Nestlé Social Research Programme

Incorporating the Nestlé Family Monitor

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SCIENCE IN MY FUTURE

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A study of values and beliefs in relation to science and technology amongst 11-21 year olds.

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1 FOREWORD

This is the first study from the Nestlé Social Research Programme (NSRP), a successor to the Nestlé Family Monitor.

The NSRP will focus on independent social research that will, over time, build up a picture of the health, lifestyle and aspirations of the nation's young people.

'Science in my future' looks at the views and attitudes of 11 to 21-year-olds on science and scientists. The study is produced by Professor Helen Haste who is Director of Research for the Nestlé Social Research Programme.

Professor Haste has uncovered some fascinating new facts - as well as finding fresh insights into current understanding - and you will find a summary of these at the beginning of this study. The in depth analysis of the gender differences are of particular interest as well as the findings on ethical issues. The report will, I believe, have important ramifications for those concerned with the teaching of science, the communication of science and the recruitment of young people in the field of science and technology.

Alastair Sykes
Chairman and Chief Executive
Nestlé UK Ltd.

2 SUMMARY AND COMMENTARY

Science and technology are increasingly central to our lives.

Not only do we need constantly to update our skills, we are also seeing a cultural change in the form of much more public discussion between scientists and the public.

There is, however, concern that young people – particularly girls – seem decreasingly interested in certain areas of science.

This would bode ill both for successful public debate, and for the development of an expert future workforce to meet our national needs.

From previous research, we know quite a lot about adult beliefs and values around science, but we know rather less about the views of young people – the future 'public'. In particular, we know relatively little about how young people's beliefs about science and technology relate to their values. A major issue is 'green' values; we know that many young people are highly engaged with the environment, and have ethical concerns connected to scientific developments, but we do not know how this relates to their views of science. Are 'green' values 'anti-science'?

This study explores first, the overall picture of young people's interest, beliefs and values around science and technology, and second, how different patterns of values are associated with gender, with interest in science, and with young people's age. We also explore trust in government and in scientists, and how far young people feel able to influence public and community affairs; are young people who have strong ethical concerns more likely to be involved in the community?

The Nestle Social Research Programme commissioned MORI to undertake fieldwork among a representative sample of 704 young people aged 11-21 years old across Great Britain to identify their views and interests in this area.

We found that overall, young people are quite supportive of scientific developments, but they are very sensitive to ethical issues and to claims that science and a 'scientific way of knowing' can be widely applied to human and social problems. However, contrary to what might be expected, questioning science does NOT appear to be the prerogative only of those who are uninterested in science. The strongest critique and scepticism came from those most interested in science – particularly and strikingly from girls.

Boys, on the whole, fit the more predictable and conventional picture of enthusiasm for technology, for 'fixing' problems through science and for a 'scientific' approach. They are also less interested in ethical issues. In contrast, the girls who would be interested in a job related to science are less interested in technological developments and 'hardware' investment, and are preoccupied with ethics and with awareness of the dangers and responsibilities of science.

For boys, science and technology are more likely to seem fused, and separate from ethics. For girls, science is markedly distinct from technology, and the ethical dimensions of science are highly salient and interwoven with it. There are considerable implications of this for education as well as for public dialogue.

The overall picture:

Young people feel that science is beneficial to our health and quality of life, and they would like to see more money being spent on a number of developments - particularly finding a cure for AIDS and making environmentally-friendly products. Over half trust scientists to make responsible judgements about the dangers of their work.

Around four out of ten would like to see more money spent on genetic research for food production, more research for national defence, and research to find out what makes people aggressive.

They are less enthusiastic about nuclear power, developing robots, space exploration, and trying to find evidence of life on other planets.

The stereotypical image of the scientist - iconically, the wild-haired man in the white coat – appears to be differentiating amongst these young people. Given the cue of a cosmologist, a medical researcher and an art historian, they see the medical researcher as more accessible, less isolated and much more likely to be female, than the cosmologist.

Young people question science and technology in a number of ways:

The ethical concern about animal experimentation is one issue – six out of ten agree that it is morally wrong. A second issue is how far 'scientific' approaches can be applied to human and social problems, or whether science should be trying to change the world; over a half questioned this. Over a third agree that scientific advances are going too far too fast. Trust in the government to make appropriate laws to control any dangerous developments in science is low – only a third trust the government, and a third do not.

We can interpret these findings as negative or resistant towards science, or we can interpret them more positively, as reflecting that young people are quite ethically sophisticated and able to make useful distinctions between the benefits of science and the need to see these benefits in context.

Four distinct constellations of values, or value sets, emerge:

The "**Green**" value set links ethical concerns, the environment, and scepticism about interfering with nature. It also includes propensity to being involved with the community and feeling able to make one's voice heard. It is particularly associated with younger girls (under sixteen) and especially with those who would be interested in a job related to science.

The three other value sets reflect contrasting patterns of values around science and technology.

The set we call the "**Techno-Investor**" links enthusiasm for investing in technology (especially space-related) and in science research, with beliefs about the beneficial effect of science, and trust in both scientists and government. It is particularly associated with boys under sixteen and also with young men over sixteen in the workforce.

The "**Science-Oriented**" value set reflects interest in science programmes on television, and science fiction, and a belief that a 'scientific way of thinking' can be applied widely. It is associated with boys over sixteen both in full-time education and in the workforce.

The fourth value set we call "**Alienated from Science**". It reflects boredom with science, and scepticism about its limitations. It is associated with younger girls and with young women over sixteen in the workforce who are not interested in a job related to science.

Values, trust and effectiveness:

Those young people who trust the government to make any necessary laws to control any dangerous developments in science, and who trust scientists to make responsible judgements about the dangers of their work, are more enthusiastic about the benefits of science than those who do not, but they are also less interested in learning more about science and they are less ethically concerned. Those who feel able to affect their community are more ethically concerned and are also more interested in science generally than those who have not tried to affect their community.

Implications of the study:

Girls are not so much less interested in science than boys; almost exactly the same proportion of girls as boys – about a third – would be interested in jobs related to science. But girls focus on different things.

It is clear from the strong link for girls, between 'green' values and being interested in a job related to science, that 'green' values are not inherently 'anti-science'.

One interpretation is that girls are turned off by the conventional view of 'science' which influences many communications on science directed at young people. That view comprises a mix of discovery, the power to fix and change the world, the excitement of space and of a particular kind of technology. Accompanying this mix is a message, stated or unstated, that science (though not its applications) is value-free and therefore by implication, those concerned with science do not need to engage with ethical concerns – and indeed to do so may compromise a logical stance.

This is however the message about science that young males seem, from our findings, to have taken on board, both those who would like a career in science and those who would not.

We know that young women are by no means technologically incompetent nor do they resist technology – as long as it is central to their lives they embrace it joyously. As all the research shows, the problems arise when particular tools and skills become labelled as 'masculine' or as 'techie'. It would seem that some of the areas of science and technology that are covered in this study are perceived to be so labelled, particularly by girls who WOULD be interested in a career related to science.

The educational implications of this picture are surely that the science curriculum must first, not be unduly laden with the 'space + hardware' appeal that draws boys. Second, the message that science and technology are BOTH value free AND can fix the world needs tempering by the recognition that girls and women will want to explore and critique this.

In public debates about scientific and technological issues, these same strands also come to the fore, and form a substantial part of the dialogue.

The science curriculum is already changing in directions that will address some of these issues. It is important that science teachers and education policy-makers, and those responsible for communicating science, recognise the whole picture.

3 DETAILED STUDY FINDINGS

3.1 BACKGROUND

The launch of the Government's Ten Year Strategy for Science focuses attention on key questions around the public's views about scientific progress and practice, and public interest in science. Young people's views are particularly relevant. They will form the future publics who will contribute to national debates, and their interest in entering science and technology careers will determine the health of the scientific and technological workforce of the future.

Despite the overall rise in numbers of undergraduates, there is declining take-up of science 'A' levels and some science subjects at university. Although girls now out-perform boys at school and university, including in many sciences, girls are still showing less interest in some science subjects than boys.

The House of Lords Select Committee Report *Science and Society* published in 2000 precipitated increased consultation and public debate on science.[i] This shifted the agenda from one in which 'public understanding of science' meant 'filling empty vessels' with knowledge, to a focus on dialogue and consultation between scientists and the public.

A number of areas of scientific development have captured recent public interest. These include perceptions of risk (such as GMOs, radioactive waste, climate change) and ethical issues such as animal experimentation and environmental pollution. The question of trust – in scientists, and in the government - is integral to such discussion.[ii]

There is still concern among some scientists that the public are uninformed about scientific evidence and therefore ill-equipped to engage in debate; is there even perhaps an 'anti-science' culture, in which science-based evidence and reasoning are devalued?

Recent studies have explored how level of scientific knowledge relates to concerns about ethical issues in science and also to perception of risk. These show that those who are better informed about science have a more *differentiated* perspective on both ethical and risk issues; they are not necessarily the most *optimistic* about developments in science.[iii]

Many studies show that the public has a positive view of developments in science and technology, that scientists are trusted, and that public anxieties about GMOs and other risks have been exaggerated.[iv] Furthermore, although the physical sciences are declining in popularity amongst students, interest in biology and other life sciences has considerably increased.

It is highly salient to explore the relationship between political engagement and science and technology-related attitudes and values. There has been recent concern about young people's declining involvement with 'conventional' activities such as voting. However, 'unconventional' engagement has increased, and the areas in which young people become engaged include ethical concerns around science and technology-related developments and particularly environmental issues.[v]

The Nestlé Social Research Programme, in conjunction with MORI, developed a questionnaire to explore young people's interest in science, their beliefs and values around scientific and technological development, their trust in government and scientists, and their engagement with their community. MORI was commissioned to collect and analyse the data, from a nationally representative sample of 704 young people aged 11 to 21 years of age. Survey details are given in full in Appendix 3.

3.2 THE RESEARCH QUESTIONS

- What is the image of scientists?
- How do young people view science and technology, and developments in science?
- What are their concerns about ethical issues?
- How do these attitudes and concerns relate to interest in a career in science?
- Are there differences between boys and girls?
- Do age and level of education affect beliefs and attitudes?
- Is there a relationship between attitudes, trust in government and in scientists, and belief that one can be an effective citizen?

3.3 THE IMAGE OF THE SCIENTIST

How is it changing?

The traditional stereotype of the scientist is a powerful cultural icon. The 'mad scientist' – male, in a white coat, having a bad hair day, has an *alter ego*, the 'heroic' scientist whose 'breakthrough' saves the world after many years of lonely and unrewarded endeavour. Both appear regularly on the movie screen; both are highly influential images.

