esmée Fairbairn Foundation again funded us to carry out an interview study. This identified many issues — EIBI treatment is certainly demanding on all the family — but most parents were very positive: they felt it was the best thing they could have done for their child.'

Despite SCAMP's success, the questions raised by the team's results require complicated answers. Inevitably, such intensive intervention is costly and LEAs are reluctant to expend vast sums on individual children when budgets are already stretched. The counterargument is that the lifetime cost of caring for a person with autism could be massively reduced as a result of intervention — research shows that this approaches £3 million for every individual. Policy decisions, inevitably, will be left to those holding the purse strings: what is certain is that the Southampton research will contribute positively to the debate. ☐

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FACTS: AUTISM

- An estimated 535,000 people have autism in the UK
- The cost of keeping a person cared for through educational, social and other community services amounts to around £3 million in a lifetime
- 40 per cent of all children with autism wait more than three years for a clear diagnosis
- Boys are four times more likely to develop autism than girls