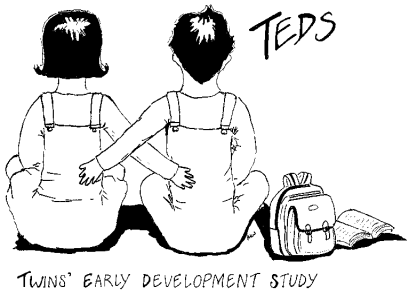


TEDS NEWS

Autumn 2001

Twins Early Development Study
113 Denmark Hill,
Freepost LON7567
London SE5 8AF

Freephone
0800 317 029

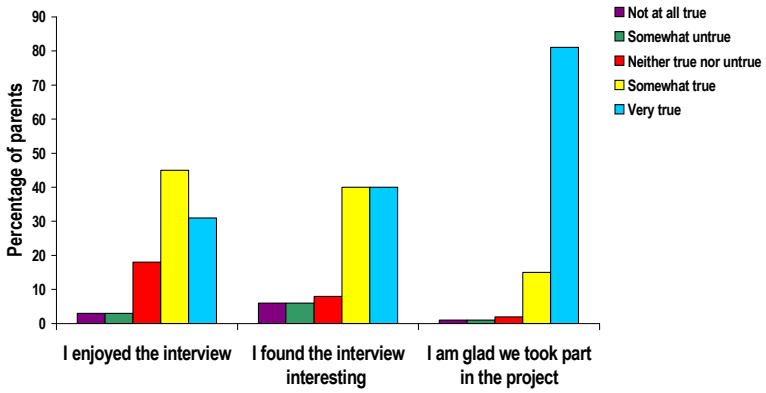
IT'S GOOD TO TALK!

Several thousand TEDS families helped us this year in our study of the first cohort of TEDS twins at seven. This involved the twins born in the first part of 1994—the rest of you will be hearing from us in the next two years.

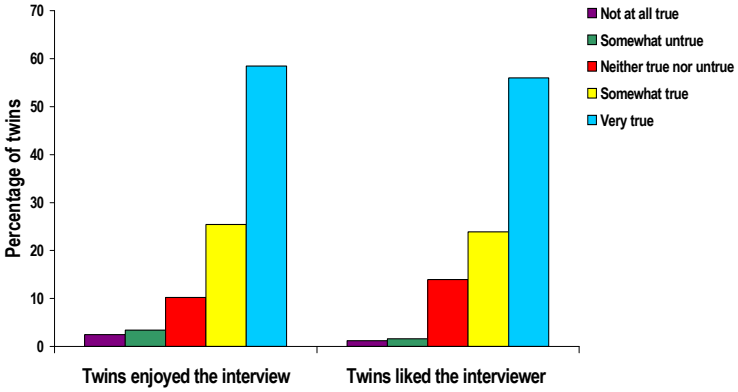
This was a major exercise in telephoning, and we definitely felt that the twins were the stars! Most of them seemed to enjoy their telephone call and worked tremendously hard to answer the questions. We are very grateful too to all parents who made time in their busy day to answer our questions over the phone. We have gathered a wealth of information about the twins' development in a wide range of areas and we are very excited about starting to analyse it this year.

We also had an excellent response from the twins' teachers—over 85% of them returned questionnaires about the twins' progress in school. Quite a few parents took the trouble to get in touch with us to let us know how they felt we could improve the study. We are building all these ideas into our plans for next year. Some parents said that they would rather fill in a booklet than spend time on a telephone call, so we will be offering this option in future. We have also made the twins' interviews a little shorter. We hope that these changes will make the study easier and more flexible for you.

Responses to TEDS Seven Year Interviews
Feedback Questionnaire: Parent Interviews



Responses to TEDS Seven Year Interviews
Feedback Questionnaire: Twin Interviews



HOME VISITS AT FOUR

Now that the TEDS twins are growing up, the home visits to the twins at four are coming to an end. Whilst in the home we administered some developmental tests using puzzles, blocks, puppets, etc. This has given us valuable in-depth information about the verbal and cognitive development of a large group of children. Our first analyses of the data show that there is quite a big overlap between children's language and thinking at this age. This trend is particularly noticeable in identical twins, which suggests that the same genes are influencing both verbal and cognitive development.

Our researchers have visited over 800 families all over England and Wales, travelling over 170,000 miles to reach you all. We lost our way a few times too! The TEDS team has visited or passed through most places in the UK. So here's a big THANK YOU to the twins' for playing with us and to you for making us feel welcome, oh and for all the cups of tea!

NEW!

We are pleased to say that we now have an email address.

You can contact us at:

TEDS@iop.kcl.ac.uk

If you send an e-mail you want to reach a particular person, it would be a BIG help if you tell us who it is for in the subject line. At the last count there were about 50 people working on all the different aspects of TEDS!

WHAT IS DNA? WHY LOOK AT IT?

DNA (**D**eoxyribo**N**ucleic **A**cid) is extracted from the cheek swabs that you have so kindly provided. Our overall aim in looking at this DNA is to learn how genes affect human development.