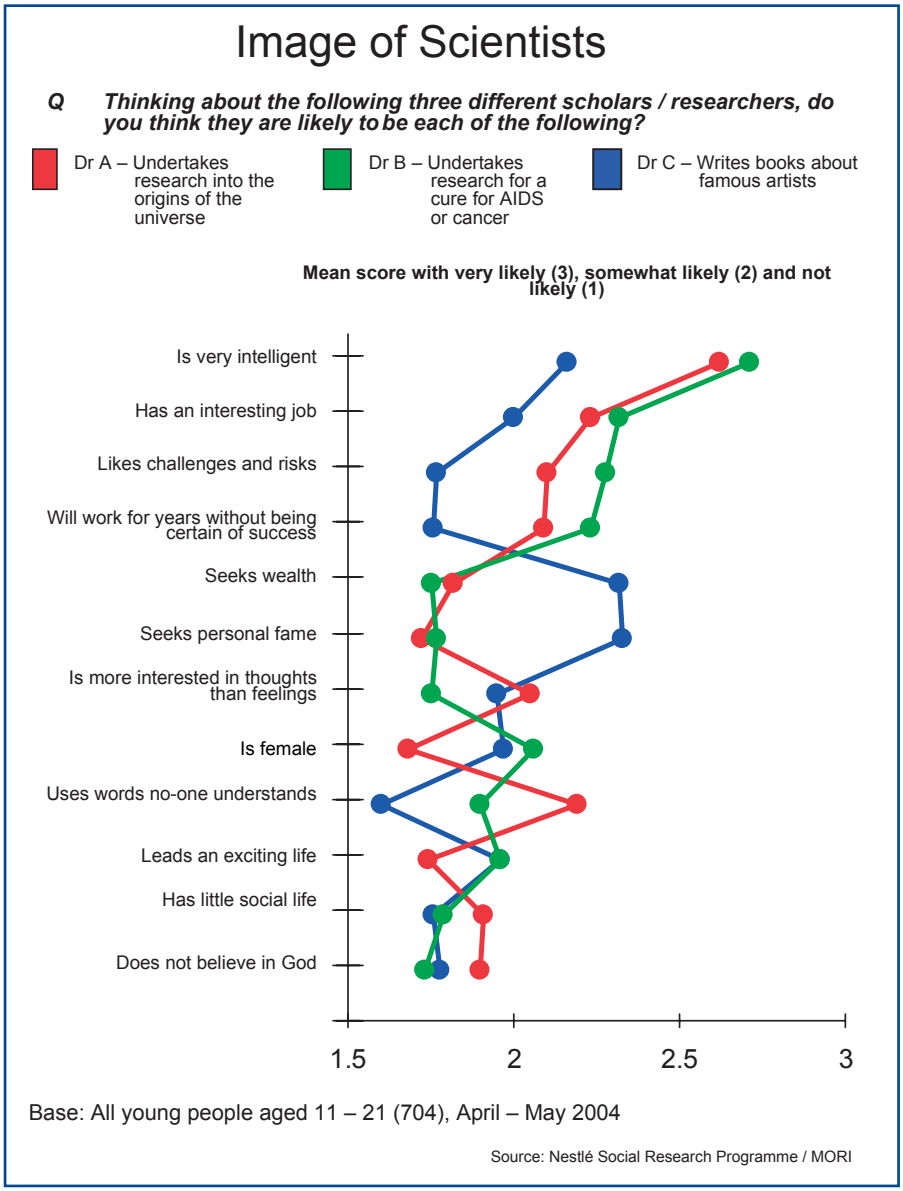
However, beyond these caricatures lies a more complex picture. 'Realistic' scientists in fiction are seen as more human, but because they have more credible idiosyncrasies, these may more insidiously deter - or motivate - young people. As scientists are increasingly visible in the public domain, and are seen as increasingly diverse, it is useful to take a snapshot of the current image.

The young people were presented with three characters; 'Dr A, who undertakes research into the origins of the universe' (the cosmologist), 'Dr B, who undertakes research looking for a cure for AIDS or cancer' (the medical researcher) and 'Dr C who writes books about famous artists' (the art historian).

The three cues produced quite striking differences:

- The two scientists, in contrast to the art historian, conform to the stereotype of high intelligence, lonely dedication, liking challenge and less likely to seek wealth
- It is also noteworthy that both scientists are more likely to be perceived to have an interesting job
- However the medical researcher differs from the cosmologist (the more 'stereotypical' scientist) in being more likely to believe in God, in leading a more exciting life, using more accessible language, and most particularly, more likely to be female.

This snapshot is in line with a changing image that science is not unitary, and that some types of scientist are more 'conventionally human' than others. The male person with some culturally stereotypical 'masculine' attributes is a more prevalent image of the physical scientist than of the scientist working in medical or biological fields.



3.4 HOW DO YOUNG PEOPLE VIEW SCIENCE AND TECHNOLOGY?

Overall, the young people have a positive image of the benefits of science and technology, and would like to see investment in several areas of development.

- They are interested in science and want to know more
- They are somewhat less interested in science on television
- They trust scientists, but are less sure about trusting the government to make appropriate laws to control scientific development.

In general, science is seen as beneficial:

Seven out of ten of the young people agree that 'Science and technology are making our lives healthier and more comfortable'. Only about a third, 35%, agree that 'Scientific advances are going too far and too fast to be controlled'.

To find out what areas of science were seen as beneficial, the respondents were asked whether they would like more money, the same amount, or less, spent on a number of science and technology developments. The most compelling area is 'Finding a cure for AIDS' for which nearly eight out of ten (79%) would like to see more money spent.

Two thirds would like more money spent on 'Making environmentally-friendly products'. Possibly surprising in view of the debates about GMOs, 43% want more money spent on 'Genetic research for improving food production'.

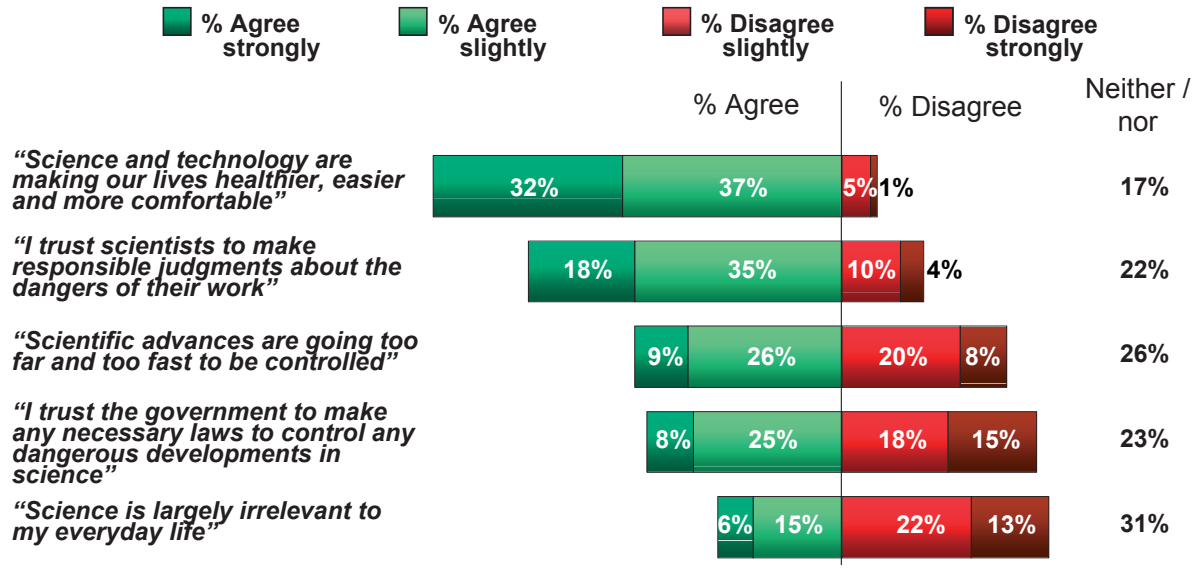
Just over four out of ten (41%) want more spent on 'Research for national defence', which may reflect current anxieties about security. About the same (39%) would like to see more spent on 'Finding out what makes people aggressive'.

However, 38% would like to see LESS spent on 'Developing robots', 27% less spent on 'Space exploration' and 29% less on 'Trying to find life on other planets'.

Young people seem more switched on to research that will clearly benefit health and well-being, rather than to more 'techie' research.

Benefits of Science and Technology

Q Please indicate to what extent you would agree or disagree with the following statements?

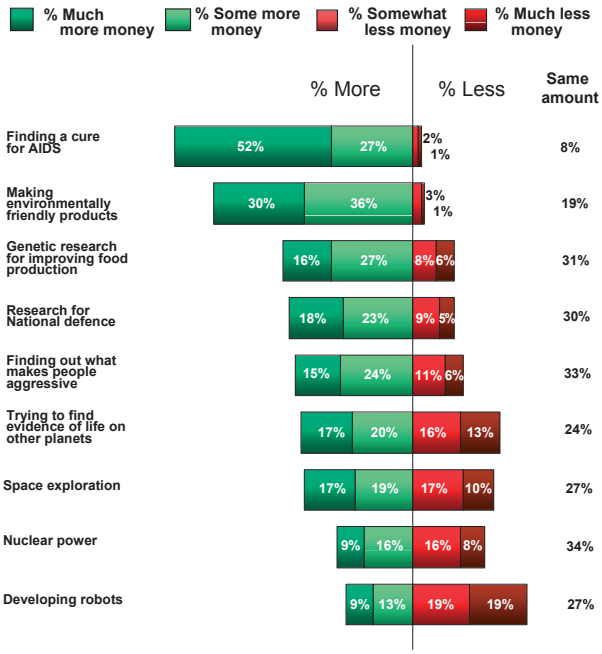


Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

Investment in Technological Development

Q ***Do you think that more or less money should be spent on each of the following?***



Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

On the whole, science is interesting:

Given the declining numbers entering some fields of university science, it is encouraging to find that in fact 33% would be, in varying degrees, 'interested in a job relating to science' – even though 43% would not.

One half 'like learning about new developments in technology' with only 18% 'not interested'. Just under half (46%)'would like to understand a lot more about those areas of science that will affect me personally', with only 16% endorsing 'I think I know pretty well all I will ever need to know about the areas of science that will affect me personally'. Just over a third (36%) disagree that "science is largely irrelevant to my daily life'.

Although television is a major source of scientific information, four in ten are 'bored' by programmes about space, natural history and wildlife, and medicine and biology, with about a third liking or finding them interesting.

Scientists are trusted more than the government:

Over half (53%) agree, and only 14% disagree, that "I trust scientists to make responsible judgements about the dangers of their work'. They are less sure about the government; a third agree (34%) and a third disagree (33%) that 'I trust the government to make any necessary laws to control any dangerous developments in science'.

Interest in Science

Q ***For each pair of statements please tick one of the five boxes to indicate the extent to which you agree. Ticking the far left box means you are most likely to agree with the statement on the left hand side and vice-versa.***

Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

3.5 CONCERNS ABOUT SCIENCE AND TECHNOLOGY

Young people have a generally positive view of science but they have two kinds of concern. One is about the limits and usefulness of what might be termed a 'scientific' worldview. The other is about ethical issues, and taking seriously the possible dangers of scientific and technological development.

How effective and useful is a 'scientific way of knowing'?

A criticism that often surfaces in public debates about science is that some members of the scientific community seem to assume that science reflects the highest and most complete form of reasoning, and that this can be applied to all human problems.[vi]

Young people show some resistance to seeing science as the primary form of reasoning, and science as the primary route to solving human problems.

Over half (55%) agree that 'Science should be concerned with understanding the natural world, not trying to change it' and marginally fewer (52%) agree that 'Science cannot solve the basic human problems like poverty and unhappiness'.

Nevertheless, despite the strong belief in the benefits of science, two-fifths (42%) agree that 'No matter how many new products and inventions appear, most people's lives remain the same'; improvement does not necessarily mean change.

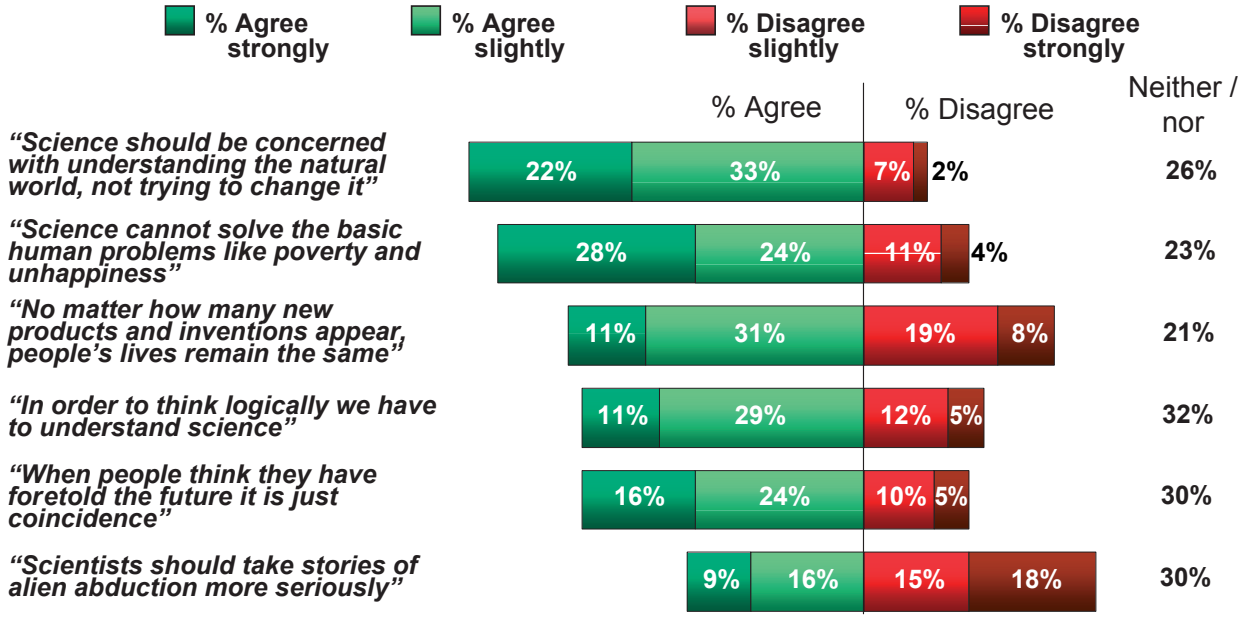
Young people are fairly evenly divided as to whether they 'learn more about how to deal with life's problems from reading fiction or watching films and drama programmes' (33%) or 'learn more about how to deal with life's problems by looking for logical explanations' (28%).

However, there is a quite robust rejection of the supernatural: Four out of ten agree that 'When people think they have foretold the future it is just coincidence' and a third (32%) disagree that 'Scientists should take stories of alien abduction seriously'.

These findings suggest that young people want to acknowledge a range of ways to explain and understand our lives and the world around us, while retaining a strong commitment to logic and reason.

Science as a 'Way of Knowing'

Q *Please indicate to what extent you would agree or disagree with the following statements?*



Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

What are young people's ethical concerns?

The strongest ethical concern is about animal welfare. Nearly six out of ten agree, and fewer than two out of ten disagree, that 'Experimenting on animals is always morally wrong'. Nearly a third (30%) agree that they would always buy 'cruelty-free products' - but 27% would not. However, only about a quarter agree that they spend 'a lot of time' thinking about animal welfare, or about the environment.

Ethical beliefs do not exist in isolation; the context may modify or enhance them. Therefore, we posed some dilemmas that pitted ethical concerns against potential benefits. These benefits were 'to achieve new agricultural methods that would significantly benefit the environment', or 'to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment'. Young people were asked whether they would, or would not support certain procedures, or whether they were 'unsure'. (There is quite a high level of 'unsure' responses, indicating that these are difficult issues.)

The most morally contentious 'dilemmas' concerned scientific experiments on live animals: About two out of ten (21%) would support such research to benefit the environment, and 17% would support it to produce improved food. About a third (35%) would not support such research to benefit the environment, and nearly half (49%) would not support research for nutritionally improved food.

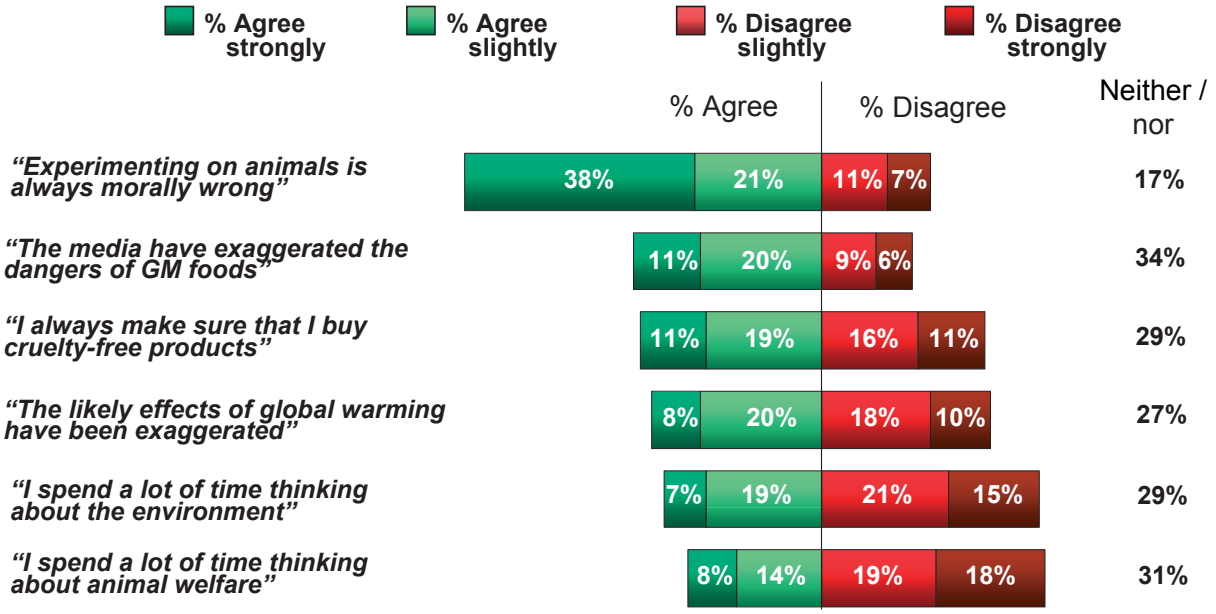
Slightly less morally contentious is the 'cloning of animals such as Dolly the sheep' and 'the genetic modification of animals (e.g. in medical research)'.

Three in ten (31%) are comfortable about cloning to significantly benefit the environment, and 36% are not. However one fifth (19%) support the genetic modification of animals to produce improved food, and four out of ten would not support it.

Genetic modification of plants is the least morally contentious, though the issue here may be risk rather than ethics. Over a third (35%) would support this to benefit the environment, and the same proportion to obtain nutritionally improved foods. 23% would not support it in either case.

Concerns About Ethics and Risks

Q ***Please indicate to what extent you would agree or disagree with the following statements?***

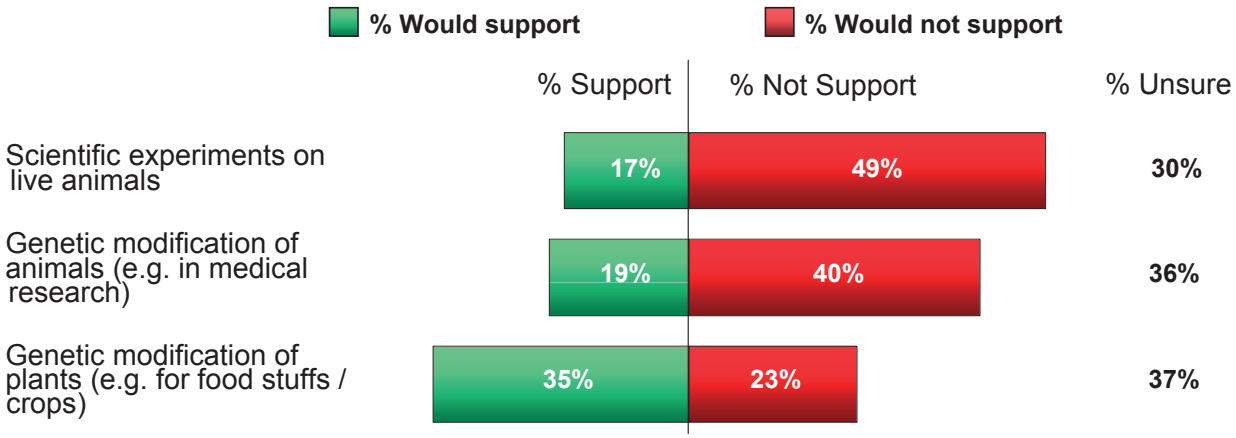


Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

Ethical Dilemmas

Q ***If it were shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food you eat at the moment, would you support the following?***

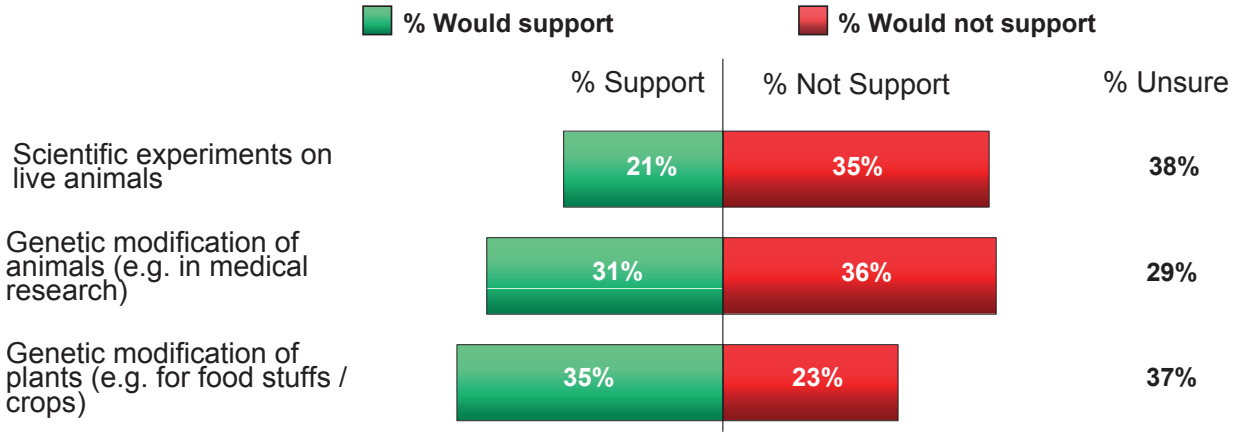


Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

Ethical Dilemmas

Q ***If it were shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment, would you support the following?***



Base: All young people aged 11 – 21 (704), May – June 2004

Source: Nestlé Social Research Programme / MORI

3.6 THE PATTERN OF VALUES: HOW VALUES GO TOGETHER AND FORM VALUE SETS

What happens when we look at how values correlate with each other? Are there distinct belief systems or 'value sets'?

We analysed the relationships between values.[1] Four 'value sets' emerged; these are clusters of beliefs, not types of person.[2]

The first value set, which we label "**Green**", is about the environment, ethical issues concerned with animal experimentation, and concern about the pace of science and 'interfering with nature'. It also includes items relating to feeling effective about being involved with the community.

The second value set, which we call "**Techno-investor**" reflects a generally buoyant attitude to scientific development, an instrumental view supporting technological investment. This value set also includes trust in the government and scientists.

The third value set, "**Science-oriented**", reflects a general interest in science and technology topics and endorsement of a 'scientific way of knowing'.