DNA is found in the nucleus of every cell in our body. Put end to end it would look rather like a twisted ladder about 3 metres long with 3 billion rungs! The rungs are made of things called bases. There are four kinds of base (A,G,T,C) and these 'letters' carry all our genetic information. They combine to spell three letter 'words' which in turn come together to make a "recipe" for a cell to make a particular protein. Proteins play an important part in the way that we grow and develop. A gene is simply a section of this DNA ladder that carries the instructions to make a specific protein.

We share most of our DNA, but the DNA letters differ between individuals by a very tiny amount — 0.001%. But enough to make about 3 million changes in the 3 billion ladder rungs! These letter changes make for slight variations in the proteins an individual makes and this in turn can make for changes in growth and development.

On 26th June 2000 the Human Genome Project reported a draft sequence of the 3 billion steps in the DNA 'ladder'. We now know that we have somewhere between 30 and 40,000 genes most of which are active in the brain and thus likely to affect aspects of development of interest to TEDS.

If you want to find out more about DNA and genes, a good starting point is *Genome* by Matt Ridley (HarperCollins, 2000).
If you prefer to use the internet, there is a useful site at http://vector.cshl.org.
This site is geared to people who do not have a scientific background. One section, *DNA from the beginning*, succeeds very well in taking a beginner from concepts of basic inheritance through up-to-the-minute methods of DNA analysis.

MULTIPLES IN SCHOOL WEBSITE

Special challenges face parents and teachers of twins and higher multiples. TAMBA (Twins and Multiple Births Association) has just launched a new website (http://www.twinsandmultiples.org) devised for parents, teachers and other professionals to provide accurate and up-to-date information to help children and their families to get the best out of their education. There are five main topics: Multiple Facts and Figures; Pre-School; The School Years; Special Needs, as well as links to other Twin and Multiple Birth websites. As well as resource material, each section has checklists, for example on school readiness, deciding whether to place twins together or apart, and identifying and helping children's behaviour problems. It is hoped that this website will be the basis for an ever expanding resource that will serve multiples, their parents and professionals.

YOUNG SIBS WANTED!

IF YOU WOULD LIKE YOUR YOUNGER CHILDREN TO BE PART OF TEDS PLEASE GIVE US A CALL ON OUR FREEPHONE NUMBER.

0800 317029

MIRROR TWINS

Over the last year there have been quite a few calls to the freephone line asking us if we know anything about mirror twins. When we did a little research on the internet, we were rewarded with about 50,000 references! So there's a lot of information and interest out there!

Approximately 25% of identical twins show some form of mirror reversal, some of the most obvious being the direction of the hair growth on the crown, (clockwise in one twin, anti-clockwise in the other), location of physical marks like moles and preferred writing hand, one twin being left handed, the other right handed. The reasons for this are not fully understood, but one popular theory is that mirror-image twins are identical twins formed when the embryo splits later in its development than usual. When the cluster of cells does finally split, there is already a formed right side and formed left side with one twin developing from each side. There are even medical examples where one mirror-image twin has internal organs on the right side of the body and the other on the left.

Here are three references you might like to follow up:
http://www.twinstuff.com/mirrors.htm
http://www.academicpress.com/www/journal/hbm2001/10336.html
Entwined Lives by Nancy L.Segal (Penguin 1999)
A book examining all aspects of twin life.

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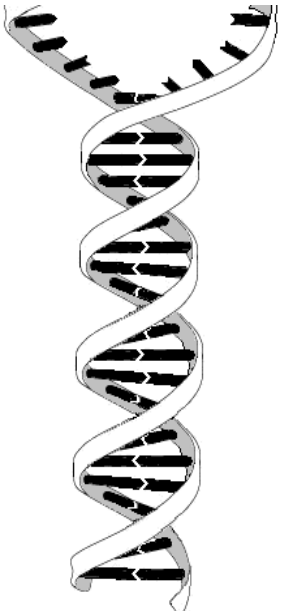
BOTH NATURE AND NURTURE

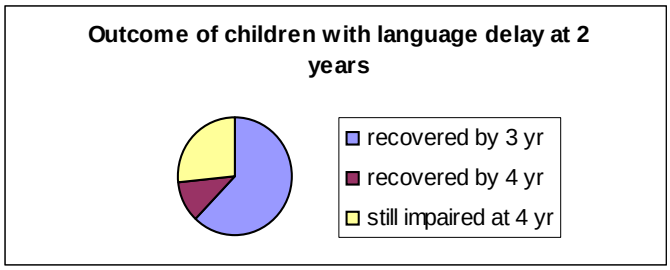
Twins have been very influential in making people realise that genetics (nature) is more important in development than was generally thought to be the case just a decade ago. Then there was a widespread belief that the most important influence shaping children's development was the family environment (nurture). In some cases where children had problems in their development, this could mean that parents felt that they were completely responsible for their child's difficulties and suffered unnecessarily. Obviously what parents do matters a lot, but it is now accepted that genes indicate possibilities that are then increased or decreased by environmental forces.
Studying twins helps us to understand this interplay better by comparing the resemblance of identical and non-identical twins. For a particular trait, genetic influence is suggested to the extent that identical twins (who have the same genes) are more similar than non-identical twins (who share half their genes like brothers and sisters do). TEDS has shown that genetic influence on language and cognition increases during childhood, though family environment and experiences also play a major role. Every bit of data that you provided is being analysed in this way. Recently published TEDS results on specific aspects of development suggests strong genetic influence early in development for hyperactivity, asthma, body weight and overweight, and even ear infections. Less genetic influence is found for some traits such as bladder control and gender roles (the extent to which girls will be girls and boys will be boys.)
Call our freephone number if you would like more detailed references to our publications.