The fourth value set is about being "**Alienated from science**". It reflects lack of interest in science, and also lack of conviction that science can contribute usefully to solving human problems. It is also associated with low tolerance of ambiguity - with liking clear right and wrong answers to problems.

3.7 HOW DO YOUNG PEOPLE'S VALUES DIFFER ACCORDING TO THEIR GENDER, AGE AND EDUCATION AND THEIR INTEREST IN SCIENCE?

To understand what motivates and deters different young people, we must look beyond the overall picture:

- Are there different patterns amongst those who are interested in a job related to science compared with those who are not?
- Are there gender differences?
- Do values change with age, and does it make a difference whether respondents of the same age are in full-time education or in work?
- How do these interweave – for example, are girls who would like a job related to science more similar to boys who would like a job related to science, or are they more like other girls who would not?

Because they were so striking, we will look first in detail at gender differences, then we will put the whole picture together.

Are boys really more science-orientated than girls? Are girls more ethically orientated?

There is continuing concern about women's under-representation in science and technology, even though women do show more interest in the life sciences and medicine than in the physical sciences.

Numerous studies have shown that girls and women tend to be less interested in science and technology and less enthusiastic in general about scientific progress, expressing more ethical concerns a bout scientific and technological development. The root of this remains unclear despite being much debated. Is it a problem of numbers – male over-representation in science sending out a particular message? Or is there a more deep-rooted issue – resistance to a particular worldview that is reflected in conventional ways of thinking about science?

The present study addresses this question.

1 Principal components factor analysis with varimax rotation

2 See Appendix 1

We found marked gender differences in values.

First there is a strong relationship between gender and all the four value sets. Girls score positively on the "**Green**" value set, whereas boys score negatively, suggesting that girls may be more sceptical about aspects of scientific progress and more concerned about ethical and green issues than boys. On the value sets, "**Techno-investor**" and "**Science-oriented**" the picture is reversed; boys score more positively, girls more negatively. Girls tend to be more "**Alienated from science**" than boys.

Second, the research suggests that there are strong gender differences on the majority of the items tested on the questionnaire.

- Girls are considerably more concerned about animal welfare and buying cruelty-free products
- Though there is little gender difference in agreement that 'scientific advances are going too far and too fast to be controlled', girls are less likely than boys to disagree
- Girls are less likely than boys to endorse a 'scientific way of knowing' as a mode of addressing life and human problems
- Girls are less interested than boys in new developments in technology, space programmes on television and science fiction
- Girls are more in favour than boys of investing more money on research to find out what makes people aggressive, and less in favour than boys of more spending on research on nuclear power, developing robots, space exploration and trying to find evidence of life on other planets
- Girls are more tolerant than boys of ambiguity – with nearly a third of girls, compared with just over one in five boys, 'liking problems where there are several possible answers'.

Table: Gender and Values - 1

For each pair of statements below, respondents were asked to tick one of five boxes between the two statements. The closer they placed the tick to a statement, the more they agreed with it. This table shows the relevant statement (and the opposing statement in brackets) and the percentage of males and females who ticked one of the two boxes closest to that statement.

	Male	Female
Base (weighted)	356	366
AGREE WITH STATEMENT	%	%
I like learning about new developments in technology *(I am not interested in learning about new developments in technology)*	63	37
I like science fiction *(I avoid science fiction)*	49	27
I like problems where there is a clear right or wrong answer *(I like problems where there are several possible answers)*	44	39
A scientific way of thinking can be applied effectively to most problems in life *(Scientific ways of thinking only apply to a very narrow range of human problems)*	40	29
I am bored by space programmes on television *(I enjoy space programmes on television)*	30	53
I learn more about how to deal with life's problems from reading fiction or watching films and drama programmes *(I learn more about how to deal with life's problems by looking for logical explanations)*	27	39
I like problems where there are several possible answers *(I like problems where there is a clear right or wrong answer)*	22	30

Base: All young people aged 11 – 21, April – May 2004
Source: Nestlé Social Research Programme / MORI.

Table: Gender and Values - 2

To what extent do you agree or disagree with the statements below?

	Male	Female
Base (weighted)	356	366
AGREE WITH STATEMENT	%	%
Experimenting on animals is always morally wrong	51	66
In order to think logically we must understand science	46	35
Science cannot solve the basic human problems like poverty and unhappiness	45	57
When people think they have foretold the future it is just coincidence	45	34
I always make sure that I buy cruelty-free products	23	37
DISAGREE WITH STATEMENT		
I spend a lot of time thinking about animal welfare	43	30
Scientific advances are going too far and too fast to be controlled	36	19

Base: All young people aged 11 – 21, April – May 2004
Source: Nestlé Social Research Programme / MORI.

Table: Gender and Investment in Technology Development

Do you think that more money, less money or about the same amount of money should be spent on each of the following?

	Male	Female
Base (weighted)	356	366
Percentage that think we should spend more money on:	%	%
Space exploration	48	24
Trying to find life on other planets	46	27
Finding out what makes people aggressive	37	42
Developing robots	32	12
Nuclear power	30	21

Base: All young people aged 11 – 21, April – May 2004
Source: Nestlé Social Research Programme / MORI.

Putting the story together: How do the different groups of young people differ?

The stark picture of gender differences is tempered by attention to the whole picture.

Girls and boys who would be interested in a job related to science look different from those who would not be interested.

There is an effect for age; younger people have different values from those who are older.

For the older group, those over sixteen, there are some differences between those in full-time education from those in the workforce.

The key factors are:

- **Gender**
- **Interest in a job related to science**
- **Age and education: comparing three groups of young people –**
  - **under sixteen in school**
  - **over sixteen in fulltime education in school and university**
  - **over sixteen in the workforce**

Dividing the respondents according to these three factors gives us twelve groups.

Looking at the distinctive picture of each of these twelve groups tells us a rich - and surprising - story. **The full Table is in Appendix 2.**

Boys who are interested in a job related to science, in all three age/education groups, present the picture one might expect:

- They are interested in science and see it as beneficial
- They are interested in technology and particularly in space and in hardware
- They endorse a 'scientific way of knowing' and believe that science can solve human problems
- They believe that new inventions change our lives
- They are less interested in ethical issues.

Younger boys (those sixteen and under) score highest on the "Techno-Investor" value set and are keen on space – including to an extent, taking stories of alien abduction seriously. They were the group who most trusted scientists to make responsible judgements about the dangers of their work.

Young men over sixteen in fulltime education have similar interests, but more strongly than the younger boys, they endorse the 'scientific worldview', disagreeing that 'scientific advances are going too far and too fast', or that 'science cannot solve the basic human problems of poverty and unhappiness'.

Young men over sixteen in the workforce are similar to their peers in full-time education.

They score highest on the "Science-oriented" value set and are the group least likely to want to support more research to find out what makes people aggressive.

Girls who are interested in a job related to science provide the most surprise:

- They express the strongest interest in acquiring further knowledge in science, and the least interest in learning about new developments in technology
- They are least interested in space issues and science fiction
- They score highest on the "Green" value set, and lowest on the "Science-oriented" value set
- They are most sceptical that science can solve basic human problems, or that scientific ways of thinking can be applied effectively to a wide range of problems
- They are most concerned that scientific advances are going too far and too fast to be controlled
- Girls in full time education like problems with several possible answers, rather than clear right and wrong answers.

Younger girls (sixteen and under) who are interested in a job related to science are similar to their peers who are not interested in a job related to science, in being particularly concerned about animal ethical issues, and the environment. They are also more likely to agree that they trust the government to make any necessary laws to control any dangerous developments in science. In this they contrast with young women over sixteen in the workforce who would like a job related to science; that group least trusts both scientists and the government.

Young women over sixteen in full-time education who would be interested in a job related to science are also the most sceptical about natural remedies, and the group most likely to say that they look for the solutions to life's problems in logical explanations.

The contrast between girls who would like a job related to science, and boys who would like a job related to science, is remarkable.

- **Girls, particularly those over sixteen, combine a rigorous concern for logic with scepticism about claims of a scientific worldview that will provide a grand 'fix'**
- **They are also least interested in some of the conventional trappings of science – space, and hardware technology**
- **They assert a strong ethical sense which they appear to be applying to their scientific interests.**

Boys who are NOT interested in a job related to science hold somewhat similar views regarding the scientific worldview, to their peers who are interested in a job related to science:

- They are less interested in animal ethical issues
- Those over sixteen in full-time education score lowest on the "Green" value set
- Those under sixteen are the group least interested in the environment
- Younger boys are more likely to see science as 'irrelevant to my daily life' and to 'like problems with a clear right or wrong answer'.

Girls who are NOT interested in a job related to science score highest on the "Alienated from science" value set, and most negatively on the 'Techno-Investor" value set:

- They are least interested in knowing more about science;
- They 'learn more about life's problems from reading fiction or watching drama programmes' than from looking for logical explanations.

This striking picture undermines the impression that 'green' values and ethical concerns are antagonistic to science.

For girls, being interested in a job related to science also means being most committed to questioning ethical issues about science and technological progress.

For boys this link is not so apparent: Boys, whether interested in science or not, are less ethically concerned and less sceptical about science and technology.

3.8 TRUST, PERSONAL EFFECTIVENESS AND COMMUNITY INVOLVEMENT

Trust in the government and in experts has been shown in numerous studies to be an important factor in how people perceive ethical issues and risk. A sense of personal effectiveness, the extent to which the individual feels able to influence public opinion or have an impact on the community, predicts how far people become politically engaged.[vii]

We measured trust by two items:

'I trust the government to make any necessary laws to control any dangerous developments in science'

'I trust scientists to make responsible judgements about the dangers of their work'.

We measured sense of personal effectiveness by:

'People like me and my family have little chance to influence the government'

'I feel that people like me can make our voices heard if we go about it the right way'.

We measured involvement in the community by:

'I am interested in doing something about problems in the community'

'I have tried to influence the way things are done at my school or college'.

There is not an exact relationship between trusting the government and trusting scientists:

- A third of those who distrust the government also distrust scientists
- Four in ten of those who trust scientists, do not trust government,

In general, young people do not feel that they can be very effective in influencing public affairs:

- Over half (52%) agree that "People like me and my family have little chance to influence the government": Only 13% disagree
- Just under a half (47%) agree that "I feel that people like me can make our voices heard if we go about it the right way": 18% disagree.

About a third feel some commitment to their community:

- Over a third (36%) are 'interested in doing something about problems in the community'
- Nearly three out of ten (28%) 'have tried to influence the ways things were done in my school or college'.

Younger girls are among the most likely to trust the government; younger girls and younger boys are both more likely to trust scientists. Young women aged over sixteen in the workforce trust both government and scientists least.

Those MOST interested in doing something about problems in the community are young women over sixteen who are not interested in a job related to science.

Those LEAST interested in doing something about problems in the community are young men in full-time education who are interested in a job related to science, and young men in the workforce who are not interested in a job related to science.

Those MOST likely to have tried to influence the way things are done at school or college are younger girls, and young men in the workforce, who in both cases are interested in a job related to science.

Those LEAST likely to, are young men in the workforce who are not interested in a job related to science, and young women in the workforce who are interested in a job related to science.

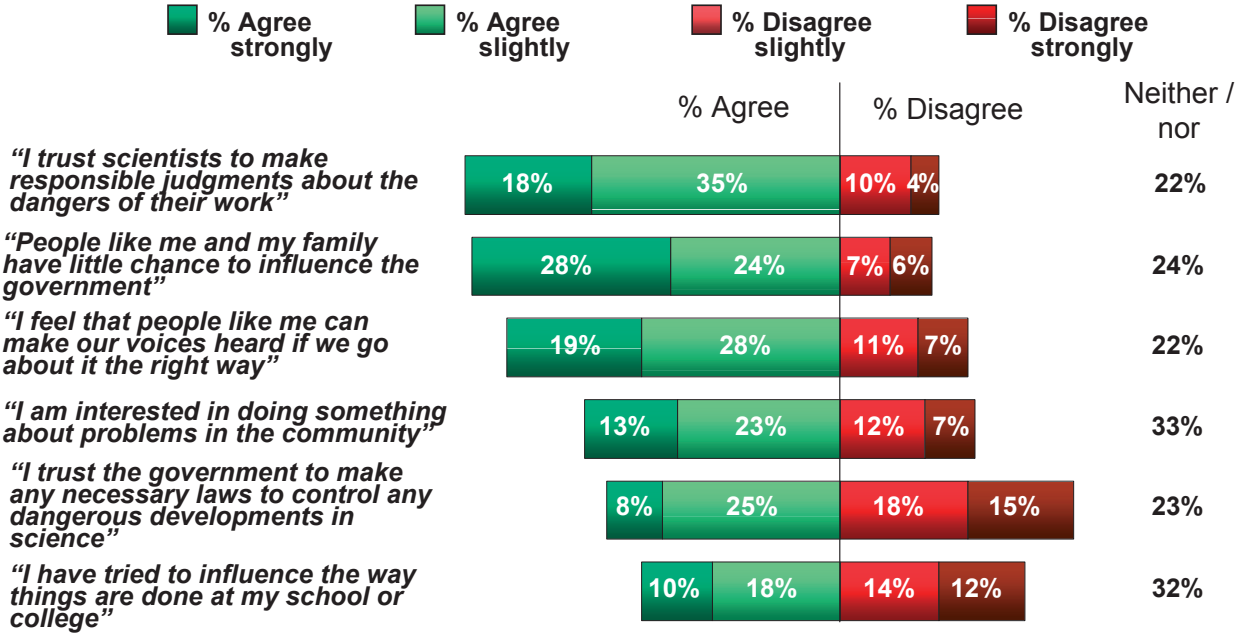
How does trust in the government and in scientists relate to values?

The main picture is that those who are more likely to trust the government and scientists are found to be more positive about the benefits of science, and also are more likely to endorse natural remedies and that scientists should take take alien abduction seriously. However those who have less trust in the government and in scientists are more interested in knowing more about science.

- They are considerably more sceptical on ethical issues
- They are less likely to believe that the media has exaggerated the dangers of GM foods.

Trust, Personal Efficacy and Political Engagement

Q Please indicate to what extent you would agree or disagree with the following statements?



Base: All young people aged 11 – 21 (704), April – May 2004

Source: Nestlé Social Research Programme / MORI

Table: Trust in the Government and Trust in Scientists

This table shows the percentages of people who agree or disagree with the following statements cross-referenced with how they answered questions about trust in the government and trust in scientists.

Those who are classed as 'Govt. high' are those who agree (slightly or strongly) with the statement 'I trust the government to make any necessary laws to control dangerous developments in science'. Those who are classed as 'Govt. low' are all those who disagree (slightly or strongly) with the same statement.

Those who are classed as 'Scientist high' are those who agree (slightly or strongly) with the statement 'I trust scientists to make responsible judgements about the dangers of their work'. Those who are classed as 'Scientist low' are all those who disagree (slightly or strongly) with the same statement.

Trust in	Govt. high	Govt. low	Scientist high	Scientist low
Base (weighted)	243	241	386	101
AGREE WITH STATEMENT	%	%	%	%
Science and technology are making our lives healthier, easier and more comfortable	84	76	81	75
When people think they have foretold the future it is just coincidence	52	42	48	38
I believe natural remedies are best for treating most illness	52	29	42	27
Scientists should take stories of alien abduction seriously	34	21	33	16
I would like to understand a lot more about those areas of science that will affect me personally	45	55	46	62
I would not support genetic modification of animals even if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	33	56	39	61
I find programmes about medicine and biology interesting	28	39	29	42
I would not support genetic modification of plants even if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	19	29	21	31
DISAGREE WITH STATEMENT				
I spend a lot of time thinking about animal welfare	31	54	37	54
In order to think logically we have to understand science	14	31	18	33
The media has exaggerated the dangers of GM foods	13	23	13	31

Base: All who agree or disagree with trusting scientists and the government as described above, April – May 2004
Source: Nestlé Social Research Programme / MORI.

Personal effectiveness and community involvement:

We found no relationship between values and feeling able to make one's voice heard, but there is a relationship between values and being involved in the community.

Those who are interested in doing something about problems in the community, and those who have tried to influence the way things are done in their school or college, are considerably more likely to hold strong ethical views:

- They are also more likely to be concerned about science advancing too far and too fast
- They would like more research done on making environmentally-friendly products, finding out what makes people aggressive, and also genetic research for improving food production.

Those who have tried to influence their school or college are more interested than those who have not, in new developments in technology:

They believe more strongly that science has made our lives healthier easier and more comfortable, and that in order to think logically we must understand science.

Those who want to do something about problems in the community compared to those who do not, score particularly on the 'Green" value set, and also on the "Science-oriented" value set.

The picture that emerges therefore, is that people who are active in their community, actually and potentially, are both positive about science and also ethically critical.

Being ethically critical is also associated with lower trust in government and in scientists.

Table: Relationship between Values and Community Involvement

This table shows the percentages of people who agree or disagree with the following statements cross-referenced with how they answer two questions about their community involvement.

Those classed as 'Problems YES' are all those who agree (strongly or slightly) with the statement 'I am interested in doing something about problems in the community'. Those classed as 'Problems NO' are all those who disagree (strongly or slightly) with the same statement.

Those classed as 'School influence YES' are those who agree (slightly or strongly) with the statement 'I have tried to influence the way things are done at my school or college'. Those classed as 'School influence NO' are all those who disagree (strongly or slightly) with the same statement.

	Problems YES	Problems NO	School influence YES	School influence NO
Base (weighted)	259	138	200	192
AGREE WITH STATEMENT	%	%	%	%
Science should be concerned with understanding the world not trying to change it	69	55	71	60
Scientific advances are going too far and too fast to be controlled	50	28	49	35
I always make sure that I buy cruelty-free products	47	16	39	24
I spend a lot of time thinking about the environment	41	14	38	19
I spend a lot of time thinking about animal welfare	34	14	35	18
DISAGREE WITH STATEMENT				
Scientists should take stories of alien abduction seriously	30	59	34	47

Base: All who agree or disagree with being interested in helping with problems in the community and trying to influence things at schools or colleges as described above, April – May 2004. Source: Nestlé Social Research Programme / MORI.

APPENDICES

APPENDIX 1: The value sets

The Four Value Sets

"Green"

Item	Weighting
I spend a lot of time thinking about the environment	.72
I spend a lot of time thinking about animal welfare	.72
I always make sure that I buy cruelty-free products	.63
I am interested in doing something about problems in the community	.57
Scientific advances are going too far and too fast to be controlled	.48
Science should be concerned with understanding the world not trying to change it	.48
I believe that natural remedies are best for treating most illnesses	.42
[Spend more money on] Making environmentally-friendly products	.37
Experimenting on animals is always morally wrong	.35
Scientists should take stories of alien abduction seriously	.34
I have tried to influence the way things are done at my school or college	.34
[Spend more money on] Finding out what makes people aggressive	.33
I feel that people like me can make our voices heard if we go about it the right way	.32

"Techno-Investor"

Item	Weighting
[Spend more money on] Space exploration	.74
[Spend more money on] Trying to find evidence of life on other planets	.69
[Spend more money on] Developing robots	.60
[Spend more money on] Genetic research for improving food production	.58
[Spend more money on] Research for national defence	.56
[Spend more money on] Nuclear power	.44
I trust scientists to make responsible judgements about the dangers of their work	.40
I trust the government to make any necessary laws to control dangerous developments in science	.40
[Spend more money on] Making environmentally-friendly products	.37
Science and technology are making our lives healthier, easier and more comfortable	.36
[Spend more money on] Finding a cure for AIDS	.34
In order to think logically we have to understand science	.32

"Science-oriented"

Item	Weighting
I like learning about new developments in technology	.67
I find programmes about medicine and biology interesting	.64
I like science fiction	.63
A scientific way of thinking can be applied effectively to most problems in life	.59
I expect to use computers in my career	.52
I like natural history and wildlife programmes on television	.48
Science and technology are making our lives healthier, easier and more comfortable	.36

"Alienated from Science"

Item	Weighting
I am bored by space programmes on television	.52
I think I know pretty well all I will ever need to know about those areas of science that affect me personally	.48
I like problems where there is a clear right or wrong answer	.47
I would not be interested in a job related to science	.47
Computers will soon be essential in the everyday lives of ordinary people	.36
Science cannot solve the basic human problems like poverty and unhappiness	.35
I expect to use computers in my career	.35
Experimenting on animals is always morally wrong	.32
People like me and my family have little chance to influence the government	.32

APPENDIX 2: Relationship between Gender, Interest in a Job Related to Science, and Age and Education

How to read this Table:

This table presents a visual picture of the pattern of values by showing 12 boxes: gender, by age+ education, by interest in a job related to science. The items represented are those which in the analysis of the whole sample, vary significantly by gender in combination with age + education, and/or by gender in combination with interest in a job related to science.

The four most extreme means on the item – the highest and second highest mean and the lowest and second lowest mean – have been selected and placed in the box category (sub-group) to which they apply. The boxes therefore bring together all the items on which that category, or sub-group of the sample, scored highest or second highest, or lowest or second lowest.

The items with highest and lowest means (the most extreme scores) are printed in roman type; the second highest and lowest are printed in italics.

Breaking down the sample into 12 sub-groups creates some small sample sizes; this table should be read only as an indicative illustration of the pattern and interpreted with caution.

- Attitude and value items reflect a mean score between 5.00 (maximum AGREEMENT) and 1.00 (maximum DISAGREEMENT)
- Items relating to spending money on research and development reflect a mean score between 5.00 (spend MUCH MORE money) and 1.00 (spend MUCH LESS money)
- The score on the value sets ranges from +1.00 (positively associated) to –1.00 (negatively associated)
- The upper part of each box includes those items with which the respondents in that sub-group, compared to the rest of the sub-groups, have MOST STRONGLY AGREED (attitude items) or MOST STRONGLY SUPPORTED (items relating to spending more money on research) or SCORED MOST POSITIVELY (the four value sets)
- The lower part of each box includes those items with which the respondents in that sub-group, compared to the rest of the sub-groups, have AGREED LESS, or SUPPORTED LESS, or SCORED NEGATIVELY
- Where the mean score is less than 3.00, this reflects DISAGREEMENT. However on some items the lowest mean score for all respondents still represented some 'agreement with' or 'support for' the item; therefore, where the mean is more than 3.00, the item reflects LESS AGREEMENT rather than DISAGREEMENT.