THE DOUBLE HELIX OF DNA

EARLY LANGUAGE DELAY

Concern about slow language development is one of the commonest worries for parents. Very often children outgrow it, however for some children it may be the first sign of longer term difficulties in communication. In such cases it is obviously important that children be offered help at an early stage. TEDS has provided a unique opportunity to find out more about the causes and consequences of language delay in a large group of children. We focused on 600 children who had very small vocabularies at two but did not have any medical problems. By four years of age a very high proportion had caught up. It is sometimes thought that twins are more likely to develop slowly in language, however the rate of recovery we found is similar to those reported for singleton children and we have found no evidence that twinning is a cause of long term difficulties with language.
However a minority of children were continuing to experience difficulties. Could we have identified them at 2 years on the basis of the information parents had given us? Unfortunately the answer was 'No' but it is possible that we might have been able to if we had been able to offer a more detailed assessment: this is something for future research to address. What is clear is that if a child is experiencing significant language problems at four, it is not just a 'normal' part of being a twin, but that additional help may be needed for the child.



Although we could not separate out the children who caught up from those who did not, our genetic analysis suggests that the two groups were different.
We estimate the importance of genes in affecting development by looking at identical versus non identical twins. Our findings suggest that for the 'late bloomers' who recover, inherited factors play little part in causing their early language delay. However genetic factors do seem to be implicated where more persistent problems are concerned. This finding suggests that we should be concerned about a child with language delay who has other family members who have speech or language difficulties.
If you would like to know more about language development and delay :
AFASIC: organisation dedicated to providing information about all areas of speech and language impairment
Helpline: 0845 355 5577 (11am—2pm Mon to Fri)
Http://www.afasic.org.uk

OCCSI: Oxford Study into Children's Communicative Impairments.
http://epwww.psych.ox.ac.uk/oscci/

TEDS GOALS

TEDS is funded by the MRC to look at the connections between three major issues in children's development: language, cognition and behaviour. In general we are finding that the links between language and cognition are stronger than had been thought previously, and the genetic underpinnings of these links are stronger still. What about behavioural difficulties such as anxiety and hyperactivity? Interestingly enough here we are beginning to find that behaviour problems are less tightly linked to problems of language and cognition than was previously thought. Much research has looked at small samples of children who have multiple problems, but TEDS is a representative sample which paints a more accurate picture of what children are really like. That is why TEDS is so large: we want to study problems of children's development within the context of normal development.

USEFUL CONTACTS

Multiple Births Foundation (MBF):
020 8383 3519 (Day) -
http://www.multiplebirths.org.uk

Twins and Multiple Births Association (TAMBA):
Twin Line: 01732 868000 (Eves/weekends)
http://www.tamba.org.uk
http://www.twinsandmultiples.org (Education)

Twins Club:
Http:// www. twinsclub.co.uk

Parent Line:
0808800 2222 (9 – 9pm weekdays, Sat 9.30 – 5, Sun 10 – 3) - offers support for all those looking after children
http:www.parentlineplus.org.uk

Advisory Centre for Education (ACE):
0207 354 8321
(wkdys 2 - 5) - helps parents in dealing with the education system.

Department of Education Parents' website:
http://www.parents.dfee.gov.uk - gives information about your child's education and how you can help.

International Society for Twins Studies :
Http//www.ists.qimr.edu.au

Adult twins sometimes ask us if there is any way that they can get involved in research. Volunteer registers for adult twins are run from:
St Thomas' Hospital: 020 7922 8137 Institute of Psychiatry: 020 7848 0416

Please tell us if you have found a helpful organisation that you think we should feature here, or if you have any other ideas for future TEDS newsletters.

Last year hundreds of TEDS families moved!
New home? New phone number?
DON'T FORGET TO TELL US by filling in this slip and returning it to us at our FREEPOST address, or by ringing our FREEPHONE. Number or by e-mailing us at TEDS@iop.kcl.ac.uk

- - - - - - - - - - - - CUT HERE- CUT HERE- - - - - - - - - - - - - - - -

To: TEDS 113 Denmark Hill, FREEPOST LON7567 London SE5 8YZ

Your name………………………………….***Your twins' names***……………..……***&***………………..………….

Your old address……………………………………………………………………………………..………..

Your new address……………………………………………………………………………………..………

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Postcode……………..………………………………………***Telephone***……………………..……………..………

FREEPHONE 0800 317029