APPENDICES

Box 1 Males 11-16 years

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	"Techno-Investor" value se	0.83	*"Techno-Investor" value set*	*0.31*
	I trust scientists to make responsible judgements about the dangers of their work	4.42	*[Spend more money on] Trying to find evidence of life on other planets*	*3.72*
	Science should be concerned with understanding the natural world not trying to change it	*4.19*	I like problems where there is a clear right or wrong answer	3.65
	In order to think logically we have to understand science	4.18	*[Spend more on] Genetic research for improved food production*	*3.62*
	[Spend more on] Genetic research for improved food production	4.04	[Spend more on] Nuclear power	3.48
	[Spend more money on] Trying to find evidence of life on other planets	3.84	The likely effects of global warming have been exaggerated	3.29
	[Spend more on]Space exploration	3.77	Science is largely irrelevant to my life	3.15
	When people think they have foretold the future it is just coincidence	3.66	*Scientists should take stories of alien abduction seriously*	*3.04*
	[Spend more on] Developing robots	3.58		
	Scientists should take stories of alien abduction seriously	3.07		
Less agreement with, disagree with, or less support for	No matter how many new products and inventions appear, most people's lives remain the same	2.79	*I believe natural remedies are best for treating most illnesses*	*2.97*
			I like natural history and wildlife programmes on television	*2.58*
			I spend a lot of time thinking about the environment	*2.49*
			I find programmes about medicine and biology interesting	1.99

Box 2 Females 11-16 years

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	"Green" value set	0.70	"Alienated from Science" value set	0.56
	Experimenting on animals is always morally wrong	4.30	*"Green" value set*	*0.29*
	Science should be concerned with understanding the natural world not trying to change it	4.30	*Experimenting on animals is always morally wrong*	*4.22*
	Science cannot solve the basic human problems like poverty and unhappiness	4.09	*I trust scientists to make responsible judgements about the dangers of their work*	*3.97*
	I would like to understand a lot more about those areas of science that will affect me personally	*4.01*	No matter how many new products and inventions appear, most people's lives remain the same	3.77
	I believe natural remedies are best for treating most illnesses	3.80	*I believe natural remedies are best for treating most illnesses*	*3.67*
	[Spend more money on] Finding out what makes people aggressive	*3.67*	I learn more about how to deal with life's problems from reading fiction or watching drama programmes	3.58
	I trust the government to make any necessary laws to control any dangerous developments in science	3.58	I always make sure I buy cruelty-free products	3.48
	I spend a lot of time thinking about the environment	3.58	*The media have exaggerated the dangers of GM foods*	*3.48*
	Scientific ways of thinking only apply to a very narrow range of human problems	3.48	*The likely effects of global warming have been exaggerated*	*3.45*
	I always make sure I buy cruelty-free products	3.48	*I trust the government to make any necessary laws to control any dangerous developments in science*	*3.27*
	I spend a lot of time thinking about animal welfare	3.47	*Science is largely irrelevant to my daily life*	*3.10*
	Scientific advances are going too far and too fast to be controlled	*3.44*	*Scientific way of thinking only apply to a very narrow range of human problems*	*3.07*
	No matter how many new products and inventions appear, most people's lives remain the same	*3.32*	*I spend a lot of time thinking about animal welfare*	*3.04*
	I like problems where there are several possible answers	3.20	*I spend a lot of time thinking about the environment*	*2.95*
	I would hope to avoid using computers in my career	3.05		
Less agreement with, disagree with, or less support for	"Science-oriented" value set	-.60	*"Science-oriented" value set*	*-.48*
	"Alienated from science" value set	*-.49*	*I would like to understand a lot more about those areas of science that will affect me personally*	*3.07*
	I like learning about new developments in technology	2.83	*I like learning about new developments in technology*	*2.94*
	[Spend more money on] Developing robots	2.03	*I like science fiction*	*2.53*
			I like natural history and wildlife programmes on television	2.46
			I find programmes about medicine and biology interesting	2.26
			I enjoy watching space programmes on television	1.85

Box 3 Males aged 16 to 21 years in Full-time Education

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	*"Science-oriented" value set*	*0.58*	When people think they have foretold the future it is just coincidence	3.66
	I like learning about new developments in technology	*4.13*	I like science fiction	3.60
	I like science fiction	*3.58*	The media have exaggerated the dangers of GM foods	3.54
	I find programmes about medicine and biology interesting	*3.58*		
	I enjoy space programmes on television	*3.54*		
	I like natural history and wildlife programmes on television	*3.47*		
	[Spend more money on] Space exploration	*3.45*		
	[Spend more money on] Nuclear Power	*3.34*		
Less agreement with, disagree with, or less support for	*"Green" value set*	*-.28*	"Green" value set	-.41
	Science should be concerned with understanding the world not trying to change it	*3.44*	Science cannot solve the basic human problems like poverty and unhappiness	3.15
	Experimenting on animals is always morally wrong	3.26	*I believe natural remedies are best for treating most illnesses*	*2.97*
	Science cannot solve the basic human problems like poverty and unhappiness	*3.19*	Scientific advances are going too far and too fast to be controlled	2.68
	The likely effects of global warming have been exaggerated	*2.73*	I spend a lot of time thinking about animal welfare	2.26
	Scientific advances are going too far and too fast to be controlled	*2.66*		
	I always try to buy cruelty-free products	*2.57*		
	Scientific ways of thinking only apply to a very narrow range of human problems	*2.49*		
	Science is largely irrelevant to my daily life	2.38		

Box 4 Females aged 16 to 21 years in Full-time Education

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	I would like to understand a lot more about those areas of science that will affect me personally	4.16	*I learn more about how to deal with life's problems from reading fiction or watching films and drama programmes*	*3.32*
	Scientific advances are going too far and too fast to be controlled	3.48		
	I learn more about how to deal with life's problems by looking for logical explanations	3.29		
	I like problems where there are several possible answers	*3.16*		
Less agreement with, disagree with, or less support for	"Alienated from science" value set	-.55	*When people think they have foretold the future is it just coincidence*	*3.12*
	"Techno-investor" value set	*-.38*	In order to think logically we have to understand science	2.99
	[Spend more money on] Genetic research for improved food production	*3.19*	The likely effects of global warming have been exaggerated	2.61
	The media have exaggerated the dangers of GM foods	2.95	Scientists should take stories of alien abduction seriously	2.35
	I like learning about new developments in technology	*2.94*	*The media have exaggerated the dangers of GM foods*	*2.97*
	I believe natural remedies are best for treating most illnesses	2.79		
	[Spend more money on] Nuclear Power	*2.71*		
	I would hope to avoid using computers in my career	*2.70*		
	[Spend more money on] Trying to find life on other planets	*2.67*		
	[Spend more money on] Space exploration	*2.66*		
	Science should take stories of alien abduction seriously	*2.48*		
	I like science fiction	2.24		

Box 5 Males aged 16 to 21 years in the Workforce

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	"Science-oriented" value set	0.74	I like natural history and wildlife programmes on television	3.66
	I like learning about new developments in technology	4.51	*No matter how many new products or inventions appear, most people's lives remain the same*	*3.37*
	In order to think logically we have to understand science	*3.60*	*I learn more about how to deal with life's problems by looking for logical explanations*	*3.27*
	I like space programmes on television	3.57		
	[Spend more money on] Developing robots	*3.35*		
Less agreement with, disagree with, or less support for	[Spend more money on] Finding out what makes people aggressive	3.09	*Experimenting on animals is always morally wrong*	*3.30*
	No matter how many new products or inventions appear, most people's lives remain the same	*2.95*	*[Spend more money on] Finding out what makes people aggressive*	*3.14*
	I always try to buy cruelty-free products	2.55	*In order to think logically we have to understand science*	*3.00*
	A scientific way of thinking can only be applied to a very narrow range of human problems	2.23	[Spend more money on] Nuclear Power	2.67
	I would hope to avoid using computers in my career	*1.56*	*I spend a lot of time thinking about animal welfare*	*2.47*

Box 6 Females aged 16 to 21 years in the Workforce

	Would be interested in a job related to science		Would not be interested in a job related to science	
Greater agreement with or support for	*Science cannot solve the basic human problems like poverty and unhappiness*	*3.92*	*"Alienated from science" value set*	*0.42*
	I like problems where there is a clear right or wrong answer	*3.53*	[Spend more money on] Finding out what makes people aggressive	3.78
	I find programmes about medicine and biology interesting	*3.50*		
Less agreement with, disagree with, or less support for	Science should be concerned with understanding the world not trying to change it	3.4	"Techno-Investor" value set	-.53
	[Spend more money on] Genetic research for improving food production	2.97	*I trust scientists to make responsible judgements about the dangers of their work*	*3.13*
	I trust scientists to make responsible judgements about the dangers of their work	2.92	I would like to understand a lot more about those areas of science that will affect me personally	3.02
	[Spend more money on] Space exploration	*2.66*	When people think they have foretold the future it is just coincidence	2.96
	I enjoy space programmes on television	*2.43*	[Spend more money on] Space exploration	2.51
	I spend a lot of time thinking about the environment	2.41	[Spend more money on] Trying to find evidence of life on other planets	2.42
	Science is largely irrelevant to my daily life	*2.40*	*I trust the government to make any necessary laws to control any dangerous developments in science*	*2.41*
	I trust the government to make any necessary laws to control any dangerous developments in science	2.13	*[Spend more money on] Developing robots*	*2.08*
	I would hope to avoid using computers in my career	1.36		

APPENDIX 3: Technical note

METHODOLOGY

A sample of 1,058 children and young adults aged between 11 and 21 were interviewed between 22 April and 21 May 2004. 600 interviews were conducted with school and college pupils (aged 11-18), 159 with university students (up to the age of 21), and 299 with those no longer in full time education (16-21 years). Interviews among school and college pupils were conducted in schools, on paper during self completion sessions. Interviews with university students and others not studying were conducted via an on-line self completion questionnaire. Further details for each methodology are provided below. The questionnaire was versioned due to its length with each respondent answering two out of three sections and all demographics. 704 respondents answered the questions on science being reported on in this document.

Schools and Colleges

Stage 1: Sampling Schools

A random sample of 200 schools and colleges was provided by the Schools Publishing Company. The sample comprised secondary state and independent schools and sixth form/FE colleges in England, Scotland and Wales. The sampling universe included Local Education Authority (LEA), voluntary aided/controlled, foundation schools, independent schools, and sixth form/FE colleges in England, Scotland and Wales, but excluded special schools. This sampling frame was stratified by Government Office Regions (GORs) and within each stratum, schools/colleges were selected proportional to the size of the school/colleges register, thus producing a nationally representative sample of schools/colleges. The age groups included in the survey were 11-18 year olds in curriculum years 7 to 13.

Stage 2: Selecting Schools to Take Part

A letter was sent by MORI to the head teachers of sampled schools and colleges, asking for their agreement to participate in the survey. Schools/colleges that were willing to participate were asked to name a main point of contact with whom MORI would be able to arrange details of the research. In addition, all schools/colleges willing to participate in the survey were asked to indicate how many pupils were on their school/college roll in order to help calculate the number of pupils to be selected. Once the schools/colleges had agreed to participate, the MORI team selected 25 schools to take part – stratifying the sample by region and school type to ensure a representative sample was included across the age groups. The number of pupils to be interviewed in each school, along with the sampling interval for each particular school was calculated taking into consideration the total number of pupils aged 11-18 years old in all of the selected schools/colleges.

Stage 3: Sampling Pupils

MORI interviewers made an appointment with schools/colleges to conduct the sampling visit and select pupils to participate in the research. Contacts at the schools/colleges were asked to arrange for registers, or up-to-date computer listings of pupils on their school/college rolls, to be made available (in adherence with the Data Protection Act, the names of those pupils selected to participate were not removed from the school/college premises).

The procedures for selecting the sample of pupils were as follows:

- the interviewer collected all school/college registers/listings;
- checks were made on the registers/listings to ensure that pupils who had left the school/college were not included, and that pupils who had moved class were only included once. Long-term absentees were included in the selection. Interviewers checked that pupils who have recently joined the school/college were also included;
- registers/listings were ordered by form/year (youngest through to oldest);
- a random number was provided to select a random start point to enable the identification of the first pupil to be selected to the sample;
- a sampling interval was used to select the next pupil (i.e. every nth pupil), and so on until all registers/listings had been completed;
- MORI interviewers were provided with full instructions, prior to the sampling visit.

Conducting the Fieldwork

The survey was administered by means of self-completion sessions conducted in the participating schools/colleges. The MORI interviewer arranged a convenient time and date for the self-completion session. The MORI interviewer was present during the self-completion session to explain the survey to pupils selected to the sample, to reassure them about the confidentiality of the survey, to assist them in completing the questionnaire by clarifying question wording and routing instructions, and to collect completed questionnaires. In all classroom sessions, teachers were requested to remain present throughout to assist with discipline and other issues, but not to participate in the conduct of the survey itself. As a thank you, all schools and colleges participating were sent a donation of £100.

University and Not in Full-time Education Sample

The interviews among 16-21 year olds at university or among those no longer in full-time education were conducted using an on-line panel.

Multiple sources are used to recruit the members of the on-line panel used, working with a variety of partners. These include Internet Service Providers, portals, direct marketing specialists, online advertising agencies and list brokers.

Recruitment methods range from direct emails, banner ads, pop-ups, interstitial ads, in-page links, etc. There is also an affiliate program and a 'friends and family' referral scheme, available on the panel website.

The key purpose of using a mixture of partners and methods is to get a diverse sample of panel members. Single source recruitment is not favoured because there are invariable biases in nearly all sources, and using one source only introduces systematic bias into the panel, whenever the panel is used.

All panel sign-ups are validated using a double opt-in process. After completing the registration survey panellists are instantly sent an email to validate the email address exists and belongs to the person who has completed the sign-up survey. It is only after the recipient has responded by clicking on a confirmation link in the email, that they are considered to be a full panel member and become available for selection to surveys.

Panellists will not be removed due to length of membership. However, periodically panel members with a history of non-response will be removed. Furthermore, in all correspondence to the panellists there is a 'remove' link so they could easily opt-out of the panel if they chose. Panel recruitment is an ongoing process so the panel is being constantly refreshed with new panel members.

Panel members are invited to take part in up to two surveys per month to strike a balance between keeping panellists involved, motivated and rewarded but preventing over use.

For this survey entry into a prize draw was used as an incentive.

Weighting and Data Processing

Data processing and analysis were carried out by MORI Data Services. The data were weighted to reflect the known profile of the sample population by gender within age, school type, whether in full-time education or not and area.

Interpretation of the Data

A sample of the population aged 16-21 has been interviewed, not the entire population. Consequently, all results are subject to sampling tolerances which means that we cannot assume that all differences between sub-groups are statistically significant. As a guide, figures from the main sample are subject to a margin of error of plus or minus 5 percentage points (taking into account the design effect).

Sample Profile

The sample profile is based on all 1,058 respondents as follows:

	Unweighted	Weighted
Gender	**%**	**%**
Male	45	51
Female	55	49
Year Group	**%**	**%**
Years 7 -9	30	33
Years 10 - 13	26	31
University	14	8
Working	28	26
Age	**%**	**%**
11	3	9
12	10	9
13	12	9
14	10	9
15	9	9
16	8	9
17	7	9
18	7	9
19	12	9
20	12	9
21	11	9
Region	**%**	**%**
London	11	13
South East	13	14
South West	4	9
East Anglia	11	9
East Midlands	9	7
West Midlands	9	9
Yorkshire and Humberside	11	9
North East	5	4
North West	12	12
Wales	6	5
Scotland	9	9

APPENDIX 4: Topline results

- A sample of 1,058 children and young adults aged between 11 and 21 were interviewed across England, Scotland and Wales.
- All questionnaires were completed between 22 April and 21 May 2004.
- 600 interviews were conducted with school and college pupils (aged 11-18), 159 with university students (up to the age of 21), and 299 with those no longer in full time education (16-21 years).
- Interviews among school and college pupils were conducted in 25 schools, on paper during self completion sessions.
- Interviews with university students and others not studying were conducted via an on-line self completion questionnaire.
- The questionnaire was versioned due its length with each respondent answering two out of three sections and all demographics.
- A total of 704 respondents answered the questions on science being reported on in this document.
- All figures are expressed in percentage terms unless otherwise stated.
- Number may not always add up to 100% due to computer rounding or multiple answers, or a number of not stated answers.

  An asterisk (*) denotes a figure less than 0.5% but greater than zero

SECTION A: About You

First of all we would like to ask some questions aboutyou. Please remember that your answers are confidential.

A1 How old are you?

Base: All (1,058)

	%
11	9
12	9
13	9
14	9
15	9
16	9
17	9
18	9
19	9
20	9
21	9

A3 And what year group are you in?

PLEASE TICK ✓ ONE BOX ONLY
Base: All pupils / students (759)

	%
Year 7	21
Year 8	12
Year 9	13
Year 10	14
Year 11	11
Year 12	8
Year 13	9
First year university	5
Second year university	4
Third year university	3

A4 Are you male or female?

PLEASE TICK ✓ ONE BOX ONLY
Base: All (1,058)

	%
I am a boy / male	51
I am a girl / female	49

A5 Which of the following best describes you?

PLEASE TICK ✓ ONE BOX ONLY
Base: All (1,058)

	%
White	88
British Black	1
Black Caribbean	1
Black African	1
Black Other	*
British Asian	2
Indian	2
Pakistani	1
Bangladeshi	-
Chinese	1
East African Asian	*
Other	*
Don't know	*

A6 For which, if any, of the following are you currently studying?

Base: All pupils / students (759)

	%
SCHOOL/COLLEGE/FE COLLEGE: ENGLAND AND WALES	
GCSEs	30
AS / A levels	10
NVQs (National Vocational Qualifications)	1
GNVQs (General National Vocational Qualifications)	2
Vocational A levels (also known as VCEs)	2
SCOTLAND	
School Leaving Certificate	1
O Grade, Standard grade, GCSE, Senior Certificate or equivalent	4
GSVQ Foundation or intermediate, SVQ Level 1 or 2, SCOTVEC module or equivalent	1
Higher grade/CSYS/A Level, Advanced Senior Certificate or equivalent	2
GSVQ Advanced, SVQ Level 3, ONC, OND, SCOTVEC National Diploma or equivalent	-
City and Guilds	-
UNIVERSITY ENGLAND, SCOTLAND & WALES	
Undergraduates	
HNC, HND, SVQ Levels 4 or 5 equivalent	*
Undergraduate degree	11
Post graduates	
Post Graduate Taught Course	-
Post Graduate Research	-
Post Graduate professional qualifications e.g. teaching, accountancy	*
Other	9
None of these	14
Don't know	7

W1 Which, if any, of the following best describes your marital status?

PLEASE TICK ✓ ONE BOX ONLY
Base: All non-pupils (458)

	%
Single	78
Living with partner	15
Married	2
Separated / Divorced	*

W2 In which of the following areas do you live?

PLEASE TICK ✓ ONE BOX ONLY
Base: All (1,058)

	%
London	13
South East	14
South West	9
East Anglia	9
East Midlands	7
West Midlands	9
Yorkshire and Humberside	9
North East	4
North West	12
Wales	5
Scotland	9

W3 Which, if any, of the following best describes your current work status?

PLEASE TICK ✓ ONE BOX ONLY
Base: All non-pupils (458)

	%
Paid full-time work (30+ hours per week)	43
Paid full-time work (8 – 29 hours per week)	17
Student	26
Looking after house / children	11
Other	3

W4 In which of the following areas do you live?

PLEASE TICK ✓ ONE BOX ONLY
Base: All working respondents (299)

	%
MAINLY NON-MANUAL (e.g. office worker, professional, manager)	13
Higher professional and senior management	14
Manager or technical and intermediate professional	9
Other professional / non-manual	9
Don't know, but non-manual	7
MAINLY MANUAL (e.g. builder, craftsperson, factory worked)	9
Skilled manual	6
Partly-skilled manual	12
Unskilled manual	8
Don't know, but manual	11

W5 Which, if any, of these qualifications is the highest that you have obtained to date?

PLEASE TICK ✓ ONE BOX ONLY
Base: All working respondents (299)

	%
O-Level / GCSE	36
Vocational qualifications (NVQ1+2)	13
A-Level or equivalent (NVQ3)	35
University degree or diploma or equivalent (NVQ4)	4
Higher university degree / Doctorate / MBA or equivalent	2
Other	6
No formal qualifications	-
Don't know	3

SECTION D: The World Around Us

This section asks about your views on the world around us.
Base for section D: 704

D1 In which, if any, of the following groups of subject areas is your:
a) Preferred subject?
b) Second preferred subject?

PLEASE TICK ✓ ONE BOX ONLY UNDER a) AND ONE BOX ONLY UNDER b) BELOW
Base: All

	a) Preferred %	b) Second preferred %
Sciences (e.g. physics, maths, computer science, biology, chemistry, environmental science)	20	22
Arts & humanities (e.g. languages, English)	14	21
Social sciences (e.g. sociology, economics, psychology, history, geography, communications, media)	15	20
Art, design, music and drama	30	17
Sport	26	15
Technology, Craft and Design and Technology	18	19
Other subject	4	2
None of these	2	3
Don't know	3	3
Not stated	3	7

D2 Which, if any, of the following best describes what you like about your preferred subject - that is the subject you outlined at D1?

PLEASE TICK ✓ ONE BOX ONLY
Base: All

	%
I find it easy	42
I get to use my brain	34
I get to think logically	28
I get to use my body / do something physical	32
It is something I am interested in	73
It is something I know a lot about	43
I get the chance to use my imagination	36
I feel it's relevant to my life now	27
I feel it's relevant to my life in the future	35
I like the teacher	20
It's a way to explore the word around me	15
It deals with relationships between people	12
I like my class mates	29
None of these	1
Don't know	6

D3 For EACH pair of statements below please indicate the extent to which you agree with the statement on the right hand side or the statement on the left hand side by ticking the box in the most appropriate position.

Ticking a box closer to the left hand side means you are more likely to agree with the statement on the left hand side and ticking a box closer to the right hand side means you are more likely to agree with the statement on the right hand side. PLEASE TICK ✓ ONE BOX ONLY ON EACH LINE A - K
Base: All

		% across					
A	I like natural history and wildlife programmes on television	18	17	22	18	21	I am bored by natural history and wildlife programmes on television
B	I like learning about new developments in technology	22	28	28	10	8	I am <u>not</u> interested in learning about new developments in technology
C	I would <u>not</u> be interested in a job related to science	24	19	21	17	16	I would be interested in a job related to science
D	I find programmes about medicine and biology interesting	13	16	23	20	24	I am bored by programmes about medicine and biology
E	I think I know pretty well all I will ever need to know about the areas of science that will affect me personally	7	9	34	27	19	I would like to understand a lot more about those areas of science that will affect me personally
F	A scientific way of thinking can be applied effectively to most problems in life	11	24	41	11	9	Scientific ways of thinking only apply to a very narrow range of human problems
G	I am bored by space programmes on television	27	14	22	18	15	I enjoy space programmes on television
H	I like science fiction	18	20	24	14	20	I avoid science fiction
I	I expect to use computers in my career	41	21	21	6	7	I would hope to avoid using computers in my career
J	I learn more about how to deal with life's problems from reading fiction or watching films and drama programmes	12	21	35	16	12	I learn more about how to deal with life's problems by looking for logical explanations
K	I like problems where there is a clear right or wrong answer	23	18	29	12	13	I like problems where there are several possible answers

D4 For the next three questions, I would like you to think about three different scholars / researchers:

Firstly for Dr A who undertakes research into the origins of the universe
Thinking about Dr A, please tell me whether you think this person is very likely, somewhat likely or not likely to be each of the following:
PLEASE TICK ✓ ONE BOX FOR EACH LINE A – L
Base: All

	Dr A …	Very likely	Some what likely	Not likely	Don't know
		% across			
A	Is very intelligent	58	31	2	7
B	Does not believe in God	14	35	21	28
C	Has little social life	14	42	21	19
D	Uses words no-one understands	31	42	14	10
E	Will work for years without being certain of success	27	36	19	15
F	Has an interesting job	34	40	13	11
G	Leads an exciting life	13	34	34	15
H	Likes challenges and risks	28	35	20	15
I	Seeks personal fame	12	33	34	18
J	Is female	7	25	26	38
K	Seeks wealth	14	33	28	21
L	Is more interested in thoughts than in feelings	19	34	16	27

Secondly for Dr B who undertakes research looking for a cure for AIDS or cancer

Thinking about Dr B, please tell me whether you think this person is very likely, somewhat likely or not likely to be each of the following:
PLEASE TICK ✓ ONE BOX FOR EACH LINE A – L
Base: All

	Dr B …	Very likely	Some what likely	Not likely	Don't know
		% across			
A	Is very intelligent	66	24	1	6
B	Does not believe in God	9	29	26	34
C	Has little social life	12	35	29	21
D	Uses words no-one understands	18	39	26	14
E	Will work for years without being certain of success	35	36	15	11
F	Has an interesting job	37	41	9	10
G	Leads an exciting life	16	41	20	20
H	Likes challenges and risks	35	34	12	15
I	Seeks personal fame	15	29	32	20
J	Is female	15	35	11	36
K	Seeks wealth	13	28	32	24
L	Is more interested in thoughts than in feelings	15	22	32	28

And thirdly for Dr C who writes books about famous artists

Thinking about Dr C, please tell me whether you think this person is very likely, somewhat likely or not likely to be each of the following:
PLEASE TICK ✓ ONE BOX FOR EACH LINE A – L
Base: All

	Dr C …	Very likely	Some what likely	Not likely	Don't know
		% across			
A	Is very intelligent	26	48	13	11
B	Does not believe in God	7	29	20	42
C	Has little social life	17	26	36	18
D	Uses words no-one understands	13	24	46	14
E	Will work for years without being certain of success	14	33	34	16
F	Has an interesting job	24	38	24	11
G	Leads an exciting life	20	38	23	17
H	Likes challenges and risks	15	30	34	18
I	Seeks personal fame	37	34	10	16
J	Is female	12	33	14	38
K	Seeks wealth	36	31	11	18
L	Is more interested in thoughts than in feelings	18	28	21	29

D5 To what extent do you agree or disagree with each of the statements below?

PLEASE TICK ✓ ONE BOX ONLY ON EACH LINE A - W
Base: All

		Aree strongly	Agree slightly	Neither agree nor disagree	Disagree slightly	Disagree strongly	Don't know
		% across					
A	Science and technology are making our lives healthier, easier and more comfortable	32	37	17	5	1	5
B	I trust the government to make any necessary laws to control any dangerous developments in science	8	25	23	18	15	7
C	Science should be concerned with understanding the natural world, not trying to change it	23	33	26	7	2	6
D	I trust scientists to make responsible judgements about the dangers of their work	18	35	22	10	4	7
E	No matter how many new products and inventions appear, most people's lives remain the same	11	31	21	19	8	6
F	Scientific advances are going too far and too fast to be controlled	9	26	26	20	8	8
G	Computers will soon be essential in the everyday lives of ordinary people	46	28	13	3	2	6
H	I believe that natural remedies are best for treating most illnesses	15	19	32	15	6	10
I	I spend a lot of time thinking about animal welfare	8	14	31	19	18	7
J	I spend a lot of time thinking about the environment	7	19	29	21	15	6
K	People like me and my family have little chance to influence the government	28	24	24	7	6	8
L	When people think they have foretold the future it is just coincidence	16	24	30	10	5	12
M	Experimenting on animals is always morally wrong	38	21	17	11	7	4
N	In order to think logically we have to understand science	11	29	32	12	5	6
O	Science cannot solve the basic human problems like poverty and unhappiness	28	24	23	11	4	8
P	The likely effects of global warming have been exaggerated	8	20	27	18	10	13
Q	I am interested in doing something about problems in the community	13	23	33	12	7	8
R	I feel that people like me can make our voices heard if we go about it the right way	19	28	22	11	7	9
S	Scientists should take stories of alien abduction seriously	9	16	30	15	18	10
T	I always make sure that I buy cruelty-free products	11	19	29	16	11	10
U	The media has exaggerated the dangers of GM foods	11	20	34	9	6	17
V	Science is largely irrelevant to my daily life	6	15	31	22	13	10
W	I have tried to influence the way things are done at my school or college	10	18	32	14	12	10

D6 Do you think that more money, less money or about the same amount of money should be spent on each of the following?
PLEASE TICK ✓ ONE BOX ONLY ON EACH LINE A - I
Base: All

		Much more money spending	Some more money spending	The same amount of money spending	Somewhat less money spending	Much less money spending	Don't know
		% across					
A	Nuclear power	9	16	34	16	8	14
B	Finding a cure for AIDS	52	27	8	2	1	6
C	Developing robots	9	13	27	19	19	9
D	Space exploration	17	19	27	17	10	7
E	Genetic research for improving food production	16	27	31	8	6	8
F	Making environmentally-friendly products	30	36	19	3	1	7
G	Finding out what makes people aggressive	15	24	33	11	6	7
H	Trying to find evidence of life on other planets	17	20	24	16	13	7
I	Research for national defence	18	23	30	9	5	11

D7 And, which, if any, of the things listed below have you done in the past two to three years?
PLEASE TICK ✓ ALL THAT APPLY
Base: All

	%
Given my time to an organisation that helps the handicapped or people in need	28
Made a speech in front of others	49
Collected money for a good cause or charity	47
Written a letter to the editor of a newspaper, magazine or television programme	17
Collected signatures for a petition	17
Been on a demonstration	13
Taken part in sponsored activities or collected money for good causes	47
None of these	15
Don't know	4
Not stated	4

D8 Please read sections A, B, and C below and, for each section, tick the statement which is the closest to the way that you personally feel.
TICK ✓ ONE BOX FOR EACH SECTION Base: All

		%	
A	I would support scientific experiments on live animals if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	21	TICK ONE BOX ONLY
	I would not support scientific experiments on live animals even if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	35	
	I am unsure how I feel about supporting scientific experiments on live animals if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	38	
B	I would support cloning of animals such as Dolly the sheep if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	31	TICK ONE BOX ONLY
	I would not support cloning of animals such as Dolly the sheep even if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	36	
	I am unsure how I feel about supporting cloning of animals such as Dolly the sheep if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	29	
C	I would support genetic modification of plants (e.g. for food stuffs / crops) if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	35	TICK ONE BOX ONLY
	I would not support genetic modification of plants (e.g. for food stuffs / crops) even if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	23	
	I am unsure how I feel about supporting genetic modification of plants (e.g. for food stuffs / crops) if it was shown that this was necessary to achieve new agricultural methods that would significantly benefit the environment	37	

D9 Please read sections A, B, and C below and, for each section, tick the statement which is the closest to the way that you personally feel.
TICK ✓ ONE BOX FOR EACH SECTION Base: All

		%	
A	I would support scientific experiments on live animals if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	17	TICK ONE BOX ONLY
	I would not support scientific experiments on live animals even if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	49	
	I am unsure how I feel about supporting scientific experiments on live animals if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	30	
B	I would support genetic modification of plants (e.g. for food stuffs / crops) if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	35	TICK ONE BOX ONLY
	I would not support genetic modification of plants (e.g. for food stuffs / crops) even if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	23	
	I am unsure how I feel about supporting genetic modification of plants (e.g. for food stuffs / crops) if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	37	
C	I would support genetic modification of animals (e.g. in medical research) if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	19	TICK ONE BOX ONLY
	I would not support genetic modification of animals (e.g. in medical research) even if it was shown that this was necessary to obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	40	
	I am unsure how I feel about supporting genetic modification of animals (e.g. in medical research) if it was shown that this was necessary to achieve obtain nutritionally improved food that tastes and costs the same as the food I eat at the moment	36	

D10 Which two or three, if any, of the following would help make a better world?

PLEASE TICK ✓ UP TO THREE RESPONSES BELOW
Base: All

	%
Halving the number of people living in poverty	57
Ensuring that every child in the world goes to primary school	50
Making sure that boys and girls have equal opportunities in education	49
Reducing the number of women who die in child birth	27
Improving access to safe drinking water	72
None of these	2
Don't know	4
Not stated	3

APPENDIX 5: Bibliography

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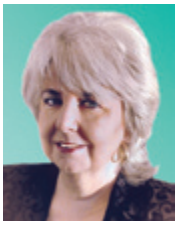
[vii] Op.cit. Haste 2004

APPENDIX 6: About the author



Helen Haste is the first Director of Research for the Nestlé Social Research Programme. She is Professor of Psychology at the University of Bath and Visiting Professor at Harvard Graduate School of Education.

Her research has mainly been with samples of young people. She has a long record of publication in moral, social and political values and on ethics and citizenship. She is currently working on a book on citizenship and education.

Her work includes research on the interface of science and culture, on the public image of science particularly in the media, and on culture and metaphor. She has also been involved extensively in research on sex roles, and social and psychological aspects of gender, including issues in gender and science.

She has published in popular science journals and magazines and news media as well as extensively in the academic literature.

Her books include:

The Sexual Metaphor 1994 Harvard University Press

The Development of Political Understanding (with Judith Torney-Purta) 1992 Jossey Bass

Making Sense: the child's conception of the world (with J S Bruner) 1987 Methuen

Morality in the Making (with Don Locke) 1983 Wiley

Helen Haste regularly broadcasts on radio and television. She also frequently gives public lectures, in addition to her university work. She has been involved for over twenty years in the British Association for the Advancement of Science, an organisation dedicated to making science accessible to the public, which works closely with the media. She is currently Chair of the BA Council, and Vice-President.

Her interest in values and citizenship is reflected in her involvement with the International Society of Political Psychology, of which she was President in 2002. She is on the editorial boards of several scholarly journals relating to values. She directed a Nestlé Family Monitor project on Moral Values in 1999.

The goal of the Nestlé Social Research Programme is to produce independent social research that will over time build up a picture of the health, lifestyle and aspirations of the nation's young people.

The research is supported by the Nestlé Trust and is consistent with its commitment to the welfare of young people.

Projects are selected through consultation with professional experts. The focus is on research that has relevance and usefulness to the community at large, especially to agencies, institutions and individuals working with and on behalf of young people, under 35.

The Nestlé Social Research Programme was formed in 2004.

Nestlé Social Research Programme

Incorporating the Nestlé Family Monitor

The Nestlé Social Research Programme succeeds the Nestlé Family Monitor which started in 1997 and which published 17 studies (details available from the address which follows).

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